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at the Max Planck Institute in Freiburg**

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Preface

The first volume in this series presented the work of the research unit after its first decade of activity. Also published in English, it was intended as a contribution both to the international dialogue in research matters and to intercultural comparative research.

The present reader provides insights into the work of the research unit in the second decade of its existence, the aim being not only to report on the various projects and their findings, but also to document the research methods and modes of operation. Consequently, whereas some of the articles are highly project-related and offer information on the essential findings which have resulted up to the present project phase, others deal less with specific projects and related issues but tackle research questions which have arisen from studying the project data. Although the scientific collaborators in the institute always work within the frame of a project, they may - and it is desired that they do - continue to pursue their own research interests and theoretical concepts. An approach of this kind not only engenders a variety of research topics, it also stimulates additional research interests which, in turn, are able to trigger off the conception of new points of emphasis for research projects. The multiplicity of topics treated can be readily seen from the present volume:

- attitudes towards and implementation of criminal law,
- criminality and criminal careers,
- fear of crime, victimization and hidden crime,
- sanctions, imprisonment and correctional treatment.

Empirical and criminological research requires an enormous amount of personal and financial resources. We therefore would like to express our deep gratitude to individuals and organizations. Without the generous financial support of the Deutsche Forschungsgemeinschaft, a number of the research projects would have been impossible. Therefore we are obliged to this organization and to the Max Planck Gesellschaft for their ever helpful promotion.

This volume would not have been possible without the cooperation of a number of collaborators. We would like to mention the special assistance rendered by Ms. Erica Long-Michalke (translator / interpreter), Mr. Matthias Michalke (translator) and Ms. Andrea Würger who showed a great deal of personal commitment in the translation of the German manuscript. A special note to thanks must go to Mr. Raimund Tauss (psychologist) for the production of the setting copy and for the mastery with which he solved all the technical problems which arose along the way. We also wish to acknowledge the work of Ms. Ilse Irmgard Klär (sociologist) who corrected the drafts of the setting copy and that of Ms. Beate Lickert and Ms. Martina Müller who typed out several drafts of the German manuscript.

Freiburg, August 1988

Günther Kaiser, Isolde Geissler

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**Criminological
Research at the
Max Planck Institute**

Criminological Research at the Max Planck Institute

Günther Kaiser

I.

Eighteen years have elapsed since the Max Planck Institute started conducting criminological research; in this respect, criminology can virtually be said to have "come of age". Although the precursors of the Institute go back another twenty years, systematic empirical-criminological research at the Institute commenced in 1970. In that year, a criminological research unit was founded in addition to the group of jurists who had already been working in the field of comparative criminal law for many years.¹

Whereas comparative criminal law is concerned with carrying out a systematic comparison of solutions offered by criminal law in the different legal systems, comparative criminology perceives as its primary task the analysis of crime, crime control and the explanation of criminal behavior. In addition to study of law-breakers, such a conception also incorporates study of victims as well as empirical investigations on the impact of sentencing practice. By means of supplementary research, realism - an aspect which had at times been neglected as an object of scientific investigation - is meant to be reintroduced into science of criminal jurisprudence without forsaking the time-tested tenets and means at the disposal of criminal law. However, research in the **Freiburg conception**, is not steered by the need for unscientific harmonization, but rather by the awareness that the problem complex is a complicated, involved one with myriad inter-connections. This implies that every member of the research unit must be ensured sufficient license to be able to pursue his or her own ideas and theoretical concepts and not be bound exclusively to research topics which have been selected by others.

¹ See Kaiser 1971.

What is more, this conception gained in importance and acquired greater integrative power since modern criminology stopped seeing data on crime and sentencing as static, unproblematic facts and began to perceive them within the frame of their inception processes, dynamics and social repercussions directly as an object of analysis. As a result, comparative criminal law, comparative criminology and criminal policy the world over have come closer to one another.

The target of empirical research at the MPI is thus essentially determined by four outline conditions which can be characterized as international, national, institutional and research economy aspects.

In this context, "international" has always meant a scientific orientation which extends beyond the national boundaries of the Federal Republic of Germany as well as close proximity to worldwide issues and development trends. In concrete terms, it is a question of if, and under which conditions, criminal law and its alternatives are able to guide individual, social and administrative processes and, if so, with what consequences.

The national aspect refers to state of empirical criminology in the Federal Republic of Germany itself, and in particular to the gaps in research which could not or not sufficiently be closed by other German scientists and working groups.

The institutional point of view, on the other hand, emphasizes the research tasks carried out jointly by the different units of the Max Planck Institute taking special account of the integration-oriented approach of comparative criminal law and comparative criminology.

Finally, the research economy aspect simply implies that it is only possible to initiate and undertake as much research as the personnel and practical means as well as the capacity and structure of the research unit allow.

At the center of interest is the entire spectrum of **crime control and crime**. This approach predicated on the assumption that the practices and decision-making patterns of the police and the courts contribute considerably to the picture which is acquired of crime and the personality of the criminal. Owing to the molding and shaping capacities which institutions or agencies of criminal social control are presumed to have, we decided to focus on these in the first instance without, however, neglecting the possibilities of informal conflict resolution. Internal "administration of justice" at the place of work as a possibility and applicable case of private crime control, on the one hand, and the public prosecutor's office as a screening device and decision-making authority within the system of formal crime control on the other, illustrate the wide scope of the issues under study.

Our research is expected to furnish information on the operation of private and state crime control and to do so against the background of dark field criminality, willingness to report crimes, reporting-behavior and fear of crime. We also hope that it will enable us to make more precise statements about: the empirical significance of equality and individualization; the influence exerted by criminal law on the individual and on the society as a whole; the structure of criminality and criminal

statistics; and, finally, about the populations of both the delinquents and the victims of crime.

II.

In keeping with the **research strategy** described above, we have addressed, as additional areas of research, the question of what is known as the internal "administration of justice" at the place of work as an institution of private crime control, the police and the courts. Moreover, we have inquired into topical aspects of juvenile delinquency and economic crime as well as homicide and the socio-cultural relation which exists between the personality of the offender, prognosis, sentencing and treatment.²

Furthermore, problems associated with juvenile delinquency (*Villmow, Stephan and Arnold*) and the tasks of juvenile prisons have brought home the need for additional and more precise information about social profile and the personality dimensions of the inmates of juvenile prisons (*Lamp*). However, we did not let our efforts rest at this regional, albeit generalizable analysis of data, but went on to study juvenile imprisonment within an international comparative framework (*Dünkel*). All of this work was preceded by projects whose research object was the pretrial detention of juvenile offenders, their treatment and prognosis as well as their subsequent development as clients of probation or as inmates in juvenile prisons (*Kury*).

A number of research projects are concerned with evaluating projects which have already been put into practice. They address the topic of social therapy treatment as practiced at the Tegel prison in Berlin, the Gelsenkirchen and Düren prisons (*Ortmann*) as well as the correctional institution in Kassel (*Nemec*).

Yet another project concerned with the effect of sanctions and also anchored in a comparative law project involving the penal law research unit, dealt with the subject of "fines" (*Albrecht*). It was especially the introduction of the day-fine system in 1975, the extension of the area of application of the fine as a result of the reform of the penal code, the collection of fines - hitherto neglected by empirical studies - and the uncertainty about how substitute imprisonment for fine default would develop in the future, that triggered off this investigation. The topicality and import of both the issues and the research findings have been underscored by the considerable echo which this project has had abroad particularly in Anglo-American circles.

2 See Forschungsgruppe Kriminologie 1980; Criminological Research Unit 1982.

The Institute's research interest is targeted not only on the descriptive accompaniment of new criminal legislation and the implementation thereof; it also extends to procuring valid data on the special and general preventive effect of new legislation. Investigations bearing on the laws relating to environmental offences, white-collar crime and abortion furnish additional examples of implementation research.

A further area of research is the relationship between what is known as the "dark field of crime" and officially registered criminality. Surveys conducted in the 1970's and 1980's provided information on this topic which has increasingly been incorporated into international comparison (*Stephan, Arnold*). Moreover, victim surveys have cleared the way for new research prospects which focus on the status of the victim in criminal proceedings and on restitution.

In the light of the economic crises which have occurred since the seventies, the connection between unemployment and crime has also been added to the research agenda (*Martens, Albrecht*).

Altogether, some 40 research reports have resulted from this scientific activity and, in the 1980's, about 50 articles per year have been published in journals here and abroad.

III.

The criminological research unit at the MPI has continually, openly and in many respects faced up to criticism levelled by both the scientific public and practitioners in the field and has documented these criticisms in a manner which is accessible to everyone. The reports published on the discussions held at ten research colloquia provide information in this respect.³ However, this increased pressure to justify our activities occasionally exceeds the expectable capacity for tolerating scientific criticism and assimilating it in a profitable manner. This is a fundamental issue. It touches on the question of whether, given such multi-stage substantiation, justification and control mechanisms, empirical research within the criminal law system will be able to stand the test of time. Previous experience says that it will. This means that it is useful to conduct empirical research as long as not only criticism but also the independence and the liberty of criminological research are guaranteed. However, there has occasionally been speculation that precisely the latter might be deficient. It is perhaps for this very reason that the research activity here in Freiburg has been criticized by sociologists specializing in crime and devi-

3 The last three reports were written by: Nemeč 1984; Tauss 1986; Arnold and Geissler 1988. References to the earlier reports can be found in Kaiser 1985, p.1053, note 69.

ance.⁴ Although the potential dangers associated with an excessively far-reaching identification with the prevailing law should not be underestimated, the criticisms mentioned seem to stem from a misunderstanding. Not only critical criminology or the sociology of criminal law is protected by institutional scientific autonomy; so is the science of criminal jurisprudence. The freedom and independence of research are not only possible outside of the system of the science of criminal jurisprudence. Also within it can observation and scientific criticism be guaranteed without necessarily implying compliance with legitimation requirements. A number of the research projects mentioned above refute at least the sweeping assertion that independent basic research is impossible or even unacceptable within the criminal law system. The mere fact that an institutional, organizational or personal connection with jurisprudence exists can therefore not be considered suspect without further reflection. This could at best apply to state research which is subject to directives.

IV.

Research activity in the 1980's, has so far focused on sentencing research, including juvenile correctional facilities, adult prisons, prison law, juvenile delinquency, environmental and economic crime and narcotics offences. The **main points of emphasis** can be classified according to the three following problem complexes or leading themes:

- Research on penal sanctions and treatment,
- Research on the implementation of penal norms, and
- Cohort studies.

One of the tasks originating from the leading theme "**research on penal sanctions and treatment**" is the investigation of different forms of correction and discharge from prison among career offenders and their possible effects (*Dünkel*); another is a comparative longitudinal study on regular prisons and social therapy model institutions in Nordrhein-Westfalen (*Ortmann*); and yet another is the investigation of the influence exerted by education and work as well as liberalization measures in prison (furlough, work release, open-prison settings) on the subsequent course of the term of incarceration and post-release performance (*Geissler, Grosch*). The juvenile prison project predicates on a theory of conformable and deviant behavior of juvenile inmates during their term in prison and the

4 Sack 1978; Sack 1985; also see Kreissl, Ludwig 1986 as well as Kaiser 1985, p.1036.

purpose of the project is to test said theory (*Ortmann*). Further projects in this section are an evaluation study concerning the rehabilitation and recidivism of drunken drivers in Baden-Württemberg (*Rosner*), a process evaluation of the social therapy prison in Kassel (*Nemec*) and the evaluation of a social therapy oriented correctional program at the prison for juvenile offenders in Berlin-Plötzensee (*Tauss*).

Although the theme "research on the implementation of penal norms" refers to very different offence structures, such as abortion, environmental and economic crime, yet the common point was always the acceptance and implementation of penal norms. With the phasing out of the nation-wide recording of economic crimes according to standardized criteria in 1985 (*Liebl*), research on economic crime could essentially be brought to a close. A continuation of sorts is nevertheless to be found within the framework of the surveys on the sequestration of the proceeds of crime (*Dessecker and Smettan*) and environmental crime (*Meinberg, Hoch and Link*). The empirical survey on the implementation of the reformed version of § 218 of the German Penal Code (StGB) was directed by the research question of how penal norms are used in the criminal prosecution process and how the control and sanctioning possibilities are used. This task includes the in-depth analysis of the techniques of criminal investigation and peculiarities of legal procedure concerning the pertinent offences. Two population surveys, a judge and public attorney survey as well as the analysis of case records are meant to throw light on the dark field, existing reporting mechanisms, special investigation strategies and other prosecution structures (*Liebl et al.*). Further sub-projects studied the attitudinal and decisional patterns exhibited by women affected by § 218, their acceptance of and experiences with the application of the law (*Holzhauser*) as well as the attitude and behavior of the medical profession (*Häußler*). Finally, the project on environmental crime was and continues to be concerned with the empirical investigation of the implementation of penal norms in the field of environmental law (*Meinberg et al.*). Research questions include the translation of the legislator's intentions into practice; the significance of the premises governing the actions and decisions of the administrative agencies responsible for environmental protection; the strategies and criteria for a harmonization of the aims to be pursued by action in the ecological field; as well as the processes by which organizational structures gradually achieve autonomy as a consequence of the allocation of duties.

International comparative research, be it as an intercultural comparison of criminal victimization (*Arnold, Pitsela*), as comparative research on sentencing practices in the Federal Republic of Germany and in Austria (*Albrecht*) or as an international comparison of custodial measures used in the juvenile criminal justice system (*Dünkel and Meyer*) follows the afore-mentioned themes but, needless to say, does not stop there. The fear of crime, the perception of crime, victimization, reporting behavior and attitude to the social control exerted by means

of criminal law, characterize the victimological project whereas, in comparing sentencing practice, the processes involved in the emergence of norms and rules in the field of the law and court decisions on sentencing are investigated with a view to their effects on the results of and reasons for decisions.

The third and independent theme is the "**cohort study**" on the development of police recorded crime and convictions (*Schneider, Sutterer and Karger*). Age-dependent courses of officially registered crime as well as the influences exerted by social change and criminal justice interventions on the development of delinquency are the focal points of this study. The theory of social control and the labelling approach furnish the most important hypotheses for the analysis of careers. Of concrete interest is the question of which and how many persons enter the control system, how long they remain there and with what consequences.

In the light of the current controversy in North America about career criminal research and the strategy of the "selective incapacitation" of offenders, longitudinal research has of late been the target of criticisms underpinned by research ethics. In this context, there is a tendency to import the American controversy into this country and to make expurgatory distinctions between morally "proper" and morally "offensive" cohort research.⁵ Accordingly, cohort research is considered objectionable when it allows any association with selective incapacitation. In this context, it is suggested that in West German criminology too, especially in Freiburg, a similar strategy is being pursued and that it, furthermore, consumes the greater part of the available research resources. Such accusations are, however, not only totally unfounded, they are also indicative of an utter failure to recognize the concrete aims of the German cohort projects. Moreover, to the best of our knowledge, the strategy of selective incapacitation is neither seriously advocated nor encouraged by anyone in this country be it in academic teaching, research or criminal policy.

V.

The question of the **sequestration of the proceeds of crime** in the case of narcotics offences and in the framework of organized crime was tackled as a continuation of the sentencing, treatment and implementation research already initiated and as a continuation of several individual undertakings in the field of narcotics offences (*Dessecker and Smettan*). At the same time, this constitutes an analysis of the current **modus operandi** with respect to the forfeiture and confiscation provisions which exist under criminal law. This brings us to a problem area which has hitherto been relegated to the fringes of criminal research and which therefore, to say nothing of the needs of criminal policy, calls urgently for empirical clarification.

5 See Bettmer, Kreissl and Voss 1988.

Not unlike the other projects concerned with implementation research, this project, too, is being planned and conducted jointly with the MPI's criminal law research unit. In keeping with their size and the complexity of the issues involved, these inter-disciplinary projects engage the greater part of the institute's research potential.

In the light of the current significance of **restitution** as an objective of punishment and in continuation of the **victim research** undertaken at the MPI thus far as well as the recording of mechanisms of mediation in the immediate social environment, the status of the victim of crime and the impact of the Opferschutzgesetz (Crime Victims Protection Statute) passed in 1986 are to be taken as objects of empirical research (*Kury*). For this purpose, the body of knowledge accumulated thus far at the Institute on the repercussions of crime for the victim and the formal reappraisal of these repercussions is to be recorded and evaluated. Efforts will then be directed at the detection and identification of victims's needs which are directed, on the one hand, at the immediate social surroundings and, on the other, at the system of social control through criminal law. Questions of restitution, of victim compensation by the offender and of the possibilities of deformalizing the solution of conflicts by criminal law are at the center of this project.

Even though other criminological working groups such as those at the chairs for criminology at various universities, at the Bundeskriminalamt (Federal Office of Criminal Investigation), the Kriminologisches Forschungsinstitut Niedersachsen (Niedersachsen Criminological Research Institute), the Sonderforschungsbereich (Special Research Department) in Bielefeld or the Institutes in Konstanz and Tübingen are engaged in investigating somewhat similar research topics, there is no danger of superfluous repetition of research. Insofar as overlap occurs, it serves more the purpose of mutual control than a duplication of information. When, in addition to the implementation of penal norms, issues of diversion and prevention are considered, crime control remains the focus of attention. Indeed, the task of theory-based research is being taken more seriously than previously and greater emphasis is being placed on comparative investigation than was the case in the 1970's. A series of international research colloquia extending from Eastern Europe to Central America have opened up worthwhile opportunities for informative dialogue and for reappraising our own positions. These opportunities are also to be taken advantage of in the future.

The **further development of the research strategy** of empirical investigation pursued thus far at the MPI, will include organized crime and criminal procedure. Although neither field of research is new, both are nevertheless significant in their own way. Whereas, in one case, it is the reform of criminal procedure, presently in the pipeline, which suggests the need for an empirical stocktaking, in the other it is the growing dangers posed by criminal organizations operating on an in-

ternational level which call for investigation. Moreover, police prosecution of criminals is once more in need of scientific attention, and that, as far as possible, in the context of international comparison. Although the research topics appear very dissimilar, they coincide nevertheless insofar as the prospects of controlling crime and, above all, organized crime hinge essentially on the validity of the prevailing statutory rules and that means on the enforcement of the law by means of criminal proceedings governed by the rule of law.

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1

Attitudes towards and
Implementation of
Criminal Law

Abortion from the Perspective of the Medical Profession

An Empirical Survey of the Attitude of Gynecological Practitioners to Abortion and its Statutory Regulation

Monika Häußler-Sczegan

Abortion as a problem of social politics is a widely discussed and highly controversial topic. Two perspectives are forcibly present in every discussion: that of the unborn child and that of the pregnant woman. In the following, we shall, however, address a third perspective which is often neglected in this context, namely, the perspective of those persons who are responsible for performing the abortion: that of the physicians who are concerned with abortion.

The medical profession is particularly affected by the statutory regulation of abortion which is currently operative in the Federal Republic of Germany since the physician plays an essential role within the framework of the procedure preliminary to a legal abortion.

The revised version of § 218 et seq. of the German Penal Code lays down various grounds on which abortion is not punishable. Although the law specifies the individual grounds, it also leaves a certain room for manoeuvre in providing that the grounds for an abortion have to be ascertained on the basis of "medical knowledge".¹ The physician is therefore entrusted with a key function in the process of the enforcement of legal norms. Whatever he/she understands as being grounds for an abortion in the sense of § 218 et seq. of the German Penal Code becomes social reality.

This decisive role which now confronts the physician in the framework of the implementing provisions stipulated in § 218 et seq., is seen by the medical profes-

1 See Eser 1980, p.164.

sion, today as in the past, as problematic. The discussion which has been going on in the relevant medical publications since the introduction of this regulation, is a vivid testimony of the problems involved.² It is deplored that the law leaves excessive room for arbitrary decisions and that there are no clear-cut indication criteria which physicians can use as guidelines. Particularly in connection with abortion on social grounds, physicians see problems which call into question the "practicability of the law".³

Indication on social grounds is one of four circumstances which are considered "grounds" for allowing a legal abortion to be performed. Indication on social grounds is based on the consideration that the "general social situation of the pregnant woman and her family (could) also engender conflicts of such gravity that the pregnant woman cannot be compelled by the methods of criminal law to make sacrifices beyond a certain level in favor of the unborn child".⁴ Of the 84,274 abortions registered in the Federal Republic in 1986, 85.8% qualified on social grounds. This implies that the indication which is most "disputed" in the eyes of physicians, is the most significant in terms of figures.

The following describes physicians' attitudes to abortion and its statutory regulation; those physicians who are most frequently confronted with abortion-related problems in daily practice - the gynecologists - will have an opportunity to express their opinion. Furthermore, we shall address the question of which factors determine the physician's attitude to abortion.

1. Theoretical perspectives

A possible factor influencing the attitude to abortion is the statutory regulation of this issue. In the Federal Republic of Germany, the performing of an abortion is, in principle, still prohibited by the law. The revised version of § 218 et seq. of the German Penal Code merely provides for specific exceptions - indications or grounds - the existence of which revoke this prohibition and facilitate the performing of a legal abortion. In the event that abortions are not based on the exceptions provided for by the law and that the concomitant procedure prescribed by it is not observed, the legislator threatens with sanctions.⁵ The threat of sanctions is largely

2 E.g., Stoll and Sievers 1976; Lau 1978; Arzt 1979; Schumann 1979; Hepp 1979; Mayer 1980; Stoll 1980; Poettgen 1980; Peterson 1982; Lau 1983; Poettgen 1984; Schuth and Siebers 1985.

3 See above all, Arzt 1979; Lau 1978; Hepp 1979.

4 According to BVerfGE, 39, 1, p. 50.

5 On the details of the Law see Augstein and Koch 1985; Eser 1980, 1985.

directed to the physicians involved who have a central position within the framework of the statutory regulation of abortion.

According to the concept of general prevention, the norms of criminal law and the concomitant threat of sanctions aim not only at deterring potential offenders, but also at influencing the value-orientation of those the norms are directed to. The norms are intended to be internalized and to function in the individual as an internal behavioral control.⁶ From the criminological viewpoint, the question thus arises what significance those norms of the revised § 218 et seq. of the German Penal Code which provide for sanctions could have for the norm-orientation of the physician in this context; in other words whether and to what extent the physician's attitude to abortion is influenced by the statutory threat of sanctions.

From the sociological point of view, we may basically presume the existence - with reference to the abortion issue - of a discrepancy between the general moral assessment of abortion and the latter's judgement by criminal law.⁷ Zundel et al. (1982)⁸ observed that personal value and norm concepts of abortion are closely related to the value and norm concepts which the individual perceives and assumes to exist in his environment. Accordingly, the attitude to abortion is essentially marked by a person's social environment, that is, the respective social reference group.

An important reference group for the medical profession is its own occupational group with its specific "professional" values. It is, indeed, precisely a characteristic of classical professions - as whose prototype medicine is commonly seen in sociology - that they create their own professional ego-ideal which is built up by the specific occupational group according to the norms peculiar to the guild.⁹ This identity-molding function of the professions is particularly typical of the medical profession.¹⁰ The value central to the physician's professional identity is the maintenance and restoration of "health" as well as the maintenance and fostering of life per se.¹¹ Through the Hippocratic oath, these "fundamental values" are anchored deep in the physicians' traditional self-perception.¹²

The abortion topic is thus seen by many physicians as one which is plagued with conflict. This is all the more so as both the taking of human life by the physician and the refusal to help a woman in distress, run counter to the ethics of the

6 See Albrecht 1985.

7 See Siebel 1971; Oeter and Wilken 1981.

8 See Zundel et al. 1982, p.231.

9 Goode 1972.

10 Rüschemeyer 1972.

11 Lau 1983.

12 See Christoph 1975.

medical profession. In each case of abortion, this normative conflict experiences an "exceptional intensification" which constitutes a particular challenge to the physician's conscience.¹³

Following Rahmsdorf (1980) and Drews (1982),¹⁴ the fundamental criterion for a physician's attitude to abortion is whether he/she is affiliated to the Catholic or Protestant Church. According to their findings, Protestant physicians were more frequently liberal in their attitude to abortion than Catholic physicians. Conversely, Catholic physicians were more apt to have a restrictive opinion in this respect than Protestant physicians. Although these findings are exclusively based on the statements of senior gynecological consultants, a survey conducted prior to the revision of § 218 et seq. of the German Penal Code covering all practicing physicians in the federal state of Schleswig-Holstein - whatever their individual specialty was - reported similar findings. According to Wille (1974),¹⁵ the most important factors influencing the physician's attitude to abortion are religious affiliation and age of the respondents.

Empirical surveys which do not deal specifically with the viewpoint of the members of the medical profession, but more generally with the attitude to abortion of the entire population, concur that the attitude to abortion is always marked by moral-religious value orientations and socio-demographic variables such as age, sex and socio-geographical origin (federal state and size of place of residence) as well.¹⁶

The following hypotheses can be formulated on the basis of these considerations:

- The attitude of physicians to abortion is predominantly marked by the **values and norms of the profession**.
- In the physician's professional self-perception, the task of protecting life has a special meaning. When confronted with the issue of abortion, this task is experienced by physicians as a **source of conflict**.
- **Moral-religious** value orientations and socio-demographic variables such as age, sex and socio-geographic origin (federal state and size of place of residence) exert an influence on attitudes to abortion.

¹³ Poettgen 1981, p. 227.

¹⁴ Rahmsdorf 1980; Drews 1982.

¹⁵ Wille 1974.

¹⁶ See the Bericht der Kommission zur Auswertung der Erfahrungen mit dem reformierten § 218 des Strafgesetzbuchs 1980 for a comprehensive presentation.

2. Sampling and methods of investigation

As part of an empirical survey conducted by the Max Planck Institute for Foreign and International Criminal Law in Freiburg, practicing gynecologists from Hessen and Baden-Württemberg were questioned about their attitude to abortion.¹⁷ The survey was conducted in 1986 and referred exclusively to **practicing gynecologists** in Hessen and Baden-Württemberg. Unlike earlier comparable surveys, this study was not limited to gynecologists working in clinics but was extended to include those in private practice.¹⁸ All in all, 406 gynecologists (both male and female) were surveyed by means of partially standardized interviews. This corresponds to a proportion of 20.5% of the population of all practicing gynecologists in Hessen and Baden-Württemberg.¹⁹

The interviews were conducted by specially trained male interviewers. The exclusive use of male interviewers seemed a logical step as it was intended that the interview situation should, if possible, not remind the gynecologists of the interaction between a pregnant woman and the physician responsible for ascertaining the grounds for an abortion or the physician responsible for performing the termination, in order not to distort the findings unnecessarily.²⁰

Statistical checks showed no significant differences between our sample and the population with respect to the socio-demographic features of age, sex and occupation (that is, clinicians/gynecologists in private practice). Similarly, comparisons with earlier surveys revealed that no extreme groups (with respect to the "attitude to abortion") had been included, with the result that our data can be considered representative.

¹⁷ The gynecologist survey is part of a comprehensive study on Law and Abortion Practice conducted by the Max Planck Institute for Foreign and International Criminal Law in Freiburg and was sponsored by the Deutsche Forschungsgemeinschaft.

¹⁸ Comparable earlier studies refer to the statements made by senior gynecological consultants, see Rahmsdorf 1980, Drews 1982.

¹⁹ According to statistics from the Bundesärztekammer (Federal Medical Society), 1,981 persons on 31.12.1986 (survey year).

²⁰ The secondary evaluation of two population surveys carried out in Vienna (survey years: 1971 and 1974) on the topic of "Law and Deviant Behavior", came to the conclusion that especially in connection with questions concerning the statutory regulation of abortion, a strong influence exerted by the interviewer with respect to the feature "sex" must be reckoned with. On this topic, see Steinert 1984, pp. 24-25.

3. Findings

3.1 Attitude to abortion

The attitude of physicians to abortion was established on the basis of a scale containing 10 statements on the topic of abortion; the scale in question had already been used in a survey of women affected²¹ to guarantee comparability of the data. The following table shows the agreement or the rejection of the individual items comprising this attitudinal scale:

Table 1: General attitude to abortion (in % / N = 406)

Item	agree	dis- agree	no com- ment
1. An abortion should be left to the woman's discretion in the first trimester.	40.9	58.6	0.5
2. Each woman should also be able to decide about the embryo growing in her womb, just as she is free to decide what she does with her own body. The Church and the State should not dictate to her.	31.8	66.8	1.5
3. An abortion should be permitted by the legislator only in specific cases since unborn life should, in principle, be protected.	68.2	29.9	2.0
4. In my opinion, an abortion is homicide and as such can be justified under no circumstances.	33.5	61.1	5.4
5. Objective arbitrators, such as physicians, should determine if and when an abortion is justified.	71.7	25.9	2.5
6. Human beings should not have the right to destroy life in the womb.	37.2	56.9	5.9
7. A woman's freedom to plan her life is of foremost importance. She alone should decide whether she would like to carry a pregnancy to term.	32.0	64.8	3.2
8. A woman should not terminate a pregnancy against the will of the male partner. In any case, he must have a say in the matter.	37.6	59.4	3.0
9. Abortion is homicide but it can be justified as an emergency solution.	82.5	14.8	2.7
10. Although abortion is homicide, if a woman is able to reconcile it with her conscience, I show understanding for it.	59.4	37.7	3.0

²¹ The survey of affected women is also part of the large-scale project on "abortion" conducted by the Max Planck Institute for Foreign and International Criminal Law in Freiburg. On this topic, see the report by Brigitte Holzhauser in this reader.

All in all, four statements were confirmed by over 50% of the respondents. The statement which met with the **greatest approval** was "abortion is homicide but it can be justified as an emergency solution". 82.5% of the respondents agreed with this interpretation of the problem. 71.7% were of the opinion that "objective arbitrators such as physicians" should ascertain "when and if an abortion is justified". Almost as many felt that "an abortion should be permitted by the legislator only in specific cases, since unborn life should, in principle, be protected". Finally, just under 60% expressed the view that "although abortion is homicide" they could show understanding for it if a woman is able to reconcile it with her conscience. These four statements which found the greatest approval among the gynecologists, essentially describe the existing statutory regulation of abortion: abortion on ethical, eugenic, medical or social grounds. The fourth statement which found significant agreement, goes more in the direction of "the woman's right to self-determination".

By contrast, all statements which clearly aim at the woman's right to self-determination and at **abortion on demand within the first trimester** were **forcefully rejected**: 66.8% rejected item 2: "Just as she is free to decide what she does with her own body, every woman should also be able to decide about the embryo growing in her womb. The Church and the State should not dictate to her." Almost just as many didn't accept the woman's right to take the decision on her own (item 7). Abortion on demand within the first trimester (item 1) was also rejected by almost 60% of the respondents. Although more than 50% did not agree with abortion on demand within the first trimester, nevertheless **a stricter condemnation of abortion was rejected** by more than half of the respondents. Thus the statement "in my opinion, an abortion is homicide and as such can be justified under no circumstances", was rejected by 61.1% of the respondents as was the sentence "human beings should not have the right to destroy life in the womb" (56.9%). Just as strongly rejected was the statement "a woman should not terminate a pregnancy against the will of the male partner. In any case, he must have a say in the matter." Almost 60% disagreed with this formulation.

To make the execution of further calculations somewhat easier, the attitude scale was converted into a sum score.²² The following opinion spectrum emerged:

²² Since better results could be obtained without items 9 and 10, these two variables do not enter into the construction of the sum score. The unweighted sum score can achieve a maximum value of 32 (8 items, statement 4: "I am very much against"); this constitutes a vote in favor of the "woman's right to self-determination". The minimum value is 8 (8 items, statement 1: "I am very much in favor"); it can be interpreted as "abortion is homicide". Values between 17 and 24 were interpreted as meaning "although abortion is homicide, it can be justified as an emergency solution".

- 42.1% of the gynecologists were of the opinion that **abortion is homicide and human beings should not have the right to take life**;
- 37.7% felt that **although abortion is homicide, it can be justified as an emergency solution**;
- for 20,2%, the **"woman's right to self-determination"** is in the foreground with respect to abortion; they believe that the woman should be the one to decide.

The largest group contains those gynecologists (42.1%) who reject abortion on principle as the taking of human life. Somewhat smaller (37.7%) is the group of gynecologists who condemn abortion as the taking of human life, but consider it justified as an emergency solution. This attitude corresponds best of all to the currently operative statutory regulation of abortion. The smallest group comprises those gynecologists who are of the opinion that the woman must be the one to take the decision whether to carry a pregnancy to term or not. If we were to combine those who are willing to accept abortion as an emergency solution and those who wish to leave the decision up to the woman, we have a bare majority (57.9%) of the respondents accepting abortion - at least as an emergency solution.

Attitudes to abortion are eminently connected with whether a physician sees **a fundamental conflict** between the performing of an abortion and the ethics of the medical profession ($\eta = .53$).²³ Physicians who perceive no conflict of this sort most often take a more liberal attitude to abortion whereas those who see a conflict in this regard, rather tend to take a negative attitude.

Table 2: Differences in attitude between gynecologists who see a conflict between professional ethics and the performing of an abortion and those who see no conflict in this respect (data in %)

	Conflict	
	Yes (n=241)	No (n=143)
1. Abortion is homicide, human beings should not have the right to take life.	60.1	12.6
2. Abortion is homicide but it can be justified as an emergency solution.	32.8	44.7
3. The woman has the right to self-determination, she should be the one to decide.	7.1	42.7
TOTAL	100%	100%

Significance: gynecologists with conflicts vs. gynecologists without conflicts $p < .001$

²³ 'Eta', also known as the 'correlation ratio', is a measure for a non-linear connection between two variables. The given value shows the strength of the connection with the 'attitude to abortion' as the dependent variable.

Just under 2/3 of those who see a conflict between the performing of an abortion and the ethics of the medical profession, reject abortion on principle as the taking of human life. By contrast, only 12.6% of those who perceive no such conflict reject abortion as the taking of human life. Conversely, 42.7% of the physicians without conflicts in this respect are in favor of the woman's right of self-determination in the context of abortion, in contrast to only 7.1% of the physicians with conflicts. The stance: "although abortion is homicide, it can be justified as an emergency solution", is taken by 32.8% of the physicians with conflicts and by 44.7% of those without conflicts in this respect. The differences in attitude between those physicians who see a conflict with their professional ethics and those who do not perceive such a conflict, are highly significant from a statistical viewpoint.

Additional influencing factors for the attitude of physicians to abortion are the variables: **religious affiliation** and **age**. The table below shows the findings of a multiple regression analysis²⁴ with the attitude to abortion as the dependent variable:

Table 3: Influences on physicians' attitudes to abortion

Feature	beta	Mult. R ²	Interpretation:
Attitude "more liberal" if:			
1. Conflict with professional ethics	-.46***	.28	• no conflict with professional ethics
2. Religious affiliation	.21***	.32	• no religious affiliation
3. Age	-.15**	.34	• under 44 years of age

Significance: p < .05*, p < .01**, p < .001***

According to these results, a more liberal attitude towards abortion is more likely to be held by young gynecologists without religious affiliation who see no fundamental conflict between the performing of an abortion and the ethics of the medical profession. By contrast, older, more religiously oriented gynecologists who perceive a fundamental conflict in this respect, tend to take a more disapproving attitude towards abortion. A sex-specific influence could not be found in this connection. In their attitude to abortion, female gynecologists did not differ from male gynecologists.

²⁴ Regression analysis charts a linear connection between features; the direction of the connection is pre-determined along the lines of a "the more..., the more relationship". See Backhaus et al. 1987, pp.1-2.

The **statutory threat of sanctions**, of which they were aware, had **no** influence on the physicians' attitude to abortion. Although almost all of the respondents (94%) knew that they could incur punishment by performing an abortion, they rated the probability of punishment as rather minor (89%).²⁵ Since almost all of the respondents were of this opinion, no discrepancies between the different attitudinal groups could be found.

3.2 Attitude to the law

As can be seen from the above, when asked about their **general attitude** to abortion, the gynecologists largely endorsed the currently valid statutory regulation. However, the picture changes when questions dealing more specifically with **attitude to the law** are posed. In response to the question: "Do you think it right that only the occupational group of the physicians is allowed to ascertain grounds for an abortion?", only 50.7% of the gynecologists answered "yes" although, on the scale for general attitude to the law, over 70% of the statements agreed that "objective arbitrators" such as physicians should determine if and when an abortion is justified". 47.5% of the gynecologists interviewed did **not** think it fitting that only members of the medical profession are allowed to ascertain the grounds for an abortion and 1.2% admitted that they were not quite sure. When subsequently asked which **occupational group** - other than physicians - could and should take over the ascertaining of grounds for an abortion, those gynecologists who had not ruled out the possibility that other occupational groups could also ascertain the grounds for an abortion mentioned teachers, social workers, social education workers, and psychologists as the most appropriate occupational groups.

Over 2/3 of the respondents were of the opinion that physicians needed **special qualifications** to enable them to ascertain the grounds for an abortion. In particular, specialized knowledge in the field of gynecology, special training with regard to the topic of abortion, and additional training in psychology were deemed useful.

Of all the respondents **only** 26.1% believed that the present statutory regulation does justice to the interests of the physicians. 67.7% of the gynecologists interviewed felt that the present statutory regulation of abortion did **not** do justice to the interests of physicians.

The **criticisms** most frequently levelled refer to the role of the physician within the statutory preliminary procedure to abortion, above all as abortion on social grounds is concerned. Approximately 1/3 of the statements are based on the fact

²⁵ The practice of criminal prosecution confirms this assessment. In the court statistics available to date (1977 - 1983) not a single case in this respect is in evidence. On this topic, see Koch 1988 with further references, p. 218.

that too much is expected of the **physician** or claim that he is the wrong person for the tasks entrusted to him by the law; in addition, 1/4 of the criticisms are directed at the field of **abortion on social grounds**: "the latter are too imprecisely defined" or are "dishonest". Other points of criticism include:

- "the law is too ambiguously formulated ("an elastic regulation") and can be administered in too many different ways";
- "the presently valid regulation of abortion is too rigid and the termination of pregnancy on demand within the first trimester would be more honest";
- "the law is administered in too lax a fashion and represents, in fact, a disguised form of abortion on demand within the first trimester";
- "the implementing provisions should be changed and the supporting measures should be improved";
- "the law discriminates against women and obliges them to 'run the gauntlet'";
- "abortion on social grounds should be revoked and a stricter regulation found";
- "the law is immoral".

A picture similar to that of the criticism of the law appeared with respect to the question about the **desired statutory regulation** of abortion: only 24.1% were in favor of maintaining the present law. The remainder of the respondents advocated revising the law.

About 1/3 made suggestions as to how the law could be changed on the basis of the currently valid statutory regulation. Half of the suggestions from this group refer to problems with abortion on social grounds or to suggestions as to how the latter could be improved. 30.1% of the gynecologists interviewed were inclined to advocate a more liberal solution: 27.6% were in favor of abortion on demand within the first trimester and 2.5% wished to see the lifting of all controls on abortion and the improvement of social assistance. Just under 9% were in favor of a more restrictive solution: in this group, 2.7% advocated a return to the former regulation which was based on expert opinions, 4.7% wished to have abortion on social grounds revoked and 1.5% wished to have only medical reasons admitted as grounds for an abortion.

Our respondents can thus be divided roughly into four groups according to their opinion on the statutory regulation:

- Those who desire **no** change in the statutory regulation (24.1%);
- Those who desire changes on the basis of the currently valid regulation (31.0%);
- Those who wish to see a **more liberal solution** (30.1%); and
- Those who advocate a **more restrictive solution** (8.9%).

The second group is the decisive factor in the general pattern of opinions. Although the gynecologists from this group are discontented with the present statutory regulation, they prefer not to depart from some sort of abortion on ethical, eugenic, medical or social grounds with the result that the **majority** of the gynecologists (55.1%) advocate the present regulation or one similar to it.

As expected, attitude to the law is influenced above all by the general attitude to abortion ($\eta = .59$). Gynecologists who reject abortion on principle are more apt to support a more stringent regulation whereas those with a more liberal attitude in this regard, are more likely to be in favor of a more liberal regulation.

4. Analysis

According to our findings, physicians' attitudes to abortion are influenced by the factors of age and religious affiliation, in addition to the orientation to professional values. In this connection, particular significance is attributed to the question of whether a gynecologist perceives fundamental conflicts between the performing of an abortion and medical professional ethics. On this basis, the hypothesis formulated above - "that the attitude of physicians to abortion is marked, above all, by the values and norms of the profession" - could be rendered more concrete by asserting that the physician's attitude to abortion depends principally on **whether he or she sees a conflict between the values and norms of the profession and the performing of an abortion.**

As a consequence, the second hypothesis formulated can also be confirmed, at least partially: "The task of the medical profession, that is, to protect life, is experienced by physicians as being in conflict with the performing of an abortion". Two-thirds of our respondents perceived this conflict. This assertion must, however, be qualified: the **majority of physicians** see a **conflict** between the physician's duty to protect life and the performing of an abortion.

Hypothetical assumptions about the influence of socio-demographic and socio-geographic variables could be confirmed for the factors: **age** ($\eta = .31$) and **religious affiliation** ($\eta = .31$). Older gynecologists affiliated with a specific religious denomination are more likely to disapprove of abortion than young gynecologists with no religious affiliation. Socio-geographic factors such as size of place of residence and region of origin were of no significance in this connection. Similarly, it should be pointed out that we were unable to observe any **sex-specific discrepancies** with regard to attitude to abortion. Moreover, **no** difference in attitude to abortion could be observed between **gynecologists in private practice and clinicians.**

With respect to the influencing factors - age and religious affiliation - our findings concur with those of the study conducted by Wille (1974)²⁶ before the revision of § 218 et seq. of the German Penal Code. However, our data go beyond the data collected at that time since, our study is the first to address the issue of the significance of the physician's professional self-perception in this particular context.

In contrast to surveys covering the entire population,²⁷ no sex-specific or socio-geographic influence on attitude to abortion could be detected in the sub-sample of "obstetrician/gynecologists". This corresponds to the findings of comparable surveys of physicians conducted before and after the revision of the law,²⁸ which also failed to observe connections in this regard. Accordingly, it would seem to be a feature peculiar to the "physicians" sub-sample that - in contrast to the total population - socio-geographic factors such as place of residence, state of origin and sex of the respondents do not affect attitude to abortion. Much more it must be assumed that especially in **the medical profession, profession-specific values and norms** play a fundamental role in this connection. Moreover, it should not be forgotten that "physicians" as a sub-sample, in contrast to the total population, dispose of an identical level of education and training so that even these influencing factors are of no significance.

5. Summary

General factors of influence for the attitude to abortion, both in the survey of the total population and in the physician survey, were: age of the respondents and their religious affiliation. It must be emphasized that, in the case of the academic profession of the physicians, the professional identification outweighs or eliminates the influence of sex-specific roles and attitudinal patterns. The physician's attitude to abortion depends above all on whether he or she sees a fundamental conflict between the ethics of the medical profession and the performing of an abortion. Two-thirds of the respondents experienced a conflict of norms in connection with abortion "since it is a question of taking human life". However, the conflict does not focus on the legal prohibition but on professional norms. The statutory threat of sanctions has no influence on the attitude to abortion. Although almost all of the

26 Wille 1974.

27 Zundel et al. 1982, as well as the Bericht der Kommission zur Auswertung der Erfahrungen mit dem reformierten § 218 des Strafgesetzbuches 1980 for a comprehensive presentation.

28 The study conducted by Wille 1974 took place before the reform of § 218 of the German Penal Code; Rahmsdorf 1980 and Drews 1982 collected their data after the reform of the Law.

respondents knew that they could commit an offence by performing an abortion, they concur in estimating that the risk of sanctions in this connection is minor.

Just under one-quarter of the gynecologists interviewed were satisfied with the existing statutory regulation of abortion. Over two-thirds of the respondents criticized the law. The main criticisms were directed at the role of the physician within the framework of the ascertaining of the grounds for an abortion as well as at the field of abortion on social grounds. In each case almost one-third of the respondents recommended a more liberal statutory regulation taking into account the woman's right to self-determination or another version of the currently valid statutory regulation; most often, those who were in favor of the latter wished to see a 'clearer definition' of what is to be considered "social grounds". Only 9% of the respondents expressly advocated a more restrictive solution such as that which existed prior to the revision of the law. On the basis of the foregoing, we could note that the majority of those physicians who are predominantly confronted with the problem of abortion in everyday practice, namely the practicing gynecologists, do not advocate a more restrictive legislation on abortion. Indeed, the suggestions for improvement go more in the direction of a 'clearer' formulation based on the currently operative statutory regulation (abortion on ethical, eugenic, medical or social grounds) which is easier to put into practice or a further liberalization of the law.

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Abortion: Attitudes and Decision-Making

Brigitte Holzauer

1. The problem complex: legislation - attitude - behavior

Attitudes towards abortion can be viewed as a link between social norms, as expressed in the revised regulation on abortion (§ 218 et seq. of the German Penal Code), and the concrete behavior exhibited when a pregnancy arouses feelings of conflict. The considerations of general prevention underlying the norms of criminal law - as also formulated by the 'Bundesverfassungsgericht' (German Federal Constitutional Court) in rejecting abortion on demand within the first trimester¹ - not only aim at deterring potential offenders but also attempt to influence the population's value-orientation (the integrative aspect of general prevention). The internalising of norms is meant to create inner behavioral controls which, in turn, should discourage non-conformist behavior.²

The situation of women experiencing conflictful pregnancies inspires the investigation of a number of issues generated by the area of conflict where legislation, attitude, and behavior become enmeshed, namely:

- To what extent is the legal regulation of the issue accepted in the specific conflict situation, by those who are affected (**acceptance of the norm**)?
- To what extent do attitudes, as norm-orientations, govern a woman's actions when she is making a decision in favor of or against having an abortion (**relevance to action**)?

On examining the possibilities of intervention provided for in the revised ver-

¹ Judgement by the Bundesverfassungsgericht (Federal Constitutional Court) dated 25.2.1975, BVerfGE 39,1, (55 et seq.).

² See, e.g. Albrecht 1985 as well as Giering 1987.

sion of § 218 of the German Penal Code, it becomes evident that they constitute a specific mixture of different instruments. For instance, the idea of prevention is at the fore ("primacy of prevention over repression"³): in the preliminary stages endeavors must be made to encourage a responsible decision including elements of persuasion ("arousing the mother's protective instinct"⁴). Procedural obligations, such as having to be referred by a physician,⁵ and social counseling⁶ are intended, in conjunction with accompanying financial assistance, to prevent "unwarranted" abortions and find alternative solutions. Once the prerequisites of the preliminary procedure have been fulfilled, a legal abortion may be performed.⁷ Criminal sanctions are at the disposal of the authorities should violations occur.

Since the intention of the legislator might be restructured in the process of implementation,⁸ the modes of implementation may also exert an influence on the woman's attitude, her decision, and the act of abortion itself. For instance, there are frequent complaints that access to an abortion and the availability of a legal solution are not the same everywhere and that women are at the mercy primarily of physicians.⁹ However, there are others who believe that those whose job it is to implement the law misinterpret the task imposed on them by the legislator with the result that a 'disguised' form of permitting the termination of pregnancy within the first trimester has become general practice, with **de facto** abortion on demand taking place.¹⁰

3 See BVerfGE 39,1, (44).

4 See BVerfGE 39,1, (45).

5 "In order to avert any danger of serious damage to the pregnant woman's physical or mental state of health" which cannot be averted by other reasonable means (§ 218a I 2 StGB) an abortion must be indicated on the basis of a **physician's judgement**. A legal abortion may be performed on medical, eugenic, criminological or social grounds.

6 The woman must consult an authorized counseling institution or physician to receive advice on social public assistance, especially such assistance as will make it easier for her to carry the pregnancy to term (§ 218b I 1 StGB). The aim of this counseling is to protect unborn life and/or to aid the pregnant woman in coming to a responsible decision. However, the aforementioned objectives are nuanced differently according to the **Implementation provisions** applied in the different federal states.

7 The abortion must be performed by a **physician** and, according to the specific indication, different time limits must be observed (§ 218a III StGB). The necessary medical care of those women who meet the requirements for an abortion must be guaranteed and this also implies having the costs for legal abortions paid by health insurance services (§ 200 et seq. RVO). Guidelines on the performance of abortions, regulating the procedures (admission, day care abortions, etc.), have also been issued by the states.

8 See Jann 1983 on implementation-related research; see also the collection by Mayntz 1980, 1983; Blankenburg and Voigt 1987.

9 See, e.g., Grünwald 1979; v. Troschke et al. 1982, p.97 et seq.; Ketting and v. Praag 1985, p.70 et seq.

10 See, e.g., Wille 1986; Tröndle 1987.

Representative opinion polls revealed that the present West German regulation (abortion on ethical, eugenic, medical or social grounds) is viewed with skepticism by the greater part of the population.¹¹ Although these investigations are not comparable directly with each other, since different questions were asked, approximately one-third of those questioned appears to be in favor of liberalizing the present statutory regulation, while approximately another third advocates tightening the law. An attempt to establish connections between attitudes towards abortion and characteristics of the respondents¹² revealed that above all religious denomination, social status, party preference, and personal proximity to the problem were influencing factors. Women of child-bearing age had a comparatively "more liberal" attitude towards abortion. However, in comparing aggregate data on the age-specific abortion rate and the attitude of the individuals in these age groups, Bora and Liebl¹³ were unable to establish a linear correlation between attitude and behavior.

To date, no comparative study of the attitudes of women who terminated a pregnancy and women who carried their pregnancy to term has been conducted in the Federal Republic of Germany. However, investigations carried out in Austria¹⁴ and the United States¹⁵ showed that the majority of those women who had had an abortion were "more liberal" in their attitude towards abortion, more apt to reject the traditional female role, and less religious than comparative groups of pregnant women. A German study¹⁶ conducted among women who were not pregnant also revealed a greater proclivity to decide in favor of abortion among women who were less religious and less oriented to the traditional role of the mother.

Nevertheless, these studies have not determined whether or to what extent prior knowledge of certain attitudes can serve as a basis for predicting the emergence of behavioral patterns connected with these attitudes. In recent years, the "attitude concept", which has found wide usage in the field of social research, has been the target of hefty criticism since, frequently, only a tenuous connection, if any, could be established between attitudes and behavior and since attitude could, moreover, be considered a consequence of behavior. In accordance with the theo-

11 See Zundel et al. 1982; Legge 1983; Noelle-Neumann and Piel 1983; Institut für kirchliche Sozialforschung des Bistums Essen 1984; Bora and Liebl 1986.

12 See Zundel et al. 1982, p.208 et seq.; Bora and Liebl 1986, p.26 et seq.

13 Bora and Liebl 1986, p.19 et seq.

14 Wimmer-Puchinger 1983, p.36 et seq.

15 The influence of attitude has been studied, inter alia, by Bracken, Klerman and Bracken 1978; Rosen and Martindale 1978; Smetana 1979 and Williams 1983.

16 Neubauer 1982.

ries of cognitive dissonance, attitudes were seen as accommodating themselves to exhibited behavior.¹⁷

Generally, the decision to terminate an unwanted pregnancy - or to carry it to term - goes hand in hand with a number of psychological and social conflicts. If we were to take a look at the areas of conflict, Federal statistical data already indicate that social grounds are the reasons quoted most often for indicating an abortion.¹⁸ In the fore are usually financial considerations, job-related problems, the pursuance of an education, as well as a precarious partnership. Most frequently, a combination of several negative factors occurs all at once; fear of being over-burdened and of the future with the child are frequently corresponding psychological motivations.¹⁹ Since the mere occurrence of an unwanted pregnancy can exercise a "function", e.g., in the relationship with the partner,²⁰ the decision for or against an abortion often appears as an intricate interlocking of various points of view. Social attitudes certainly represent a subset of the factors to be taken into consideration, but their status is questionable.

2. Project design

Questions concerning the implementation of § 218 of the German Penal Code were to be clarified, *inter alia*, by interviewing a group of women affected. A control group design was used to survey **women who had had an abortion** along with **women who had carried their pregnancies to term** with or without experiencing some sort of conflict about their decision to do so.²¹ The investigation produced 400 interviews which were grouped as follows:

- 166 (41.5%) women who had had an abortion ("the abortion group"). As a rule, the abortion had been performed less than six months previously;
- 51 (12.8%) women who had decided to carry their pregnancy to term although they had considered having an abortion ("conflictful pregnancies");
- 183 (45.7%) women who had experienced no conflicts of this sort in making their decision to deliver ("pregnant women without decisional conflict"). Among those women who carried the pregnancy to term, 6.0% were interviewed subsequent to the birth of their child; the remaining 94.0% were still pregnant at the time of the interview.

¹⁷ See Meinefeld 1977; Rosch and Frey 1987.

¹⁸ Statistisches Bundesamt 1977 et seq., e.g. 1986, p.384.

¹⁹ See, e.g., Oeter and Nohke 1982; v. Troschke et al. 1982; p.47; Wimmer-Puchinger 1983, p.59.

²⁰ Goebel 1984, p.14 et seq.; Jürgensen 1983.

²¹ See Eser and Kaiser 1984 for details on the study design.

In collaboration with the **§ 218 counseling centres** and **gynecologists** it was possible to contact these women. When contact was established through counseling centres, all responsible institutions (e.g., PRO FAMILIA, Caritas) were taken into equal consideration using a quota method; gynecologists were randomly selected. The investigation covered two states, **Hessen** and **Baden-Württemberg**, which enforce different guidelines and modes of implementation with respect to abortion.²²

Since the women were interviewed on a strictly voluntary basis, biases in the findings could not be excluded. A comparison of the findings from the "women's study" with the data from the 'Statistisches Bundesamt' (German Federal Office for Statistics),²³ to which all abortions are supposed to be reported, as well as with other available data on the population, revealed significant discrepancies in age, marital status, number of children and schooling.

The interviews were **partially standardized** and covered the following topics:

- Socio-demographic features
- Emotional acceptance of the pregnancy
- Changes in personal circumstances anticipated as a result of pregnancy
- Attitude towards abortion, towards the role of mother, as well as aspirations for the future
- Considerations leading up to the decision
- Experiences with counseling centres, physicians, and institutions performing the abortion
- Opinion of § 218 of the German Penal Code
- Degree of satisfaction with their decision

Since the decision whether to abort or to carry the pregnancy to term had already taken place, the investigation is retrospective. The following intends to illustrate those aspects of the investigation which acquire relevance in view of the attitude towards abortion (and its connection with the decision to abort). An analysis of findings concerning experiences with the institutions provided for in the preliminary procedure laid down by § 218 of the German Penal Code are beyond the scope of this monograph.

²² See Ketting and v. Praag 1985, p.70 et seq.

²³ See Statistisches Bundesamt 1986, p.384. However, since **not all cases are reported**, the data do not correspond to the total number of abortions performed in the Federal Republic of Germany; abortions performed on German women abroad also have to be taken into account (see, e.g., v. Baross 1986).

3. Findings

3.1 Attitude towards abortion

Respondents were provided with a scale for the purpose of measuring their attitude towards abortion. The items were formulated after viewing the relevant literature²⁴ and predetermined response categories which described the degree of acceptance were given. After analyzing the scale (factor analysis and reliability analysis), eight of the items were left on it.

Table 1: Items on the Abortion Attitude Scale

Item	\bar{x}	s
1. An abortion should be left to the woman's discretion in the first trimester.	3.26	0.99
2. The embryo is part of a woman's body, and as such every woman should be able to decide what she does with her body. Church and State should not dictate to her.	3.27	0.98
3. An abortion should be permitted by the legislator only in specific cases, for unborn life should basically be protected.	2.18	1.10
4. In my opinion, an abortion is homicide, which cannot be justified under any circumstances.	1.84	1.03
5. Objective observers, such as physicians, should determine if and when an abortion is justified.	2.26	1.13
6. Human beings should not have the right to destroy life in the womb.	1.98	1.03
7. A woman's freedom to plan her life is of foremost importance. She alone should decide whether she would like to carry a pregnancy to term.	3.14	0.97
8. A woman should not terminate a pregnancy against the will of the male partner. In any case, he must have a say in the matter.	2.33	1.07

In the entire sample of respondents, the items which emphasized the woman's right of self-determination (items 1, 2, and 7, high mean) met with the greatest acceptance. Items which put abortion on a par with homicide (items 4, 6, low mean) were refuted more frequently than others.

The scale formed with an unweighted sum score of these eight items exhibits a high (Cronbach alpha value = .90) internal consistency. A high value on the scale signifies emphasis on "the woman's right to self-determination"; a low value, em-

²⁴ Essential ideas were taken from the scales devised by Zundel et al. 1982, p.300 et seq. and Bönitz 1979, p.179 et seq.

phasis on the "protection of unborn life".²⁵ The three groups under study, the "abortion group", "conflictful pregnancies", and "pregnant women without decisional conflicts", differed in each case significantly from each other with regard to their attitude towards abortion. If the scale is dichotomized at the mean, a total of 82.5% of the women who had opted for abortion, 60.8% of those with conflictful pregnancies, and 34.4% of those without decisional conflicts tended to have a "liberal" attitude towards the woman's right to self-determination.

The attitude towards abortion correlates to a large extent with the **attitude towards the role of mother** ($r = .63$). Women with a more career-oriented attitude and reservations about the traditional role of mother were thus more prone to show a "more liberal" attitude towards abortion. However, socio-demographic features also influenced the attitude towards abortion. Table 2 shows the results of a multiple regression analysis where the attitude towards abortion is the dependent variable and the attitude towards the role of mother as well as socio-demographic factors²⁶ are the predictors. The results obtained with the progressive inclusion of the predictors show that as few as four variables are able to account for 49% of the variance in the attitude towards abortion.²⁷

Table 2: Variables influencing attitude towards abortion

Variable	beta	Mult.R ²	Interpretation
Attitude "more liberal" if:			
1. Attitude towards role	.44 ***	.40	• traditional role of mother is rejected
2. Marital status	.25 ***	.46	• not married
3. Previous abortions	.15 ***	.48	• previous experience exists
4. School education	.14 **	.49	• higher level of education

Standardized regression coefficients and multiple R² with stepwise inclusion of predictors.
Significance: * = $p < .05$; ** = $p < .01$; *** = $p < .001$

²⁵ In the following, women with a high value on the scale are to be termed "liberal" and those with a low value, "conservative".

²⁶ The following variables were included in the analysis as socio-demographic features: age, number of children, income-bracket, size of place of residence, education, as well as nominal features reduced to dummy variables such as: marital and occupational status, religious affiliation, federal state, previous experience of abortion and illnesses.

²⁷ In the multiple regression analysis, the connection between one criterion and a set of predictors is determined and the value of the dependent variables is prognosticated on the basis of the computed regressive function. With the progressive procedures used here, the predictors are introduced one after the other into the calculation. In this process, only the information which had not been covered by previously included features was taken into consideration. In view of slight infringements of the prerequisites, this procedure is considered a relatively robust one (see Backhaus et al. 1987, p.1 et seq.).

Along with the previously mentioned attitude towards the role of mother, the **marital status** of the respondents also proved to be a major predictor. Married women exhibited a "more conservative" attitude towards abortion. This corresponded to the observation made, using bivariate correlations, that in particular housewives, women who lived with their partner (and perhaps children) and/or were financially dependent upon him were more prone to show a "conservative" attitude towards abortion. Similarly, **previous abortions** and **education** influenced attitudes to abortion. "Conservative" women had not (as yet?) experienced an abortion and had received a lower level of education than "liberal" women.

On the whole, with respect to abortion attitudes, there are signs of a polarization between women who have a traditional attitude towards the role of mother, live within a family context and have a more modest level of education, on the one hand, and women with a higher level of education, who are more frequently career-oriented and unmarried, on the other.

In view of these facts, attitudes towards abortion seem to be a focal point of differing value-orientations and differing life styles. Zundel et al. speak of "conservative" versus "emancipation-oriented" systems of fundamental philosophy which oppose each other with regard to abortion attitudes, the role of mothers, and the effect of abortion on society.²⁸ Luker equally, emphasizes that the abortion controversy is at the root of a confrontation between those women who still set store by the traditional role models and those women for whom these role models are no longer effective.²⁹

Since career and motherhood continue to constitute partially incompatible role models, the woman has to decide which of the two directions will take priority. The justification of the path a woman has chosen to pursue in life can also become manifest in her attitude towards abortion. A "liberal" attitude towards abortion would seem to be the logical consequence of "investing" heavily in one's career (e.g., by investing in higher education) since it is imperative to have the right to take decisions regarding the reproductive process if this path is to be pursued further. Although neither the age of the woman ($r = -.04$) nor the number of children ($r = -.25$) correlated appreciably with attitude towards abortion, it could be observed that, as a result of the high significance attributed to marital status, certain phases in the person's life might influence her attitude towards abortion.

28 Zundel et al. 1982, p.204 et seq.

29 Luker 1984.

3.2 Attitude towards § 218 of the German Penal Code

The outline of the scale of attitudes towards abortion already anticipated a number of opinions with respect to a statutory regulation of abortion. When respondents were explicitly asked which regulatory model they would select for abortion, a strong correlation was found, as expected, between abortion attitude and the "**preferred statutory regulation**" and thus acceptance of the current legal regulation (abortion on ethical, eugenic, medical, or social grounds). Women with a "liberal" attitude towards abortion more frequently favored either the abolition of § 218 of the German Penal Code or abortion on demand within the first trimester. On the other hand, "conservative" women usually did not call for a tightening of § 218 but, instead, supported the present regulation (abortion on ethical, eugenic, medical, or social grounds).

A comparison of the three groups under study: "women who have had an abortion", "women with conflictful pregnancies", and "women whose pregnancies caused no decisional conflicts", according to the preferred regulatory model for abortion, reveals that the majority of the women who had had an abortion (86.2%) and the majority of women with conflictful pregnancies (60.7%) advocated impunity in the event of abortion or a solution permitting abortion on demand within the first trimester. Abortion only on ethical, eugenic, medical, or social grounds was most clearly preferred by those pregnant women who had no decisional conflicts (45.8%; see Table 3).

Although it cannot be claimed that the samples are representative, the data do suggest that the present regulation has not quite succeeded in becoming a generally accepted standard for those women affected. When comparing these data with the opinion polls conducted by various institutes,³⁰ it becomes evident that women who have had an abortion and women with conflictful pregnancies more frequently support liberalization of § 218, than do representative samples of the population. The trends which emerged from the opinions expressed by women who carried their pregnancies to term without decisional conflicts showed a greater similarity to those apparent from the distribution of these representative samples.

Most of the criticism voiced against § 218 of the German Penal Code referred to having regard for the needs and interests of women. In the eyes of the critics, the most important aspect was the woman's dependency upon institutions: the fact that she is at the mercy of the judgement and discretion of others, is patronized, humiliated and meets with a lack of understanding, all of which places a psychological strain on her.

30 For literature, see note 11.

Table 3: Preferred statutory regulation (figures in percent)

	Group 1	Group 2	Group 3
1. Total impunity	15.7	17.6	6.6
2. Abortion on demand within the first trimester	50.0	33.3	25.7
Both (1 and 2)	20.5	9.8	4.9
3. Unconditional prohibition	-	-	1.6
4. Vital/medical grounds	-	-	12.0
5. Ethical, medical, eugenic and social grounds	8.4	29.4	25.1
Both 5 and 2	2.4	2.0	3.8
Both 5 and 4	0.6	5.9	16.9
Other/no response	2.4	2.0	3.4
TOTAL	100.0%	100.0%	100.0%

Group 1: Abortion (n=166); **Group 2:** Conflictful pregnancy (n=51); **Group 3:** Pregnant women without decisional conflict (n=183).

Significance: Group 1 vs. Group 2: $p < .01$; Group 1 vs. Group 3: $p < .001$; Group 2 vs. Group 3: $p < .001$.

On the whole, in the detailed evaluation of § 218 of the German Penal Code, women who had had an abortion and those experiencing conflictful pregnancies showed greater similarity to each other, whereas pregnant women without decisional conflicts differed significantly from the comparison groups on most items.³¹ However, no significant differences were found among the groups under study with regard to their familiarity with § 218 of the German Penal Code - over 90% of the respondents had some knowledge of the current regulation - nor was there any significant difference with regard to the expectation of criminal and social sanctions as a result of abortion. These characteristics were shown to be independent of attitudes towards abortion.

When asked if they thought that a woman could commit an offence by having an abortion, 36.1% of those who had had an abortion, 43.1% with conflictful pregnancies, and 40.4% of the women who were pregnant without decisional conflicts responded in the negative. Those who expected criminal sanctions did so primarily when an abortion had been performed outside the stipulated period and without a physician's referral.

³¹ This detailed evaluation was based on criticisms of § 218 of the German Penal Code, attitudes to social counseling, to the need for referral by a physician and payment of the costs incurred by an abortion by health insurance services.

On the subject of presumed social disapproval, 47.6% of those who had had an abortion, 33.4% of those with conflictful pregnancies, and 41.5% of those who were pregnant without decisional conflicts believed that society takes a negative view of women who have had an abortion.

If we consider the factors "norm-orientation" (in terms of attitude towards abortion and towards § 218 of the German Penal Code) and the expectation of criminal and social sanctions as signs of a general prevention influence of the law,³² it is apparent that those women who had had an abortion had a more liberal attitude towards abortion and its statutory regulation than those with conflictful pregnancies. However, women who had had an abortion also expected social disapproval slightly more frequently and were more prone to anticipate criminal sanctions as a result of abortion.

The assumption that the knowledge and/or expectation of sanctions could deter women from having an abortion has not been confirmed by these findings. However, it must be noted that the findings could have been influenced by the retrospective nature of the investigation. Women who had had an abortion had more frequent contact with abortion-related institutions and consequently were more frequently informed about the possible consequences. It is also possible that they had already been confronted with disapproval in their social circles.

As a means of verification, the "intentions" of the respondents - rather than their decision per se - were included as independent variables and investigated with a view to ascertaining differences about abortion attitudes and sanction expectations.

The "intentions" were formulated on the basis of statements made by the women who had had an abortion, about what they would have done had they obtained no assistance from the relevant institutions. 5.4% stated that they would have then carried the pregnancy to term; 48.8% would have consulted other institutions and 42.2% would have gone abroad to abort or would have sought some other form of assistance (3.6% of the women gave other responses or made no comment).

Both groups of pregnant women were asked if they could imagine a situation in which an abortion would be a possible solution for them. 82.4% of the women

³² As a rule, in studies on general preventions, the willingness to commit an offence or the actual commission of an offence, is correlated with variables which indicate the general prevention effects, such as norm-orientation and the expectation and severity of sanctions (see Albrecht 1980; Berlitz et al. 1987). However, in the present case, it is difficult for a number of reasons to ascertain the general prevention effects. Apart from the fact that no "offender" had been included in the survey, it is also relevant that, although abortion is, in principle, punishable, the precise provisions are complicated and hardly ever applied in practice (see Augstein and Koch 1985, p.202 et seq.). Since for pregnant women without decisional conflicts pregnancy did not provoke any comparable decisional situation, they were not included in the following analyses.

with conflictful pregnancies and 56.6% of those without decisional conflicts answered in the affirmative.

All in all, a corresponding outcome confirming the above analyses was obtained. Women who were prepared to take illicit steps and those who could imagine an abortion as being a possible solution, exhibited a "more liberal" attitude towards abortion and concomitantly were more frequently aware that it might be punishable and that they would incur increased social disapproval.

Since the investigation was a comparative study of two federal states, Hessen and Baden-Württemberg, there is reason to question whether the specific political "climate" obtaining in each state³³ influences the attitudes of the respondents. In comparing the entire sample, however, no significant differences were found between the opinions of the respondents from Hessen and those from Baden-Württemberg with respect to the various facets of § 218 of the German Penal Code. If we take into consideration only those women who had had an abortion, then it were those from Baden-Württemberg who voiced their criticism about § 218 of the German Penal Code more frequently ($p < .05$) focussing on the fact that the interests and needs of women are not sufficiently taken into account. Conversely, of those who were pregnant without having decisional conflicts, the women from Baden-Württemberg were more apt, than those from Hessen, to advocate a tightening of § 218 of the German Penal Code or to favor the present regulation ($p < .05$).

With reference to the views expressed on § 218 of the German Penal Code, it could be asserted, in short, that the more direct the woman's confrontation with abortion, the more likely she was to reject the present regulation of abortion. However, in this respect, the differences perceived between the respondents from Hessen and those from Baden-Württemberg were so slight, that there is reason to assume that personal attitudes are not influenced to any great extent by the statutory regulation of abortion and the various conditions associated with its implementation. Furthermore, although women who had had an abortion, those who were prepared to take illicit steps if necessary, and women for whom an abortion was conceivable were "more liberal" towards abortion, at the same time, they were still more aware of the possibility of sanctions. In this respect, a possible deterrent effect was not evident in the investigation sample.

³³ Whereas Baden-Württemberg is governed by the Christian Democrats, at the time when the data were collected, a Social Democrat/Ecologist coalition was in power in Hessen. Differences with respect to the administration of § 218 of the German Penal Code could be discerned especially with regard to the way in which abortion was performed. E.g., women having abortions were treated as out-patients and the abortions were performed by the vacuum method more frequently in Hessen than in Baden-Württemberg. 59.6% of the respondents from Baden-Württemberg had the abortion performed in another Bundesland (state); the majority of them went to clinics in Hessen. This revelation is evidence of a high rate of "abortion tourism" in parts of the Federal Republic.

3.3 Influence of attitude towards abortion in conjunction with other psychosocial factors

The decision to have an abortion is usually influenced by myriad motives. In the decision-making process, circumstances obtaining at that time of a woman's life can play just as decisive a role as her assessment of the situation arising out of her confrontation with the unwanted pregnancy.

Discriminant analysis is a multivariate method of analyzing group differences.³⁴ Including attitudes towards abortion in a discriminant analysis serves to establish to what extent this element contributes to the differences between the groups under study. This makes it possible, when comparing the groups "abortion" and "conflictful pregnancies", to compute the importance of attitude in conflictful pregnancies and in the decision whether to abort. The following factors were included in the analysis:

- Sociodemographic factors
- Emotional acceptance of the pregnancy by the woman and her partner
- Anticipated deterioration by the arrival of a child or an additional child
- Attitude towards abortion

Table 4 shows that 32.3% of the variance could be accounted for by these factors.³⁵ In this case, the factor which best separated the groups was the degree to which the arrival of a child or another child was expected to cause a deterioration in various aspects of life such as occupation, finances, partnership and family. The fact that the partners of those women who chose to abort had reacted more negatively to the pregnancy was also a major discriminator. The remaining variables which emerged as major discriminators derive from sociodemographic features.³⁶ Women who had had an abortion were more likely than those with conflictful pregnancies to have not yet completed their education, to be childless, to have less binding relationships with their partners and lower incomes; they were less likely to have had previous abortions and more often either had no religious affiliation or were Protestant.

³⁴ In conducting discriminant analysis, a linear combination of features designed to separate the groups as efficiently as possible is computed. With the computed discriminant function, it is also possible to estimate to what group certain elements belong (classification). On this topic, see Backhaus et al. 1987, p.161 et seq.

³⁵ At the same time, 73.0% of the variance which arose when comparing women who had had an abortion with pregnant women without decisional conflicts, could be accounted for. Major discriminators in this instance were, in the main, the emotional reaction of the woman and her partner to the pregnancy, the extent of anticipated deterioration in circumstances and the degree to which their partnership was binding. Attitude to abortion ranked fifth and accounted for 8.2% of the variance.

³⁶ Only 13.1% of the variance between women who had had an abortion and those with conflictful pregnancies could be accounted for when only the socio-demographic features were used; however, the same features were able to account for 42.0% of the variance between women who had had an abortion and pregnant women without decisional conflict.

Table 4: Differences between the "abortion" group and the "conflictful pregnancy" group (discriminant analysis)

Variable	SDC	Interpretation
		Abortion more likely if :
1. Extent of anticipated deterioration	.75	• increased anticipation of deterioration through a (an additional) child
2. Occupational status	.38	• still in training
3. Number of children	.35	• less children or childless
4. Reaction of partner	.34	• negative reaction from partner
5. Partnership	.33	• less-binding relationship
6. Income bracket	.24	• less income
7. Previous abortions	.18	• no experience with previous abortions
8. Attitude towards abortion	.18	• more liberal attitude towards abortion
9. Religious affiliation	.16	• not Catholic

SDC: Standardized discriminant coefficient; **Canonical correlation coefficient:** .57; **Proportion of variance accounted for:** .32; **Significance of discr. function:** $p < .001$; **Correct classifications:** Abortion: 91.0% Conflictful Pregnancies: 60.8%.

On the whole, it is evident that the **circumstances** of those women who opted for an abortion were clearly **less stable** than of those with conflictful pregnancies (whereas both of these groups differed from the group of women whose pregnancies were without decisional conflicts, in that the latter group was living in comparatively comfortable circumstances). In the case of the abortion group, it frequently occurred that neither partnership, occupational status nor income was stable. This insecurity was also reflected in the subjective reasons adduced by women for having the abortion. The primary misgiving was that they lacked the security necessary for a future with a child.

The partnership, in particular, was a major influential factor. Women who had had an abortion differed from those who delivered, both in the degree to which their partnerships were binding and in the partner's reaction to the pregnancy. A frequent concern expressed by the first group of women was that the partnership was not stable enough and that insufficient emotional support could be expected from the partner. On the other hand, it was rarely reported (in 5.4% of the cases) that the partner had directly influenced the decision to abort by forcing the woman to do so.

However, it was the woman's **subjective evaluation** of her living conditions which determined the outcome of a conflictful pregnancy, rather than the living conditions per se. Women who had opted for an abortion expected far more serious changes in their living conditions as a result of delivery than women who went to

term. Of these variables, **attitude towards abortion** was the penultimate and is thus of only minor significance in comparison with the other variables.

It has hitherto been assumed in these analyses that attitudes towards abortion would have a causal effect on the decision to abort. As the investigation of women who chose to abort was retrospective, the objection could be raised that, since the measurement of attitudes was **subsequent to** the decision, the latter had, in fact, influenced the women's attitudes. On the basis of post-decision processes, as posited above all in theories of cognitive dissonance,³⁷ it could be expected that measures would be taken in the wake of the decision to render it "consistent". In other words, according to this theory, there is a greater likelihood that a possibly "conservative" attitude would become more "liberal" once an abortion has been performed. This would mean that, after the decision has been taken, the attitudes of women who had had an abortion and those who chose to deliver would diverge further than they had before the act.

As the foregoing clearly indicates, previous abortions proved to be a significant predictor of attitudes towards abortion. This can be understood as an indicator that the recent act of abortion had also led to a change of attitude among the women affected and that, accordingly, the role attributed to attitude in the decision for or against abortion might be over-estimated and might therefore represent a maximum value.

However, the influence which **previous abortions** can have on the decision to abort is definitely ambivalent. Whereas previous abortions do influence attitudes towards abortion, thus leading to greater "liberalism" and although this "liberalism" is credited with playing a certain role in pro-abortion decisions, it was generally observed (Table 4) that women who, in this instance, chose to abort were less likely to have had similar previous experiences than women with conflictful pregnancies.

Consequently, the experience of a previous abortion seems on the whole to exert more of a restrictive influence when deciding whether to have another abortion - probably as a result of the earlier painful experience or because of the stigma attached to multiple abortions.

4. Summary

Turning to the attitude of women who had had an abortion and that of pregnant women towards abortion and towards § 218 of the German Penal Code, it becomes apparent that the more women are affected by the possibility of having an

³⁷ Festinger 1957.

abortion, the greater their criticism of the present legal regulation. This would indicate that the latter (allowing termination of pregnancy only on ethical, eugenic, medical, or social grounds) seems not to have been able to develop into a generally accepted standard for women in a conflictful pregnancy situation. The solution providing for abortion on demand within the first trimester was clearly preferred both by women who had had an abortion and by those who, despite having contemplated abortion, had carried their pregnancy to term.

Attitude was closely associated with the rejection of traditional sex-role stereotypes as far as the role of the mother was concerned. This was all the more so if the woman did not assume the status of the married woman in her actual situation and had received higher education. Since previous abortions also had a marked influence on attitudes, it can generally more readily be assumed that attitude towards abortion constitutes a reaction to previous abortion-related behavior and does not, as might be presumed, have any appreciable influence on the decision to abort.

Nevertheless, attempts to establish the importance of attitude in the decision-making process showed that it was relatively minor compared with the current situation of the woman and, above all, her interpretation of her situation. Although the group which opted for delivery included a higher proportion of women with a "conservative" attitude towards abortion, it is still not possible to maintain that the reason for going to term in the case of a conflictful pregnancy lies in the rejection of abortion on principle. By comparison, women who had had an abortion lived in clearly more precarious circumstances with respect to financial situation, occupational status and partnerships than those who carried their pregnancy to term.

In the light of these results, a skeptical view must be taken of the aim to influence the value-orientation of those affected and ensure a degree of deterrence by the threat of punishment. In the actual moment of decision, psychosocial conflicts seem to eclipse the influence of normative considerations. Doubts about the effectiveness of criminal provisions in the event of abortion were already at the heart of the discussion occasioned by the reform of § 218 of the German Penal Code in 1976. These doubts are as justified now as they were then, but it must be taken into consideration that further aspects of § 218 of the German Penal Code, such as pre-abortion counseling and the availability of financial assistance where it is needed, could gain influence. In fact, the investigation of the women concerned did show that empathic counseling and discussion with the woman, as well as accompanying social assistance are to be attributed significance, if the woman is still relatively open about making her own decision and expects that this assistance will help her find a solution and/or mitigate her conflict.

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Environmental Crime - Economic and "Everyone's" Delinquency

Empirical Studies of the Implementation of Environmental Criminal Law in the Federal Republic of Germany

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1. Starting-point: the Environmental Criminal Law

In the light of the great ecological disasters of our days, considerable world-wide efforts to render the environmental laws more effective have emerged. Repeatedly, Administrative Law, in this context of paramount importance, has proven to be deficient when put into practice. It is hence understandable that preventive expectations focus increasingly on Criminal Law.

On the whole, however, individual national concepts of environmental protection are very differential - even with regard to their functional aims. Roughly, internationally existing concepts can be attributed to two basic patterns:¹

- On the one hand, there are those models based on criminal standards functioning as "flank protection" for administrative regulations. Disregard of these regulations constitutes the main cause of punishment here. Hence, only the addressees of such regulations, namely, the commercial and industrial sector, can be considered potential offenders. Environmental crime, therefore, is a special type of white collar crime.
- On the other hand, there are concepts based on an originary penological typification of tort. Here, the sanctioning regulations themselves define the degree of culpability, oriented on criteria of the degree of ecological and individual hazard.

¹ Heine and Meinberg 1988.

Regulations provided by laws other than Criminal Law are only applied to cases of collision. One particular advantage of these models is that they clearly state their objective, viz., environmental protection. Basically, everyone is to be considered a potential offender, although the actual chances of committing an offense within the meaning of these concepts vary heavily with the individual's occupational and social setting.

The Environmental Criminal Law of the Federal Republic of Germany, revised in 1981, is a peculiar type of combination of both these approaches. Its components are quite differential in nature - some elements being rather ecological, others more anthropocentric, others again, of an extremely restrictive nature, accessory to Administrative Law. The resulting discrepancies are accented by deficiencies of Criminal Law which are hard to understand. On the whole, we are given a program whose inherent discrepancies give rise to doubts regarding the achievement of ecological objectives by means of enforcing this law:²

On the one hand, water pollution, § 324 StGB - Strafgesetzbuch (German Penal Code) - has been shaped into a wide kind of "everyone's" delinquency. The offender is already liable to punishment if he has negligently impaired the quality of water (in parts or on the whole) without being in possession of a consent, thus giving rise to a considerable risk of criminalizing both the commercial and industrial sector and private individuals. For, the use of waters to (also) discharge of sewage cannot be dispensed with as of yet, the consequences of which are to a certain extent imponderable. At the most, standards of diligence which are commonly recognized and reliable in nature have only just begun to emerge, this giving rise to the risk of not being able to clearly differentiate pollution in terms of "socially adequate" and "socially inadequate" by applying § 324 StGB. This is especially the case with discharges of insignificance.

On the other hand, penal protection from environmental pollution is conceptualized in an extremely reserved manner. Nevertheless, particularly "hazardous modifications of the natural quality of the air" are in fact punishable according to § 325 StGB - on condition, however, that these alterations have been caused by the operation of an installation and in violation of administrative regulations. The applicability of this provision has thus been limited to particular incidents caused by commerce or industry. Other types of pollution such as soil pollution are to be considered crimes only in case there is an additional concrete danger to human health and to other highly valued (public) goods (§§ 329-330a StGB).

At the most, §§ 326, 327 StGB, intended as preliminary safeguards, compensate these shortcomings only partly. According to these provisions, not only the fact of environmental pollution itself, but already the mere violation of relevant precautionary standards is liable to punishment. § 326 StGB covers the illegal disposal of dangerous waste, whereas the unauthorized operation of a specific type of installation is actionable pursuant to § 327 StGB. Reducing the degree of culpability

required for criminal action is as positive as the limitations of these provisions are inconsequential: limiting § 326 StGB to waste is as illogical as the choice of installations referred to by § 327 StGB. However, since the law has failed to set stringent standards, it is nonsensical to expect the enforcing agencies to do likewise.

2. The chances of implementation: (preliminary) considerations with reference to the interests of criminological-empirical research

The phase of implementing penal pollution control appears to be a promising field of research in spite or rather because of such programmatic requirements as the above-mentioned. Not only is it a fact that the current trend to criminalize behavior formerly considered customary is contradictory to the prevalence of decriminalization efforts³ - above all, establishing (especially in practice) a normative linkage between various forms of delinquency, the valuations of which (in terms of criminal policy) differ as vastly as, e.g., in the case of white collar and "everyone's" crime, is the one issue currently arousing criminological interest. Especially in view of the "labeling-approach", the fact that § 324 et seq. StGB, for the most part accessory to administrative provisions, mostly do not include a conclusive definition of "tort", deserves notice in this context. Not only in these parts, Environmental Criminal Law has proven to typify the general trend of current legislation: elementary basic decision-making has been shifted from the legislative to the executive level. As present-day law-application exhibits characteristics of law-making, it can not be considered to be purely an inherent phenomenon of technical law enforcement. As a consequence, empirical (accompanying) research has now to focus on a more comprehensive implementation rather than on the classical evaluation of efficiency. Accordingly, criminal research on environmental crime is no longer able to take recourse to attributing and putting to practice existing normative standards of value. There rather seems to be a necessity of grasping in particular the great variety of intertwinements of and correlations between the act of setting and the process of realizing standards at all levels of the authorities involved.⁴ In terms of facts, this implies that, especially with regard to commercial and industrial practices, the legal and factual dimension of administrative officialism has to be included in the assessment of the chances of practical penal pollution control. The field (of research) which has emerged in consequence of the above-described is one of manifold interactions, extremely complex and conflictive in nature. The status of

³ Kaiser 1988.

⁴ Meinberg 1987.

Environmental Criminal Law as an accessory to administrative regulations requires the involvement of numerous participants, a fact which is rather atypical of the implementation of penal provisions. Moreover, these participants, namely, different authorities whose primary functions are for some parts quite differential, are committed to pollution control and penal repression in manners which are as differential. It stands to reason to expect problems (the extent of which exceeds the discrepancies of substantive law by far) to arise when standards, partly almost of a contrary nature, clash.⁵

Hence the various "**environmental administrative agencies**" are not purely pollution control agencies, moreover, they are in charge of managing ecological goods such so as to benefit the interest of all concerned. Pollution control therefore is a process of balancing ecological interests and the (allowable) interests of other parties, its scope hence being considerably relativized from the very beginning. The degree of significance allotted to environmental protection in a particular case depends also on the importance of "other interests", the assessment of which is influenced by certain subjective aspects such as the negotiating power of the applicant and the personal attitude of the government officer handling the matter concerned. In any case, in this context, fixed standards hardly exist, they are also quite inconceivable. Moreover, the administrative setting of ecological objectives, governed mainly by preventive-prospective principles, is based on the medium and long-term intent of limiting the degree of overall environmental pollution to the lowest level possible. In view of this, the significance of repressive punishment of past offenses and the stringent relementation of individual cases of polluting behavior is reduced considerably. Given this situation, there is little hope that, regarding the setting and supervision of environmental standards, stringent ecological patterns of action will emerge. In light of the fact that the existing objectives are highly differential and that pollution control is (particularly at this level of implementation) a potentially negotiable matter, further diffusions of the (penal) environmental program are inevitable, the consequences of which would primarily affect the industrial and commercial sector.

Although the environmental administration already exhibits a considerably high degree of internal inconsistency, the decisive structural conflict arises out of the relationship between the administrative and the **prosecuting bodies**: while the former are committed to the pragmatical "Opportunitätsprinzip" (= principle according to which prosecution of an offense is discretionary for the public prosecutor), the latter are committed to the "Legalitätsprinzip" (= principle according to which prosecution of an offense is mandatory for the public prosecutor), i.e., all offenses which have come to their knowledge are to be investigated and prosecuted in an even manner. Merely in exceptional cases, viz., cases of minor guilt, cases lacking public interest, the public prosecutor or court can refrain from prosecution. Surely we have to take into consideration that environmental crime is a rather new and diffuse field, still to be generally recognized as criminal. On the other hand, the prosecuting and punishing practices, rather reserved in nature, are face to face with the special importance of the ecological concern. In spite of everything, the

5 Meinberg 1986, 1987.

fact that polluting behavior was made liable to more stringent punishment was based on this concern. The binding force of such a basic legislative decision on the judiciary has to be extremely high.

However, the lack of consistent substantive standards of tort might prove problematic in this very context, for it is the object of legal protection with its specific, normatively fixed need of protection which serves as a guide for even, conclusive prosecution processes. Yet, Environmental Law lacks this kind of guideline if only because of the above-cited differences regarding the environmental media water, air and soil. Moreover, the wide power of defining environmental crime designated to the administration results in a lack of evidence of tort. E.g., it is in the nature of the matter that those polluting activities going with industrial production processes are occurring under a consent and are thus given a legal status, whereas, normally, there is no such justification for small-scale "everyday" polluting behavior, a fact which might result in a higher risk of the latter being criminalized. From the angle of the objective of ecological preservation, we can no longer speak of Criminal Law serving as a "last resort". Yet, if such guidelines are lacking, the prosecution of criminal offenses and the process of assessing the degree of tort are liable to be handled ad lib.

Moreover, resulting out of the lack of evidence of tort, the investigating authorities are highly dependent on the co-operation of the administration. The routine step to be taken prior to concretizing any suspicions of a commercial-industrial polluting act is to determine whether the polluter has acted either under an administrative consent or in violation of an administrative prohibition. The police and public prosecutor are highly dependent on the competent control agencies even for gaining knowledge of activities suspected of being criminal. For these authorities, above all others, have access to the sources of information and the technical know-how which enables them to identify even those environmental nuisances which are not readily to be perceived as such, one reason being the fact that the prosecuting authorities, still not sufficiently prepared to cope with environmental crime, lack both competence and capacity. On the other hand, the statutory limits of independent preventive activities on the part of the police have to be kept in mind.

Without doubt, the above-described substantive and technical intertwinements constitute the main features and main problems of penal environmental protection. Not only the aspect that, as per § 324 et seq. StGB, the protection of penal values is per se relativized, but above all the fact that the administrative authorities are closely bound into a rather alien machinery of standards is untypical, thus giving rise to the risk of counteracting the claim of ecological protection in that favor is shown to "negotiable" commercial and industrial cases, the seriousness of private "everyone's" crime, however, simultaneously being exaggerated. The legislative "span" between both these crime sectors requires a considerable amount of adjustment on the part of all the enforcing authorities involved. Above all, the decision-making strategies of the control and prosecuting agencies need to be harmonized to an extent which takes into account the particular primary function of each participating agency without neglecting the common interest - ecological pre-

servation. At present, only few (standard) fixed points exist. The realization of a comprehensive concept of governmental pollution control depends above all on the authorities' personal initiative and ability to reach a consensus. Success and failure will be trend-setting not only with regard to ecological preservation: moreover, whether, and if so, the extent to which our state and its control bodies are able to appropriately meet current challenges of an ever increasing complexity by developing solutions, as complex, oriented on criteria of "superior reason" is still to be proved.

3. Current situation: outline of design and findings of empirical research to date

Research findings thus far hardly give rise to any optimistic expectations. Quite on the contrary, in spite of an ever increasing registration of offenses, the situation at present rather seems to support the fundamental criticisms of environmental criminal programmatic. There is evidence of practical deficits particularly with regard to commercial-industrial practices and administrative supervisory competences. On the other hand, there are tendentious risks of overcriminalizing simply structured cases of small-scale agricultural and private activities:

As early as the mid-seventies, an extensive empirical study of "Vollzugsprobleme der Umweltpolitik" (1978) was already conducted by Mayntz et al. On the basis of indepth interviews and mail surveys conducted with the Water Protection and Nuisance Control Administration an attempt was made at rendering both the strategies of action pursued by this authority and the causes of possible deficits of the implementation process more lucid. In this context, the authorities, referring to the priority of confidential co-operation, proved extremely reluctant to take whatever kind of repressive action. Accordingly, filing a complaint in particular was hardly considered adequate to support the achievement of preventive objectives, this being so much the more so, as the deterrent effect of those sanctions factually to be expected would have been but small.

Subsequent studies conducted by Hümbs-Krusche and Krusche in 1983 (Die strafrechtliche Erfassung von Umweltbelastungen) and Rüter in 1986 (Ursachen für den Anstieg polizeilich registrierter Umweltdelikte) first revealed the drawback of this reluctance. For the greater part, these studies were based on a record analysis of criminal proceedings, the majority of which was carried on prior to the revision of Environmental Criminal Law (1976-1981). Nevertheless, these early studies already did confirm the structural narrowness of registered environmental crimes. To the extent that the police and the general public were developing an ever growing awareness of damages to the environment there was also an increasing willingness of both to initiate criminal proceedings, the case being quite different with the administrative authorities. As a consequence, the cases prosecuted were for the

most part easy to perceive; however, regarded from the ecological angle they could be considered rather trivial, whereas, by way of comparison, the sector of commercial and industrial polluting practices, though subject to intensive control, was disproportionately underrepresented. The reactions were structured accordingly, the seriousness of penalties imposed ranging at the lowest level possible.

Quite a different approach to the matter was chosen for a more recent study conducted by Wittkämper and Wulff-Nienhüser in 1987 - "Umweltkriminalität - Heute und morgen". Expert delphies and a public opinion poll were supposed to render informations as to the factual situation of environmental delinquency on the whole (i.e., including the dark field of unregistered offenses). These findings, in turn, were to serve as a basis for both a prognosis of the future development of environmental crime and a strategy of combatting these practices. The findings dealing with the present situation show a high level of agreement with prior findings - there is little proof that the situation has changed significantly. Though the risk of being detected has increased considerably in the meantime, we have to start from the fact that today there still is a considerable proportion of undetected industrial and private polluting offenses. The authors, however, prognosticate that the point of main emphasis will be shifted to qualified forms of white collar crime, partly even of an organized nature.

For years, the Max-Planck-Institute for Foreign and International Penal Law in Freiburg have been developing a comprehensive methodical concept which would render possible an examination of the implementation of the applicable Environmental Criminal Law with regard to its conditions.⁶ This project is closely connected with worldwide comparative studies of legal frameworks, conducted by the same institute.⁷ It is focused on a record analysis of about 2,000 criminal proceedings and proceedings covering administrative offenses. Moreover, secondary analyses of extensive statistical material and of both a great many expert interviews and mail surveys conducted with ministries and subordinate authorities constitute further sources of data. An additional, rather more detailed series of interviews is still to be conducted.

The findings thus far can be briefly summarized, as follows:⁸

- For years, the rates of increase in the number of registered environmental crimes have been above average. The fact that the findings obtained for individual federal states are quite differential is an indicator of nonuniform recording modalities.

⁶ Meinberg 1987, 1988.

⁷ Heine 1986.

⁸ Meinberg 1988, Meinberg and Link 1988.

- The latter reflect particularly the fact that the qualifications of the regional prosecuting bodies are quite differential. Organizational shortcomings are especially characteristic of the investigating police authorities, decentralized special units, appropriately equipped for handling environmental crime, still constituting an exception. The public prosecutor's offices are often lacking in expertise and staff capacity, too. Especially in this context, the fact that no supra-regional public prosecutor's offices exist is of further disadvantage.
- Analogous with the differential (referring to wideness) formulations of elements of offenses covered by § 324 et seq. StGB (See 1. above) water pollution is the type of environmental criminal practice registered most often. Unauthorized waste disposal is increasingly gaining importance, whereas air pollution hardly ever constitutes the subject-matter of criminal proceedings.
- For the most part, registered environmental crime is petty crime. Most cases handle small-scale polluting activities and practices causing merely ecological hazard, private, agricultural and small-sized-business "everyday"-practices being in the majority. Merely within the local areas of responsibility of specialized police units higher proportions of registered industrial and public (i.e., publicly owned enterprises) incidents are to be noted.
- Reports given by private individuals account for about half the criminal proceedings handling environmental crimes. The other half is evenly split into those initiated by police investigations and by tip-offs given by administrative authorities (mostly communities which had suffered damage, not the control agencies themselves). The latter still rather prefer strategies predicated on the notion of negotiating. Therefore in case there is no scope for negotiations or if negotiations have failed, they are more inclined to inform against the offender.
- In this context, the authorities refer to the priority of their own - administrative - norm-instruments. They state that the strategy here is one of co-operation, not confrontation, repressive sanctions, on behalf of confident co-operation with the citizen, being used only as a last resort; even then, an imposition pursuant to the Law on Administrative Offenses is considered more promising. Moreover, they state that the prosecuting bodies are still lacking both in expertise and in an adequate awareness of the problems concerned.
- Trade inspection agencies, in particular, are indeed reserved not only with regard to penal repression; moreover, proceedings handling administrative offenses are also an exception. There is little proof that the Law on Administrative Offenses serves to compensate loopholes in Criminal Law, rather, it mostly deals with cases

of environmental "misdemeanors" of minor ecological significance, for the most part small-scale "everyday" private activities.

- Although there have been attempts to approve the co-operation between the prosecuting and the administrative authorities, the relations which have emerged are for some parts of an extremely conflictive nature. On the one hand, on the part of the public prosecutor's offices and the police, attempts have been made to urge the administrative bodies to enforce the law more rigorously by applying means pursuant to Criminal Law. On the other hand, there have already been several reports of reactions on the part of the expert authorities, almost to be labelled "co-operation boycotts".
- It is only natural that this would reduce the chances of successfully clarifying the circumstances. Moreover, there are internal deficits in the investigative sector of the prosecuting authorities. Above all, the public prosecutor's offices often act rather passively, entirely leaving both the process of planning and carrying out the preservation of evidence to the police. The qualification of the latter is therefore the one criterium which determines the outcome of the investigations. Without exception, they never go beyond touching the mere surface of the phenomenology; there is hardly ever an attempt to also uncover internal (possibly more complex) responsibilities.
- As a consequence of the deficits - both material and technical in nature - cited so far, the structure of handling registered environmental crime is substantially characterized by withdrawals of prosecution. The proportion of cases resulting in both a charge and conviction is continually decreasing even further. While a high proportion of cases handling commercial practices is discontinued for lack of evidence, others are quite often terminated on the ground of insignificance. Throughout, the penalties imposed for crimes actually resulting in conviction range at the lowest legal level possible, prison sentences being an exception.

4. Detail analyses: specifics of recording and reactional patterns - correlates of group and social class rank?

The following is intended to discuss and intensify several aspects of judiciary processing in consideration of the phenomenological plurality of environmental crime. Thereby the question whether the sector of registering and dealing with borderline cases (referring to the borderline between commercial and private cases) is subject to any specifics is of special interest. Moreover, the pattern of

handling behavior committed by administrative agencies and the question as to the impact of the offender's social class rank on the investigations also deserve special attention.

The findings obtained through a record analysis of 1,203 representatively selected files of environmental criminal proceedings carried on in 6 of the West German Federal States - Baden-Württemberg, Bayern, Bremen, Hessen, Niedersachsen, and Schleswig-Holstein constitute the basis of data. With but few exceptions, access to these files was obtained via the police statistics of 1982, i.e., all of the cases entered into the survey were subject to police investigations during this year, settled subsequently by public prosecutor's offices and by courts (mostly in 1982/83). To obtain an adequate number of proceedings also for particular subgroups, a weighted sample had to be taken. Following this, in order to avoid distortions, the remaining data were "upweighted" to the population level. After all the statistical returns were based on a total of 3,406 "cases".⁹

However, for the purpose of the detail analyses reported here, we had to conduct an accused-oriented examination of data. Mainly two aspects were focused upon - the "economic setting" and the "accused's social class rank". Both these variables, based on data which had been compiled directly, were constructed at a later date. For this purpose, a preliminary selection of material had been undertaken beforehand. The analyses are exclusively based on cases which could be clearly classified in terms of both the above-mentioned attributes:

The criterium "**economic setting**" was differentiated in terms of commercial, public and private activity. The former, in turn, was divided into industry, small and middle-sized business. Cases referring to the special sectors "agriculture" and "navigation" were omitted, as, on the one hand, they were hardly able to be classified accurately; on the other hand, independent patterns of handling such crimes have developed, as they are rather stereotyped in nature. Moreover, several large-scale proceedings, carried through in Hessen, dealing with a large number of (private) accused were excluded; here, too, atypical mechanisms had emerged which, in the light of the research interest reported here, would have distorted the total picture.

Due to a lack of adequate information, "**social class rank**" was determined by analogy with the accused's occupational ranking. Based on the intent of differentiating as clearly and understandable as possible, the social class ranks were classified in terms of "low", "middle", and "high" class. The former group (= low class) included, e.g., manual workers, simple nonmanual workers and truckdrivers, the latter group (= high class) comprising, inter alia, acting partners, executive officers and self-employed individuals (physicians, architects). In cases of doubt, to achieve an appropriate degree of polarity for the remaining groups, the second category (= middle class) was chosen.

9 Meinberg 1988

Hence, the final number of cases (= number of the accused) entered into the calculations totaled 1,698. Differentiated on the basis of the two key-variables described above, the following table is obtained:

Table 1: Economic setting / social class rank

	Low		Middle		High		Total	
	N	%	N	%	N	%	N	%
Private	135	(43.5) (33.7)	136	(43.9) (16.4)	39	(12.6) (8.4)	310	(100.0) (18.2)
Small-sized business	113	(21.6) (28.2)	338	(64.6) (40.7)	72	(13.8) (15.5)	523	(100.0) (30.8)
Medium-sized business	110	(22.6) (27.4)	137	(28.2) (16.5)	239	(49.2) (51.3)	486	(100.0) (28.6)
Industry	12	(6.9) (3.0)	61	(35.1) (7.3)	101	(58.0) (21.7)	174	(100.0) (10.3)
"Public" (admini- strative agencies)	31	(15.1) (7.7)	159	(77.6) (19.1)	15	(7.3) (3.2)	205	(100.0) (12.1)
Total	401	(23.6) (100.0)	831	(48.9) (100.0)	466	(27.4) (100.0)	1698	(100.0) (100.0)

Chi² = 423.32, DF1 = 4, DF2 = 2, Significance p ≤ .01

As to cases of commercial/industrial practices, the fact that in this context criminal investigations are often carried out at management level is particularly striking. Focusing on the distribution of social class rank we find that the private and public sectors show a high level of agreement with statistical expectations, whereas, regarding industry and middle-sized business, the proportion of highly ranked positions is clearly disproportionately high. The fact that the proportion of middle-class offenders is also disproportionately high for small-scale business supports this finding, as the "management level" (owners of craftman's enterprises etc.) here is normally constituted by members of this class. In sum, the investigations quite rarely deal with "the man at the valve". The extent to which this also is reflected in patterns of handling criminal procedures is still to be determined.

Prior to this, we will briefly discuss the "ecological impact" of those cases registered and categorized as described above. The collection of data was based

on a 5-graded scale, ranging from 1 = "petty case" to 5 = "environmental disaster". By means of this scale, the interpretator classified each event according to its seriousness. The most important criterium to be taken into consideration was the factual degree of hazard and damage caused to environmental and individual objects of legal protection, subjective aspects (of guilt) having been omitted.¹⁰ The variations established between the mean values, though optically but small - ranging between 2 (minor case) and 3 (case of moderate seriousness) - do provide substantial information:

Table 2: Ecological seriousness-index with regard to economic setting and social class rank

	Low	Middle	High	Total
Private	2.30	2.26	2.53	2.31
Small-sized business	2.51	2.35	2.23	2.37
Medium-sized business	2.10	2.56	2.79	2.57
Industry	2.24	2.17	2.67	2.46
"Public" (administrative agencies)	2.59	2.79	3.35	2.80
Total	2.33	2.44	2.68	2.48

Variance analysis	Source of variation	Sum of squares	DF	Mean square	F	Significance of F
	Economic setting	36.601	4	9.150	13.989	0.0
	Social class rank	25.331	2	12.665	19.364	0.0
	2-way interactions	33.026	8	4.128	6.311	.000

As expected, regarded on the whole, "economic environmental crimes" have proved to be more serious in nature (inspite of a number of "registration filters") than private crimes, this, however, only applying to larger enterprises. The serious of small-scale-business cases ranges at about the same level as the seriousness of those crimes assessed as private. As to procedures dealing with "public offenders", we note that the mean value for this group is surprisingly high, a finding which gives rise to the assumption that because of the highly delicate nature of this type of crime investigations are only initiated if a case is considered qualified.

This might also explain the fact that social class and ecological seriousness exhibit a noticeable degree of correlation, the highest of which was obtained for the public sector. However, this correlation rather seems to reflect the fact that the higher the accused's social class rank, the higher the level of responsibilities - especially in cases dealing with the commercial setting. Yet, it does not explain the fact that, regarding private cases, the well-to-do accused rather tend to be made responsible for ecological nuisances of a more serious nature. As to the reason that the trend of small-scale-business cases is quite contra, this will also remain an outstanding issue.

Focusing next on the settling of procedures we will first examine the **decisions made by the public prosecutor's offices**; following this, we will examine judicial decisions. Our main objective here will be to describe possible correlations between these decisions and both "economic setting" and "social class rank".

The exceedingly high rates of withdrawals of criminal proceedings, the extent of which is hardly matched by any other type of crime dealt with, are without doubt the most striking characteristic of final decisions made by the public prosecutor. For our (sub)population, the proportion of cases dismissed equalled more than 70%, cases with unknown offenders already having been eliminated beforehand. The fact that the proportion of cases actually resulting in indictment amounted to a mere 11% only underlines the disproportion of (standard) demand and (prosecuting) reality even further.

Table 3: Final decision by public prosecutor / economic setting (in percentages)

	Private	Small business	Medlum business	Industry	"Public"	Total
§ 170 II StPO *	21.0	29.5	46.9	48.3	50.3	37.4
§§ 153, 153a StPO **	43.7	34.0	30.3	27.8	33.3	34.0
Strafbefehlsantrag***	23.8	22.6	11.7	12.5	6.3	16.7
Indictment	11.1	13.0	10.5	9.1	10.1	11.2
Other/None	0.4	0.9	0.6	2.3	0.0	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Chi²: 129.47, DF1 = 4, DF2 = 4, Significance p ≤ .01

* Withdrawal for lack of evidence

** Withdrawal on the ground of insignificance

*** Application for an order imposing punishment (fine, dispension of driver's licence and the like) issued by the "Amtsrichter" (judge of the municipal court) of the public prosecutor without previous trial.

Focusing on the **economic subgroups** with regard to the different types of final decisions available we note that, while the indictment rates show a high level of agreement, the remaining decisions exhibit interesting variations. With regard to withdrawals for lack of evidence and the "Strafbefehlsanträge", the material exhibits dichotomy - split into industrial, medium-sized-business and public cases on the one hand and into small-sized-business and private practices on the other hand. Regarding the former category, the fact that, though the crimes dealt with here are of a rather serious nature, every other case was dismissed on the ground of failing proof deserves notice, probably also owing to investigative deficits of the prosecuting authorities. Moreover, a great many industrial incidents proved to be not liable to prosecution as the accused had, e.g., been acting under a consent or license issued by an authority. This gives rise to the question how these cases came to be prosecuted at all: first, the number of environmental offenses reported by private individuals is disproportionately high. Furthermore, a dilemma of "informal social control" of environmental crime can be noted: wanting to make use of the population's increased awareness of environmental nuisances for the purpose of discovering criminal practices also means having to put up with a considerable degree of "poor perception". As the average private individual lacks information on the "consent" aspect of the matter, he has to go by the obvious phenomena of environmental crimes. Hence the number of legal practices inevitably coming to be controlled is quite large; whether this is in the interest of the matter and whether the (possibly) resulting defamation of those affected is acceptable is to be doubted.

Therefore the withdrawal quotes pursuant to §§ 153, 153a StPO are far more critical than those in accordance with § 170 II StPO. With regard to commercial and public practices recognized as criminal, the fact that, compared to the number of indictments and "Strafbefehlsanträge" (see above), the number of withdrawals of cases is disproportionately high can no longer be explained in terms of "exceptional nature" of the offenses. Rather, though the reasons given for this decision are assumptions of individual nature of offense, unforeseen circumstances, negligent nature of offense and minor damage, it reflects the fact that at present an entire crime sector is subject to both structural "bagatellization" and procedural decriminalization.

Focusing on **social class rank** we note that the variations exhibited, though less distinct, are for some parts also quite informative. The relatively high proportion of "upper-class" cases dismissed for lack of evidence is probably connected with the high proportion of industrial and medium-scale-business offenses also dismissed on these grounds. Moreover, more effective defense strategies of the accused possibly play an (autonomous) role in this context. However, the fact that the probability of the accused being indicted evidently decreases as his social status increases is even more striking. Merely the middle-class category exhibits an

Table 4: Final decision by public prosecutor / social class rank (in percentages)

	Low	Middle	High	Total
§ 170 II StPO *	35.2	34.0	45.2	37.4
§§ 153, 153a StPO **	34.5	33.9	33.8	34.0
Strafbefehlsantrag***	14.8	21.2	10.3	16.7
Indictment	13.4	10.9	9.9	11.2
Other/None	2.2	0.0	0.8	0.7
Total	100.0	100.0	100.0	100.0

Chi²: 56.63, DF1 = 4, DF2 = 2, Significance ≤ p.05

* Withdrawal for lack of evidence

** Withdrawal on the ground of insignificance

*** See table 3

increased proportion of "Strafbefehle" (see above) being issued, whereas, by way of comparison, the risk of higher ranked individuals being sanctioned at this level of judiciary decisions is noticeably low.

However, upon examining **judicial decisions** we note that the trends cited so far are drastically intensified:

Table 5: Final judicial decision / economic setting (in percentages)

	Private	Small business	Medium business	Industry	Public	Total
Conviction	54.4	28.3	23.2	5.6	3.9	27.9
Acquittal	4.0	6.9	1.7	10.2	0.0	4.7
§§ 153, 153a StPO *	35.3	52.7	70.1	84.2	84.3	59.0
Other	6.3	12.1	5.0	0.0	11.8	8.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Chi²: 284.92, DF1 = 3, DF2 = 4, Significance p ≤ .01

* Dismissal on the ground of insignificance

In spite of a massive "preliminary selective procedure" already having been conducted by the public prosecutor, those cases actually reaching court level also hardly run the risk of being sanctioned. More than 8 out of 10 cases are dismissed on the ground of insignificance, though the environmental nuisances dealt with at this level are for the most part of a more serious nature. The probability that small-scale-business and medium-sized-business cases will result in conviction is also quite low, the majority of private crimes handled at this level however being punished.

The situation with regard to social class rank is even more alarming. The higher the accused's social status, the lower the risk of his being convicted; simultaneously, the probability that either acquittal will be pronounced or that the case will be dismissed on the ground of insignificance increases. Though the number of crimes dealt with at this level is comparatively low, the trends exhibited here are unequivocal to such an extent that the correlations obtained can be considered statistically highly significant.

Table 6: Final judicial decision / social class rank (in percentages)

	Low	Middle	High	Total
Conviction	58.3	22.5	8.1	27.9
Acquittal	1.7	5.2	6.5	4.7
§§ 153, 153a StPO *	27.0	64.6	80.4	59.0
Other	13.0	7.7	5.0	8.4
Total	100.0	100.0	100.0	100.0

Chi²: 355.54, DF1 = 3, DF2 = 2, Significance p ≤ .01

* Dismissal on the ground of insignificance

It stands to reason that the authorities cited are practicing "class justice", an accusation, the graveness of which is hardly able to be invalidated - not even in consideration of special features of the course of procedure. However, the following aspects ought to be taken into account as possible explanations: upper class and industrial accused were highly represented by a lawyer (86% and 100%, respectively), as opposed to lower class and private offenders (44% and 36%, respectively). The nature of pleading to the case and of the willingness to confess vary accordingly, possibly resulting in procedural situations which are highly incongruous and for some parts extremely complex and difficult in nature. Moreover, as a rule, the investigating head officer is not the official to represent the public pros-

ecutor's office at court. Also, the fact that, for lack of concentration of competence, environmental cases are rarely brought before the judges is also to be taken into account. The above-described patterns of settling cases rather appear to be the result of a cumulation of behavioral uncertainties than the result of strategic considerations. However, while this is by no means any justification, it might indicate the course of reforms to prevent the following proverb coming true: "Little thieves are hanged but great ones escape."

5. Summary, conclusions and prospects

Already upon superficial examination, the process of the implementation of Environmental Criminal Law proves extremely conflictive, owing to programmatic requirements as prescribed by § 324 et seq. StGB, which unite economic and "everyone's" crime as well as Penal and Administrative Law in quite a peculiar manner. The enforcing agencies are overstrained by the task of having to resolve and harmonize the contradictory evaluations of environmental crimes resulting from this peculiarity. In consequence of this, reactionary and registrational patterns emerge which are quite inconsistent, moreover, the relations between the control agencies involved are often of an exceedingly strained nature. The resulting situation can be for the benefit of those making use of the environment for commercial and industrial purposes. However, especially with reference to the number of cases dismissed on the ground of insignificance (dealing also with environmental crimes rather serious in nature) and to judicial patterns of adjudicating in accordance to the accused's social class ranks, detailanalyses have proved the existence of further deficits in the process of enforcing Environmental Criminal Law, the nature of which exceeds these basic problems, as they are rather a result of organizational and (possibly) motivational shortcomings.

It stands to reason that findings such as these not only throw a bad light on the administration of justice; moreover, the public's faith in the governmental power of establishing and maintaining order is severely shaken. At a time which requires a considerable degree of individual solidarity in the (vital) pursuit of environmental preservation, the state bodies (legislature, administration, judicature) ought to be obliged to stand up for a concept of "superior ecological reason" with all their might. In concrete terms, this surely implies that, to guarantee a higher "lucidity" of law for all involved, a more stringent legal foundation of environmental use has to be created. On the other hand, the degree of organizational effort required would be considerable; moreover, the agencies involved would have to co-operate in a more flexible manner at all levels, abandoning traditional legal positions in the interest of

a common concern. And last not least, each official would need to be aware of his share of responsibility and act accordingly for the best of his possibilities.

Our intent is by no means to demand that Criminal Law should be given the priority of handling environmental protection. Administrative Law undoubtedly is and will be in future the central instrument, Criminal Law serving only as a last resort. The anticipated yield of the fact that environmental protection is also given support by Penal Law might even prove to have been overestimated, indicating the necessity of a substantive-legal reduction to a more realistic level. A practical and constructive test might in fact help to create useful recognition of these facts. Yet, first of all, every effort has to be made to develop a rather comprehensive concept which takes into account all legal matters and the authorities at all levels in as much as possible - matching the degree of significance attached to the matter of concern. As long as such a concept is still to be realized, any valuation of functions will be merely of a vague and preliminary nature.

Nevertheless, especially at this stage, the study of implementation conditions and processes is of special importance: As they are accompanied by research, information and analyses indispensable for making necessary corrections and innovations are continuously rendered. This, however, is based on the premise that the self-concept of those conducting such a research project includes both continuous communication with those dealing with environmental crime in practice and a pragmatical, flexible approach to the research design. Then, surely, the study of implementation can even become a procedural component, hence contributing to furthering and improving the possibilities of penal environmental protection.

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2

**Criminality and
Criminal Careers**

Cohort Study on the Development of Police-Recorded Criminality and Criminal Sanctioning

Part One: How Longitudinal Studies are Possible Considering the Existing Data Protection Restrictions

Gaby Schneider, Peter Sutterer, Thomas Karger

Since the entry into force of the Bundesdatenschutzgesetz (Federal Data Protection Act), the different regulations issued by the states of the Federal Republic of Germany, and the Federal Constitutional Court's reaffirmation of the individual's right to "informationelle Selbstbestimmung" ("self-determination with respect to information") as a constitutional precept, scientists engaged in empirical work are more frequently confronted with the problem of whether - and if so, with what kind of restrictions - access to official data is possible, and which restrictions will result for a planned research project.

A current point of controversy in pertinent literature is, in particular, how to satisfactorily defuse the tension which exists, in practice, between the individual's right of "informationelle Selbstbestimmung", derived from Art. 2 I Grundgesetz (Basic Law), and science and research's constitutional right to freedom, also embodied in the Basic Law (Art. 5 III Grundgesetz).

In this report, we would like to use our own project-related experiences to illustrate the situation at present, paying special attention to the influence which can be exerted by data protection authorities in criminological research. Using the example of a longitudinal study, we shall endeavour to show to what extent data protection interventions can jeopardize research projects and which consequences can result for their original targets.

1. The context of the project

1.1 The cohort approach and its significance in criminology

Most of the findings bearing on the context in which criminality emerges and spreads, are based on results of cross-sectional studies. However, the investigation of suitable prevention and intervention strategies as well as development-related issues, suggests the implementation of a longitudinal design. Cohort studies (the maintenance and periodical monitoring of a non-selected survey population - birth cohorts - over a relatively long period) are particularly suited to furnishing insights into the following:

- The relevance of delinquent behavior in childhood and youth for criminality in adulthood,
- Age-specific "peaks" in criminal behavior or criminal victimization (whether in the dark field or according to official records),
- The onset, course and/or consolidation of individual criminal "careers",
- The circumstances under which criminal careers begin or are terminated,
- The repetition of offences, in general, and the case of chronic recidivists, in particular,
- Offence-specialization of criminals and/or development from minor to more serious offences in the course of inofficial and official delinquency biographies,
- Typical biographies of individuals who have come into conflict with the law (with respect to central life events such as marriage, unemployment, etc.).
- The transition from adolescence to adulthood - an aspect which is of interest particularly in the field of juvenile delinquency - and that of the official reaction to it,
- The long-term impact which different types of sanctioning have on recidivism,
- The relation between social transformation, changes in the society as a whole (for example, in the law enforcement practices, economic fluctuations ...) and the spread of criminality.

1.2 The need for a criminological cohort study in the Federal Republic of Germany

A perusal of international cohort studies¹ in the field of criminal research, reveals that this type of study design has rarely been used. Existing criminological

¹ See e.g. Wilkins 1960, Christie 1960, Dunford and Elliot 1984, Wadsworth 1979, Hamparian et al. 1978, Hofer et al. 1983, West 1982, Wolfgang 1984, Sarnecki 1985, inter alia.

cohort studies are frequently not guided by explicit theories and hypotheses as is the case in classical social science; rather, they are to be referred to as inductive, multi-factor approaches which are based on the multiple causes of criminality.

On the basis of previous experience, mostly from abroad, we would say that the following requirements² should be met by future cohort studies in the field of research on criminality:

- Observation of the survey population should be prospective,
- A survey should be based on primary as well as on secondary data,
- More than one birth cohort should be included in each survey so as to:
 - counter the objection that it is "a single case study on the aggregate-level", and
 - to be in a better position to appraise epochal and development-induced behavioral influences (periodic and age effects),
- A survey should consider covering criminal behavior and judicial reactions, as well as the issue of victimization,
- Surveys should also include groups which have hitherto been neglected, in particular the population of the rural areas and small towns, women and foreigners,
- Surveys should include reliability tests of the findings of other studies,
- Surveys should ascertain the external validity of other cohort study findings with regard to their generalizability and replicability in different cultural and social contexts.

The primary aims of undertaking a prospectively designed criminological cohort study in the Federal Republic of Germany were thus to answer pending questions, to surmount deficiencies in content and shortcomings in methodology and to overcome the practical problems experienced by previous studies.

2. Description of the project

2.1 Aims of the study

The main purpose of the study is to investigate, via official data, the emergence and evolution of criminality as a function of the type and extent of law enforcement interventions.

Of central importance are the following issues:

2 See Farrington 1979, 1986a, 1986b; Wolfgang 1985.

- To what extent does the fact that one has been entered into official records at an earlier period of life determine conflict with the law at a later period?
- Which age-dependent courses of officially registered criminality can be observed?
- To what extent are the emergence and development of officially registered criminality subordinate to a change in society?
- To what extent do law enforcement interventions influence the development of delinquency?

2.2 Study design

The starting point of the study is the analysis of official data. On the one hand, we shall be analyzing supra-regional **police data** from the state of **Baden-Württemberg** (the data comprise records of the suspects from this state along with their alleged crimes, kept by the **Landeskriminalamt** (State Office for Criminal Investigation)). On the other hand, we shall be analyzing the same persons' **judicial records** for information on the grounds for each conviction and the type of punishment meted out; these files are centrally administered by a federal agency.

The original plan had been to conduct the study on the national level. However, instead of all suspects and all crimes being recorded in a single central federal police file collection, the available data are limited to a single federal state in each case. Moreover, no uniform guidelines regulate the registration and storage of these data and the latter fall within the competence of different data protection commissioners. Under these circumstances, we decided to limit the study to one state.

Since the organization of the electronic processing of police data is the most progressive in Baden-Württemberg, and since the Max Planck Institute for Foreign and International Penal Law is also located here, we decided in favor of this federal state.

In a first phase of the study, persons born in a specific year and recorded in the files of the Landeskriminalamt in Baden-Württemberg, are to be observed over a follow-up period of about 15-20 years with a view to further police registrations and convictions recorded by the **Bundeszentralregister** (federal register for judicial records), in order to facilitate the most complete analysis possible of the development of **officially** recorded criminality.

To achieve this objective it is necessary to record a person's earliest official record of behavior which is not in compliance with the law (from about age 7); the same person should then be observed through life phases which are relevant from the point of view of developmental psychology (childhood, youth, adulthood) with a view to subsequent official conspicuousness. At the same time, it is expedient to use background information to help identify individual, socio-biographical and law

enforcement influences, as well as those exerted by the entire society and to investigate the extent to which these factors determine official conspicuousness.

Parallel to this analysis of official data bases, we propose to conduct, at a later stage, a primary data collection in the form of a field survey of defined sub-populations taken from the periodically observed birth cohorts. The survey will focus on issues such as: dark field criminality, victimization and social- and personality-specific correlates.

The study design outlined above, implies the following general procedure:

- First study phase: **Secondary data analysis:** Precondition:
a) Procuring police data from Baden-Württemberg for specific birth cohorts
b) Procuring the judicial records on the same population
- Second study phase: **Primary data collection:**
The drawing of random samples from the same population and the execution of a field survey.
- Third study phase: The linkage of all data-sets and analysis of the entire data base.

2.3 The study sample

The members of **four** birth years were included in the study. The youngest cohorts (**1978, 1975**) were chosen to ensure the inclusion of the earliest possible entries in the police data collection. The ages of the youngest cohorts, at the **first monitoring point (1.6.1986)**, consequently ranged from 7-8 to 10-11 years, and those of the two older cohorts (**1973, 1970**), from 12-13 to 15-16 years.

The criteria by which the cohorts are designed in the secondary data analysis are, correspondingly: the year of birth (1970, 1973, 1975, 1978) and that of the record in the data collection of Baden-Württemberg police.

Furthermore, within the primary data survey, random samples shall be drawn from the resident population of the same cohorts, so as to be able to interview non-registered respondents as a comparison group, alongside the group of registered subjects. The four birth cohorts are to be investigated once a year, over a period of approximately 15-20 years (if possible until the 25th birthday).

Since the primary data survey is still in the planning phase, the following comments will focus only on the first phase of the study - the analysis of the secondary data.

3. Legal data protection problems with regard to access to official data

To achieve this first aim of the project - the comparative analysis of police data and conviction data - it was necessary to obtain access to the pertinent data in each case.

The following project requirements can be seen as problematic from the point of view of data protection:

- The data available must be **person-related**. If the different project questions are to be answered, the data may not be aggregated from the very outset.
- Data from different offices must be **linked in a person-related fashion**. The offices maintaining the data are one federal and one state agency for which different data protection authorities are responsible.
- Owing to the scheduled duration of the project, we will be storing information which, possibly, will have already been **erased** from the files of the offices from which it initially originated.
The individual deadlines for the erasure of data are determined by statutory provisions by virtue of which, after a specific period of time has elapsed, during which the data subject has not been re-registered, the data can no longer be used against him/her and must be physically removed from the file.
- **Access** to the data must remain guaranteed for the duration of the project. This means that, beyond the observance of the legal data protection standards in the planning stages of the project, future developments in data protection should also be anticipated as far as possible in the project design.

Since the desired data consist of person-related information maintained by state agencies, the admissibility of data transmission is regulated by the Landesdatenschutzgesetz (Data Protection Act) of the state of Baden-Württemberg (see §§ 1, 2 of that Act) and/or the special provision contained in § 42 II of the Bundeszentralregistergesetz (law governing the Federal Central Register for Judicial Records) concerning conviction-related data.

As a result of intensive negotiations first with the State Commissioner for Data Protection, the Office of Criminal Investigation and the Department of the Interior of the state of Baden-Württemberg, the need for our research project was recognized in principle; however, the opinion was that the protection of the data subjects

only permitted the disclosure of data in an anonymous form to render it impossible or at least very difficult to make inferences about the identity of the individuals to whom the data pertain.³

This condition raised two fundamental questions for us:

1. How would it be possible, using a suitable coding procedure to achieve a reliable linkage of:
 - the data from one data source over several draws, and
 - the data from different data sources over the duration of the project?
2. How far must the anonymization of person-related data go in order to rule out or to minimize any risk of re-identification, and how far may it go if a meaningful research is to remain possible in the future?

Before taking a closer look at these questions, the basic problem of the **anonymization** should be touched on briefly. According to the Federal Data Protection Act, "person-related data comprise single items of information about the personal or material circumstances of an identified or identifiable person" (§ 2 I Bundesdatenschutzgesetz (Federal Data Protection Act)).

A total, irreversible anonymization, in other words, the 'non-identifiability' of an individual, would mean that the data are stripped of all relation to the person in question. Longitudinal and especially cohort research rely, however, precisely on the possibility to maintain the link between person and data over a relatively long period of time. If it were to become admissible to disclose only anonymized data for research purposes, it would be impossible to conduct longitudinal research on the basis of official data. Such a consequence cannot be reconciled with the freedom of science and research embodied in the Basic Law. The "identifiability" of a person must be defined more narrowly to prevent the mere abstract possibility of a re-identification being able to render data "person-related" and thus impede the disclosure of data for research purposes.

One of the issues being discussed under the catch word "**de facto anonymization**" of data is, at what point a risk of re-identification is so minor that one could de facto assume that the data is anonymized. This is generally to be assumed when the data user is unable to identify the data subjects using the means at his disposal,⁴ but it is no easy task to decide when this is the case. In the transmission of official data, the special status ascribed to scientific research should be taken into consideration.

³ The first idea was to authorize the disclosure of data only with the consent of the persons affected. This would have meant that far more than 10,000 persons would have to be contacted in writing. This would not only have increased the financial costs considerably, but would have also caused an enormous time delay. Moreover, it would not have been possible to reconcile all the biases in the survey population, owing to refusals or failure to return the declarations of consent, with the project schedule.

⁴ See Eberle 1981, p.200.

The Federal Data Protection Act and the Acts of the states were enacted in the 1970's, given the rapid spread of electronic data processing. Their aim is to ensure that citizens are protected from uncontrolled disclosure and linkage of their - sometimes compulsorily collected - personal data by state agencies. A special regulation providing easier access to administrative data for scientific research was not considered necessary neither in the Federal Data Protection Act nor in most of those enacted by the states.

The fundamental dissimilarity existing between individual interests warranting protection against the collection and storage of data for state administrative purposes and those warranting protection against collection and storage for research purposes, demands a differentiated approach to data protection in both areas.

While state agencies also store personal data from citizens for the purpose of using them to justify and implement measures towards individuals ("intervention context"), in empirical social research, the person is important only as a carrier of attributes and not as an individual.⁵

Longitudinal research requires that the relation between data and person, is maintained over a relatively long period. Here, the personal identifiers are necessary **exclusively** for the purpose of linking the respective data and, subsequently replaced by codes, they can be kept **separate** from the rest of the behavioral data.

Empirical social research must increasingly rely on microdata from public administration if it does not wish central issues to remain unsolved.⁶ If access by research to such microdata is not to be systematically denied, the above-mentioned fundamental differences between administration and research must also be considered in the standards relating to de facto anonymization of the data.

In the final analysis, the reliability of a partial or de facto anonymization invariably depends on whether the data user is potentially in a position to acquire supplementary information.⁷ However, in many cases, supplementary information can only be acquired with a considerable investment of effort, time, cost and organizational expenditure, that is, acquisition of such information is not possible with the means normally at the disposal of the data user. Even in cases where additional information is more readily accessible, there is no reason why the researcher should a priori be assumed to have any intention to misuse the data.⁸ Particularly in criminological research there has been no record of data abuse by researchers to date.⁹ This is all the more remarkable as in the period prior to the enactment of

5 Scheuch 1980, p.253.

6 See Müller and Hauser 1987, Müller 1980.

7 See Simitis 1985, p.102.

8 See Jehle 1987, p.29 for similar reflections.

9 See Kaiser 1987, p.93.

the data protection legislation fully identifiable personal data (particulars) were regularly transmitted. Even in states with liberal data protection legislation for research, such cases are unheard of.

In the past years, attempts have been made to operationalize the term "de facto anonymization". As a result, analyses of the risk of being able to re-identify a person on the basis of partially anonymized data were carried out¹⁰ and criteria developed on when a de facto anonymization can be assumed.¹¹ Such a catalogue of criteria would surely improve the calculability of research projects should it ever become binding for data transfers from state agencies. On the other hand, such a rigid procedure would, in particular cases, also bring with it restrictions which are perhaps not necessary for the purpose of data protection.

Finally, we should also mention another problem which could become a major focal point in the future should the demands with respect to de facto anonymization be placed too high.

Since research can make no claim to the transmission of electronically processed administrative data and since the time, financial, personnel and organizational strain of the data-maintaining agencies increases with growing stringency of demands with respect to anonymization, it can be taken for granted that refusals by agencies to transmit data for financial reasons are likely to become more frequent in the future.¹²

It is against this background that we have to consider the conditions which Baden-Württemberg's commissioner for data protection has laid down for the transmission of police data. The same considerations apply to the disclosure of data on convictions, an aim which it has thus far not been possible to realize.

This is so especially because, in this context, the **linking** of the two data sources becomes the focus of attention. The additional data protection problems which result from this are reinforced by the fact that, in solving this complex, two different data protection authorities are involved.

What kind of delays and restrictions the various legal data protection problems - especially that of the anonymization of data - can cause or have caused in conducting the project, will now be discussed in greater detail.

10 Worthy of mention in this context, is above all the study carried out by Paaß and Wauschkuhn in 1985.

11 See e.g. Brennecke 1980.

12 At the same time, there is an increasing tendency for public authorities to carry out research themselves. One of the reasons for this is undoubtedly the much easier access which they have to their own data. Progressive tightening of data protection regulations to the detriment of research will most likely reinforce this "in-house" research trend among public authorities and further disadvantage independent research institutions as far as access to data is concerned.

4. Consequences for the current project

The overriding objective of the Data Commissioners was to exclude every conceivable possibility of identification of the data subject - even by the researcher.

First of all the content of the data sets was explored to eliminate or to transform into rough classifications any variables which could permit the slightest chance of re-identification. Consequently, the date of birth, for example, was reduced to the year of birth. Variables such as the place of birth, the place at which the crime was committed, place of residence and the like were categorized so globally that inferences relative to a specific community are no longer possible. These restrictions have considerable repercussions on data analysis. For example, computations of prevalence and incidence rates can no longer be carried out with precision on an age-specific basis. Moreover, different regional distributions and analyses or criminological-ecological issues can no longer be generated with the categorized information.

In a subsequent step, data protection required that the particulars be **irreversibly** coded. Un-coded particulars such as a person's surname, christian name and date of birth were to be coded in a way that the code of these identifiers could no longer be traced back to individual persons. This was to be done using binary addition and the attachment of a secret number which is to be deposited at the Department of the Interior. This demand posed the most serious problems for the project. It was not the program itself that turned out to be the problem - it could be developed rather rapidly - but rather the **unambiguous** attribution of personal information within a data source over the scheduled duration of the project (approximately 15 years) and between different data sources, seemed either to be jeopardized or rendered inestimable with this procedure.

The condition for applying such an irreversible anonymization concept is guaranteeing that each subject can be **unambiguously** identified; in other words, a unique code must be generated for each person in the following cases:

- Within a single data source (police data, conviction data) at a specific point in time;
- Within a single data source over several monitoring points;
- Between two different data sources (police data and conviction data) at a specific point in time;
- Between two different data sources over several monitoring points;

On the one hand, in order to be able to ensure an unambiguous linkage of personal data in each of the foregoing cases, one should have at one's disposal as many particulars (identifiers) as possible, among them at least the surname, date of birth, christian name and place of birth. On the other hand, these should be

unambiguous, standardized and un-coded although, as practice shows, this is not always the case. Two potential sources of error must therefore be kept in mind from the very outset:

First of all, it might occur that the identifiers (particulars) in two or more drawings - especially in the case of different data sources - are filed in states of varying **completeness**. Should, for example, the christian name (for example when several occur) or the place of birth be inadvertently omitted from a file, there would be no way that the same person code could result.

The second potential mistake results from the frequently observed **inconsistency** in spelling or from changes of names and place names. Here, there is a wide spectrum of conceivable spellings. The different ways of writing double-names, titles and similar prefixes, the transcription of foreign names in the Roman alphabet, spelling and typing errors are only a few examples of how different person codes could emerge.¹³

The first suggestion towards solving this problem was to develop a **phonetic** coding procedure. However, it was felt that in the long run such a procedure would have entailed considerable expenditure of time and personnel which would even have escalated into an independent project. Furthermore, it is likely that such a procedure would still be unable to entirely solve the problems mentioned previously. For example, if a place name is changed subsequently to a municipal reform, not even a phonetic procedure would be able to record it accurately; rather, an increasingly more comprehensive standardization process would have to precede this phonetic coding procedure. Moreover, the latter would also be unable to substitute missing names or parts of names.

To prevent further delay of the project, we decided for a more **practicable** procedure. One possibility of reducing potential errors was seen in reducing the number of identifiers (particulars) to be included. Thus only the **surname** and the **date of birth**, the most central and valid variables, were irreversibly coded with the aid of the coding program. To ensure unambiguity, the rest of the personal information (christian name and place of birth) should also be available in un-coded form but kept separated from the rest of the variables. For this purpose, attempts were made to acquire a "reference file" at the Landeskriminalamt in Stuttgart and at the Bundeszentralregister in Berlin, which would contain, apart from the code comprising coded names and dates of birth, the christian name and place of birth of the respondent in un-coded form.

However, the erasure deadlines stipulated by law for the agencies had to be observed, since a "second register" which would contain information beyond these

¹³ Apart from these sources of error, it must also be borne in mind that code reference tables which are specific to each electronic data processing installation must be aligned (especially with respect to umlauts and special characters).

deadlines was not to be created. Such a "reference file" was also necessary so that, with the aid of additional information, unambiguity of the person codes within these files could be attained.

During a trial run of the coding program, it was possible, using the procedure described (coding of name and date of birth), to achieve 99.1% unambiguous person codes with police data sets in the first phase. The remaining ambiguous codes could be cleared up on the spot with the aid of additional information from the police. Similarly good results are to be expected with the conviction data at the Bundeszentralregister in Berlin.

Errors committed in the agencies themselves in linking information about the same person in their own data sets, cannot, however, be checked and taken into account with this procedure. Allegedly, such inaccurate linkages emerge occasionally in practice. The reasons for this resemble those related to the coding problems described above.¹⁴ Consequently, our data cannot be better than the data source allows. Nevertheless, to avoid the possibilities of error from adding up or multiplying, alternatives (specific un-coded information), in addition to the irreversible coding program as described, should be available to carry out the data-anonymization and linkage procedures as unambiguously and accurately as possible.

The translation of the data protection conditions just described in practice led to delays in the execution of the project. Further, considerable delays in the running of the project emerge as a result of the sometimes very sluggish correspondence with the data protection authorities. Waiting periods of over three months until a reaction comes are no exception in this respect, whereby the time which elapses until notice of a definitive decision is received can even be much longer. It is chiefly projects with a short duration which might be seriously endangered by such delays.

With respect to the second intended study phase, the primary data survey, various conditions and possibilities were mentioned by the data commissioners for the event that persons be included in the survey sample on the basis of their police record. According to one version, those persons who are currently registered by the police - persons whose data have already been erased from the police data sets are not to be included in the drawing - are to be personally contacted in writing and asked for their written consent to being included in the survey. One can imagine what consequences such an official procedure could have for these persons by reminding them, and perhaps also others, of the entry in the police records. However, even methodological problems, such as a lack of willingness to partici-

14 Incompleteness or incorrect data concerning the person identifiers could, within a data source, cause that information is attributed to different persons, although in reality it applies to one and the same person. Identical persons are thus sometimes to be found in such data collections under two or several data sets.

pate and reduced quality of the interviews, are conceivable. These are some of the reasons why no concrete decision has been taken thus far on the precise organization of and approach to the primary survey; as a result, these aspects shall not be dwelt on further in the frame of this report.

Finally, we would like to draw attention to another point which should be given greater consideration when regarding whether data from state agencies are to be disclosed to research institutions: data security in receiving institutions.

On this point, it can be noted that the many data security measures already taken at the Max Planck Institute have been complemented by additional measures for this concrete project. The measures in question are also constantly being improved in order to ensure the privacy of the respondents and the protection of their data. From the organizational point of view, it should be mentioned that both the commissioner for data protection responsible for all the Max-Planck-Institutes and the commissioner for data protection of the Max Planck Institute for Foreign and International Penal Law conduct regular and extensive controls. Moreover, only very few of the collaborators who have undertaken to observe the requirements of data protection have access to the data set pertaining to this project.

On the technical level, numerous precautions have been taken. The institute's computer has no external line and is thus not linked to other computers. Passwords prevent unauthorized access to computer and files. The files which are in constant use, contain only the codes and thus de facto no longer permit a linkage of data to any one person.

6. Summary and conclusions

The data protection legislation of the last 10 years has not only accomplished an improvement in the protection of individuals from the misuse of their personal data by state agencies. It has also precipitated decisive changes in the field of empirical research using administrative microdata.

Even though improved data protection in the age of the computerization of public and private fields is basically welcome, thus far the fundamentally dissimilar interests of public administration, on the one hand, and independent empirical research using citizens' individual data, on the other, have found insufficient expression in the corresponding legislation.

Despite the fact that the freedom of science and research is a basic constitutional right, the Bundesdatenschutzgesetz and the Acts of most of the states do not contain any corresponding research clauses.

The consequence is that, despite the growing demand for official data for research purposes, actual access to the pertinent data banks is increasingly being impeded. Owing to the paucity of uniform guidelines, the assessment of the extent to which a specific project request seems capable of endangering the citizen's "interests warranting legal protection" as well as the extent to which access will be accorded to specific official data bases thus depends on the respective expertise of the individual data protection commissioners of the states. In recent years increasingly strict standards have been applied in assessing specific research plans.

From the viewpoint of a scientist, this type of regulation of research is not easy to accept insofar as it raises both substantive and methodological problems.

For example, it is already possible to mention quite a few cases¹⁵ in which research projects have indeed been obstructed by data protection commissioners. Accordingly, as far as future research, especially epidemiological studies or any type of longitudinal research is concerned, it seems hardly likely that it will be possible to execute certain types of studies as planned.

In the light of the obtaining situation, the cohort project which we have described in detail is also in a difficult position since the problem of **linking** anonymized personal data from different data sources still persists. As far as this is concerned, it has still not been possible to come to an agreement with the pertinent authorities about the degree of anonymization which is to be aimed for, about a uniform definition of anonymization which would satisfy all concerned, or about a practicable approach. The narrow interpretation of the term by the data protection commissioners seems unacceptable in our eyes and would pose a serious danger to this research project. Although a great deal of work, time and money could be invested in developing a program to fulfill all of the data protection conditions, so as to be able to estimate as precisely as possible the probability of accurately linking one person's behavioral data from different data sources and monitoring periods. However, it must be borne in mind that the resultant program cannot be more reliable or of better quality than the data on which it is based. The potential sources of error associated with the latter also consequently enter into an anonymization program based on these data so that there exists a danger of a multiplication of errors over time, which is precisely the type of problem which should be eliminated as far as possible in the frame of such an extensive project.

Since identifiability over time is a prerequisite for panel research, given the different quality of data and the concomitant insecurity with respect to anonymization programs, the researcher must have certain indicators and a minimum of additional information at his disposal, which will allow him to use occasional random checks to test the precision of the program, the meticulousness of the specialists

15 A detailed compilation of pertinent cases can be found in Scheuch 1987, pp.131-141.

responsible for the data linking and coding procedure at the institutions, as well as the reliability of the person-related data linkage. Project-related data management as well as substantive and methodological evaluation should therefore not be left up to the agencies which deliver the data and the data protection commissioners; rather, the **researcher** himself must be in a position to control the person-related data linkage throughout the entire duration of the project. This is the only way for him to achieve his research purpose.

On the other hand, not only the very high standards postulated by the data protection commissioners for a de facto anonymization of data, do require unacceptably high technical expenditure for both the data-maintaining agency and the data-receiving institution, they also raise problems with respect to a collaboration between data-delivering agencies (in the present case the Landeskriminalamt and the Bundeszentralregister).

In agreement with other scientists, it is thus necessary to acknowledge and to demand the following:

- If the possibility of independent research clashes with the aims of data protection, for each research topic, the right to the protection of the privacy of the individual citizen, will have to be weighed against that of free research, according to the principle of the proportionality. In the process it must be borne in mind that, as far as the research institution is concerned, the individual is only interesting as a carrier of attributes and his/her data do not serve to devise any measures which will be used against the data subject in question.
- Since scientists' data requirements vary according to the field of research, **no uniform** anonymization rules and programs can be devised.
- To avoid imprecise or erroneous scientific statements, data should not be disclosed selectively. Thus, before taking measures which restrict the scientific possibilities of analyzing data (renunciation of specific variables, combination and categorization of variable values) technical precautions should be taken at the data-receiving agencies and all the organizational possibilities of data protection should be used.
- Within the frame of replication and/or longitudinal studies, it must be possible for the scientist himself to link the data, preferably by means of linkage codes and maintaining the codes and personal data separately after the data have been collected. These original particulars should then, if necessary, be accessible only to specific persons.
- A right to refuse testimony should be granted to scientists and a prohibition of data seizure should be introduced, in order to ensure, in this respect as well, not only the citizen, but also the researcher a greater security with regard to the compliance with data protection regulations.

In order to continue to facilitate independent research (that is to render research projects not only easier to plan in the future, but also realizable according to the original conception), a possible solution might be the founding of an institu-

tion in which scientists, representatives of different data-maintaining agencies as well as data protection commissioners discuss individual study projects and, for specific cases, fix binding, practicable anonymization procedures. Such an institution could, if need be, also perform services for scientists who do not dispose of the technical infrastructure or organizational possibilities needed to ensure appropriate data protection so as to enable them to work efficiently with personal data. Such an institution could assume the function of a trustee as a jointly-used scientific installation, insofar as it can also dispose of person-related data. Furthermore, it must have the possibility of archiving the data transmitted to it over relatively long periods of time, so that access can be had to such data in the course of longitudinal studies.¹⁶ However, as for the collection and storage of data, such an institution should by no means replace autonomous research facilities which are able to take data protection measures on their own. The dangers and bureaucratic consequences which would result from such a centralization, should be sufficiently well known.

We can thus note that data protection has played an important role in increasing awareness of the dangers posed to privacy (predominantly through electronic data processing). Indeed, if one were to consider, on the other hand, the basic principle of science which is to handle data per se confidentially and not to enable any inferences to be drawn about individual persons from publications, then there is no reason to see the interests of data protection and those of science as diametrically opposed. Instead, they are identical.

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¹⁶ See, e.g. Eichener 1988, p.69.

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Part Two: On Longitudinal Research in Criminology and First Results from the Freiburg Cohort Study

Thomas Karger, Peter Sutterer

Longitudinal research in criminology, especially in the light of the high costs of such research designs, is still a controversial topic.¹ This paper seeks to expound what the authors see as the purpose of longitudinal studies in general and of cohort studies in particular while reporting on the first empirical findings yielded by the cohort project which is currently being conducted at the Max Planck Institute (MPI).

1. The controversy on longitudinal research

The discussion taking place predominantly in North American criminology is concerned with different topics and levels of research policy. Only by considering all the aspects of this debate can the controversy be understood. Leaving aside the existing criminal and research policy differences for the present, the following can be said to be the basic points of controversy:

¹ The February 1988 issue of the journal "Criminology" contains all of five articles on this topic complex from: Blumstein, Cohen and Farrington 1988a; Blumstein, Cohen and Farrington 1988b; Gottfredson and Hirschi 1988; Tittle 1988; and Hagan and Palloni 1988.

- Is the **age-crime relationship** invariant or does it vary across different sub-populations and/or offences?
- Does the **negative age-crime relationship** which has been observed on the aggregate level also exist on the individual level, or is there a phenomenon as a "**career criminal**", a type of criminal whose rate of criminal activity remains constant with increasing age?
- Is the computation of different career parameters such as age of onset and termination, prevalence, **Lambda**² and the duration of the career useful from a theoretical and practical perspective?
- Is **longitudinal research** fundamentally superior to a cross-sectional design and what are the concrete advantages, from the point of view of criminological theory, of longitudinal and above all of cohort designs?

It is possible to understand the vehemence with which the controversy about these issues are being conducted by looking at them against the backdrop of its criminal and research policy implications.

Starting from a key finding of the Philadelphia Birth Cohort Study conducted by Wolfgang, Figlio and Sellin,³ according to which only a few criminals are responsible for the majority of the crimes committed, it was hoped that focusing attention on this small number of offenders, would produce disproportionate benefits for crime control. Prognostic criteria are expected to facilitate early recognition of this group, referred to as "career criminals", making it possible to isolate them from society.⁴

This quest for the "career criminal" requires a study design which permits the researcher not only to describe and identify the courses taken by criminal careers, but also to trace the socio-biographical, socio-economic and personality-psychological correlates of such a career. Since longitudinal research and particularly cohort research are commonly seen as the only appropriate concepts for this purpose, in the United States, it is becoming a problem for projects bearing on other issues and/or using other research methods to procure sufficient research funds.⁵

² Lambda, introduced by Blumstein, Cohen, Roth and Visher 1986a, denotes the average number of offences per active offender.

³ Wolfgang, Figlio and Sellin 1972, p.88 et seq.

⁴ 'Selective incapacitation' or the preventive incarceration of the "career criminal" at an early stage in his career, is seen as an appropriate crime control measure by several criminal policy-makers in the USA.

⁵ Gottfredson and Hirschi 1986, p.213.

As exponents in this debate, Blumstein, Cohen and Farrington (BCF) have taken their stance as advocates of this career model whereas Gottfredson and Hirschi (GH)⁶ have declared themselves its opponents.

Along with a number of other leading North American scientists, BCF participated in the "Panel on Research on Criminal Careers" the findings of which were published in 1986 in a two-volume work.⁷

One of the aims of this project was to develop a criminal career model by which "career criminals" were supposed to be identified at an early stage.

According to BCF, the term "criminal" career differs from sociological professional career definitions insofar as specialization and escalation with regard to the seriousness of the offences fail to constitute definitional elements.⁸ Moreover, crime must not necessarily be the person's means of earning their living.⁹

BCF characterize a criminal career by four dimensions:

- The participation in criminal activities, that is, "prevalence" in the conventional sense of the term.
- The frequency [Λ] with which active offenders become delinquent over a specific period of time.¹⁰
- The seriousness of the offences committed by the active offenders.
- The onset, duration and termination of the delinquent period.¹¹

This model implies two prerequisites:

- Crime is not distributed evenly in a population, but is restricted to a sub-population.
- The composition of this sub-population varies over time since some criminals terminate their careers while new offenders begin theirs.¹²

6 For the rest of this report, we shall maintain the abbreviations introduced by the opponents themselves.

7 Blumstein, Cohen, Roth and Visser 1986a and 1986b.

8 Blumstein, Cohen and Farrington 1988b, p.60. Gottfredson and Hirschi (1988, p.39) deem the term "career" to be unsuitable precisely because escalation and specialization cannot be proved in the case of offender biographies.

9 Blumstein, Cohen and Farrington 1988a, p.2.

10 The expression "incidence" was avoided on purpose since it is used in a variety of different ways in the relevant literature.

11 Blumstein, Cohen, Roth and Visser 1986a, p.17.

12 Blumstein, Cohen, Roth and Visser 1986a, p.17.

A third hypothesis submits that, in the course of their careers, some criminals commit a consistently high number of serious offences over an extended period of time. In other words, their behavior is contrary to the - aggregate - negative age-crime relationship mentioned above. This type of offender is referred to as the "career criminal".¹³

Here, GH argue that the relationship between age and crime is a negative one, not only on the aggregate, but also on the individual level.¹⁴

The same authors also put forward what is known as the thesis of the invariance of the age-crime relationship.¹⁵ According to the latter, the typical graph representing this relationship - a steep increase, a peak in adolescence, followed by a steady decrease - is universal, that means, exists across all cultures, races and periods, is independent of sex and other attributes, and therefore invariant. Since they assume that this relationship also exists on the individual level, there is no empirical evidence, in their opinion, to support the existence of the "career criminal".¹⁶ According to GH, the quest for this type of offender is more a postulate of criminal policy than a potential source of fruitful starting points for criminological research.

However, directing research towards the "paradigm of the criminal career"¹⁷ also has, above all, important methodological consequences.

The task of defining a "career" calls for a research design which is capable of recording the courses taken by individual careers. Only a longitudinal and, in the present case, primarily panel or even better cohort designs can accomplish this, permitting the researcher to trace, analyze and interpret individual biographies.

GH's criticism is not directed at the sharp increase in longitudinal research in principle. Rather, these two authors reproach longitudinal research of not presenting adequate reasons for their choice of research design. They believe, first of all, that a procedure which is explicitly guided by theory is necessary since the theoretical basis and the resultant research hypotheses are the prerequisite for determining the choice of the research design. Secondly, the reasons adduced in longitudinal projects for the choice of their designs such as "only through longitudinal research can causal relationships among variables be recognized", fail to convince them.¹⁸

13 See Blumstein, Cohen, Roth and Visser 1986a, p.1. Some older terms which essentially have the same meaning are: habitual, chronic or multiple offender.

14 Such a conclusion from aggregate to individual courses harbors the danger of ecological fallacy (see Albrecht 1985, p. 198, with further references), since relationships observed on the macro-level must not necessarily exist on the meso- or micro-level.

15 Gottfredson and Hirschi 1983/84, p.554 et seq.

16 Gottfredson and Hirschi 1986, p.219 et seq.

17 Gottfredson and Hirschi 1988, p.37.

18 Gottfredson and Hirschi 1987.

Although we cannot and should not dwell on the different positions in this article, it should, however, be pointed out that neither side furnished empirical proof in support of their contrary opinions which is exhaustive or convincing enough to permit a decision for or against one or the other view. Only with an improved empirical basis could a decision in favor of either side be taken. Nevertheless it should be emphasized once more that GH do not altogether deny that longitudinal research can also be useful for the field of criminology. They merely dispute the theoretical importance that the preoccupation with "career-issues" can have for criminology and entertain doubts about the assumed yield of longitudinal research given the financial and institutional costs it engenders.¹⁹

2. Implications for the current project

The cohort project being conducted currently at the Max Planck Institute comprises two parts: the analysis of official data material and a field study. The modular construction of the entire study makes it possible to conduct both parts in principle separate from each other and allows their evaluation within the context of the controversy described above.

The **analysis of official data material** is concerned, on the one hand, with police registration data pertaining to specific birth cohorts (1970, 1973, 1975, 1978) and, on the other, with data from the Bundeszentralregister (federal register for judicial records) which maintains information on the criminal justice reaction to the same persons.²⁰ The separate analysis and linkage of these two sources of data is expected to provide information about some of the questions which continue to be a source of contention in the debate described above. Of particular interest is:

- What types of age-dependent courses of official police registration and criminal sanctioning exist?
- Is it possible to detect groups of offenders who exhibit deviations from the general age-crime relationship? In this context, it is mainly the question of what is known as "career criminals" and the influence exerted by legal sanctions on the development of a career that is of interest.

Since they refer to the **individual level of development**, only a prospective longitudinal study design will be able to answer these questions with sufficient ac-

19 On this point, see Gottfredson and Hirschi 1987 as well as Gottfredson and Hirschi 1986, p.229 et seq. (note 4).

20 More details on how the entire project was planned can be obtained from Part I of this article.

curacy. A retrospective approach had to be ruled out because of the periodic **deletion of records**²¹ from the above-mentioned files. Ignoring deletions could easily lead to methodological artifacts in the investigation of individual crime development. Since those offenders who, after coming into conflict with the law for the first time, become recidivist prior to the normal deadline for the erasure of data will - in keeping with the erasure regulations - remain in the files along with all the old information about previous offences. Thus, the probability that they will be included in further analyses is greater for this group of offenders than for those who manage not to become recidivist before the deadline for the erasure of data. As a result, if we were to take a retrospective approach, in other words if, for example, we were to carry out retrospective investigations of official records in quest of registered criminal incidents with respect to a birth cohort aged 25, we would find that, not only had a number of persons already been deleted from the record (that is, the prevalence would be under-estimated), but those remaining would have a complete series of offences on record. On the other hand, this procedure would probably cause those persons who come into conflict with the law, are removed from the files and are only recorded again after a long period of time, to be identified only as one-time offenders.

By comparison, the prospective procedure allows us to use annual data sampling and notification of the deletions, to follow offender biographies thoroughly and to calculate prevalence rates with precision. Organizing the project as a cohort study, in other words, recording the four birth cohorts in an isolated fashion, has an important function in the analysis of age-specific courses of criminal behavior in that it renders **age, period and cohort effects** to a great extent distinguishable from one another. Since two of these effects become confounded in each case,²² it will never be possible to achieve an exact separation of these three influencing variables in analysis even with the aid of a cohort design; however, inter-cohort comparisons do give reason to expect a better differentiation of effects and support for the findings concerning age-specific courses.

The authors' interest in the courses taken by careers is by no means rooted in criminal policy concerns but rather in considerations which have to do with criminological analysis and **theory**, although the affinity of the issues to criminal policy-making cannot be gainsaid. We share the opinion expressed by Blumstein et al.²³ that there is by no means sufficient empirical support to assert that the same factors which lead to the first official registration continue to affect the perpetration, frequency and type of further offences. As Tittle (1988) has pointed out, the inves-

21 The reasons why said deletions must be effected can be found in Part One, Section 3 of this article.

22 Glenn 1977, p.13 et seq.

23 Blumstein, Cohen and Farrington 1988a, p.4 and 1988b, p.60 et seq.

tigation of the courses of individual criminality can definitely have a stimulating effect on the further development of theories of crime such as Travis Hirschi's social control approach or the labeling approach. As far as this is concerned, valuable insights are expected from the linkage of police data with conviction data which is planned within the frame of this project. Even though a procedure which is explicitly directed by theory is not as necessary in the preparation of secondary data analyses (of official files),²⁴ as it is with data collection in the field,²⁵ later on in the project, the secondary data are also supposed to assist in testing the empirical content of those theories of crime which contain statements implying developmental processes.

3. The present state of the project

Measured against the total project the MPI cohort project is at present still in its infancy. For the secondary data analysis, we have thus far been able to secure the transfer of police data, and we are just about to reach an agreement on the transmission of conviction data from the Bundeszentralregister.²⁶

For a longitudinal study our project has not been running very long. As a result, those issues which require a longer period of study such as age-specific courses, "career onset, duration and termination" or even cohort effects, cannot be addressed yet or any attempt to do so must of necessity be rudimentary.

The data material which is at our disposal for analysis consists at present of three drawings (1986, 1987, 1988) from the Polizeiauskunftsdatei (police records) of the state Baden-Württemberg concerning suspects born in the years 1970, 1973, 1975 and 1978. Although only a larger number of drawings and information on custodial sanctions will be able to provide more reliable material on age and career courses,²⁷ several analyses can be carried out already with the available data without taking into consideration the specific cohort design. In an quasi-age-cross-section, the distribution parameters of criminal development (such as prevalence or incidence) can be traced and compared for the cohorts.

²⁴ In this case, we are unable to influence the collection of data.

²⁵ On the other hand, the primary data collection which is still in the planning stage must, however, predicate on theory from the outset if it is to yield more than a mere collection of data.

²⁶ The reasons for the delays have already been explained elsewhere. See Part I of this paper for details.

²⁷ For example, in calculating intervals between official registrations on the individual level, it is important to take into account the periods of incarceration or other custodial measures since, as a rule, no new delinquent acts are registered by the police during these periods.

Table 1 provides an idea of the current data base so that the reader can gain some impression of the actual **volume of data** which we have at our disposal:

Table 1: Data base by persons and offences (State: 01.01.1988)

	Cohort				
	1970	1973	1975	1978	
Number of persons	12,824	4,744	2,341	583	20,492
Boys	71.2%	74.2%	76.9%	81.6%	
Girls	28.8%	25.8%	23.1%	18.4%	
German	73.0%	62.6%	60.3%	58.7%	
Non-German	27.0%	37.4%	39.7%	41.3%	
Number of offences	44,104	13,708	6,077	1,053	64,942

4. Distribution parameters of criminality

The classical distribution parameters of criminality - prevalence and incidence - serve to describe the crime trends in a society and to compare these trends over different periods of time. What applies to the development of the entire society, applies equally to the usefulness of these parameters in observing the development of sub-populations within the society. By comparing the parameters across different cohorts in the same age-group, a cohort design offers the researcher the possibility of isolating changes in the development of crime with greater exactitude.

Prevalence is to be understood as the proportion of offenders in a given population over a specific period of time (for example, 1 year = annual prevalence) or up to a specific point in time (cumulative prevalence).

Incidence, on the other hand, denotes the proportion of offences²⁸ committed in a population over a specific period of time (for example, 1 year = annual incidence) or up to a specific point in time (cumulative incidence).

In the controversy outlined above, these parameters play an important role as dimensions of the career model. More than anything, however, it is the "individual

²⁸ Prevalence and incidence can be calculated on different levels of the filtering process of crime: in the dark field as self-report parameters, as police suspect parameters or as distribution parameters of convictions.

offending frequency of the active offender" (**Lambda**), recently introduced by Blumstein et al., which has precipitated GH's criticism. We believe that - apart from GH's fundamental rejection of the career model and its parameters - the fact that Blumstein's definition of Lambda remains unclear in different publications has had a significant role to play in GH's critical stance.

On the one hand, Lambda is used to denote sub-populations and the average offending frequency of the active offenders of these sub-populations over a specific period of time;²⁹ at the same time, it is defined as the individual offending frequency of the active offender.³⁰ The latter definition - and here we agree with GH³¹ - makes no novel contribution to comprehending the development of crime since this is nothing more than the individual (for example, yearly) number of offences committed by a delinquent.

On the other hand, Lambda can be of analytic use in describing sub-populations, although the information it provides can be derived from the annual prevalence and the annual incidence rates.

Incidence = Prevalence • Lambda

The following example should elucidate the analytic value of Lambda: two annual offending frequencies of varying magnitude are to be observed in two sub-populations (for example, women: low vs. men: high). These differences can be attributable either to the fact that, although as many men as women are criminally active, men commit individually far more offences than women, or to the fact that although the average offending frequency is equally high for both sexes, the proportion of men who become delinquent is much higher.³² Which parameters should be used in each case to describe the crime distribution in a population, depends on the concrete issue which the researcher is seeking to investigate. For this purpose, the function of prevalence rates as an important distribution quantity is undisputed. If the researcher calculates incidence rates, he or she is probably interested in comparing the "phenomenon of crime" in a country's population with that of another. If, on the other hand, Lambda is computed, interest is directed at a criminal sub-population and its offending frequency compared with other criminal sub-populations.

29 Blumstein, Cohen, Roth and Visher 1986a, p.18 and Table 3.4, p.63.

30 Blumstein, Cohen and Farrington 1988b, p.58.

31 Gottfredson and Hirschi 1988, p.42.

32 See also Blumstein, Cohen and Farrington 1988b, p.59.

5. Findings

5.1 Suspects with one vs. suspects with multiple registrations

Using our own data material on police registration, we intend to check first of all the findings which are commonly referred to as the starting point of "career research": the observation that a comparatively small proportion of offenders is responsible for the major part of the offences committed.

The following table gives the percentage of the suspects in each of the four cohorts with one or multiple registrations along with their respective percentages of the total number of offences committed by the cohort:

Table 2: One-time and multiply registered suspects and their proportion of the offenses registered in Baden-Württemberg (through 1987)

Registered offenses	Year of birth							
	1970		1973		1975		1978	
	SUS	OFFS	SUS	OFFS	SUS	OFFS	SUS	OFFS
1	59.2%	17.2%	58.8%	20.5%	62.9%	24.5%	71.9%	40.4%
2 to 4	25.7%	19.3%	28.8%	25.6%	26.9%	26.1%	23.4%	31.5%
5 and more	15.1%	63.5%	12.4%	53.0%	10.2%	49.4%	4.7%	28.1%

SUS = Proportion of suspects in %; OFFS = Proportion of offences in %

The values reported here are cumulated for the four cohorts up to and including 1987 so that the 1970 cohort is, for example, 17 years old at the time of computation.

The order of magnitude of our results diverges from those reported by Kerner (1986).³³

It must be borne in mind, however, that Kerner predicated his classification according to offenders with one or multiple registrations on the basis of the offending frequency for only **one follow-up year**. As a result, persons who had previously been in conflict with the law but had been registered only once in the year under

³³ For example, Kerner (1986, p.121) found 73.5% suspects with a crime proportion of 30.2%, for one-time offenders 'under 14 years of age'; for the '14 to 17 year olds' the proportions were 66.6% offenders and 23.5% offences.

review, were classified as a one-time instead of multiple offenders. Correspondingly, when we base our calculations for the 1970 cohort only on the year 1987, the picture generated by our calculations is no different from that of Kerner. According to this computation, 70.0% of the suspects are offenders with one registration who are responsible for a total of 30.2% of the crimes committed by the cohort in 1987. However, to our mind, the cumulative calculation procedure produces a much more precise picture of offenders with one or more registrations since it covers the entire registration period.

A look at the category '5 and more offences' in Table 2 will confirm the assertion that relatively few suspects are responsible for a considerable proportion of the offences perpetrated. However, over the years, the proportion of suspects with multiple registrations increases compared to offenders with a single registration.

Whether it is possible to isolate subgroups exhibiting particularly high values in their 'offences to offenders' ratio within the category '5 and more offences', is an aspect which will be investigated now by further analyses.

Table 3: Average number of offenses per suspect for multiple suspects (5 and more offenses) by sub-groups and cohorts (through 1987)

	Year of Birth			
	1970	1973	1975	1978
All	14.46	12.45	12.45	10.57
German	14.32	12.37	13.53	8.92
Non-German	14.89	12.47	11.37	11.79
Boys	15.40	13.16	12.98	10.13
Girls	8.94	8.97	8.78	11.75

Table 3 illustrates clearly that there is practically no difference in the average offending frequency per offender between the Germans and the non-Germans. Only among those born in 1978 do greater differences appear; however, as the absolute numbers are relatively small, these differences should be interpreted with caution. In **comparing males and females** very clear **differences** came to light whereby the ratio (Lambda) for the female respondents remains almost equal, while for the male respondents it increases steadily. An exception here is once more the 1978 cohort and, as was the case in the German/non-German comparison, the differences should be interpreted with due caution.

5.2 Age at first police registration

A glance at the age at which the first police registration occurred also reveals differences between males and females:

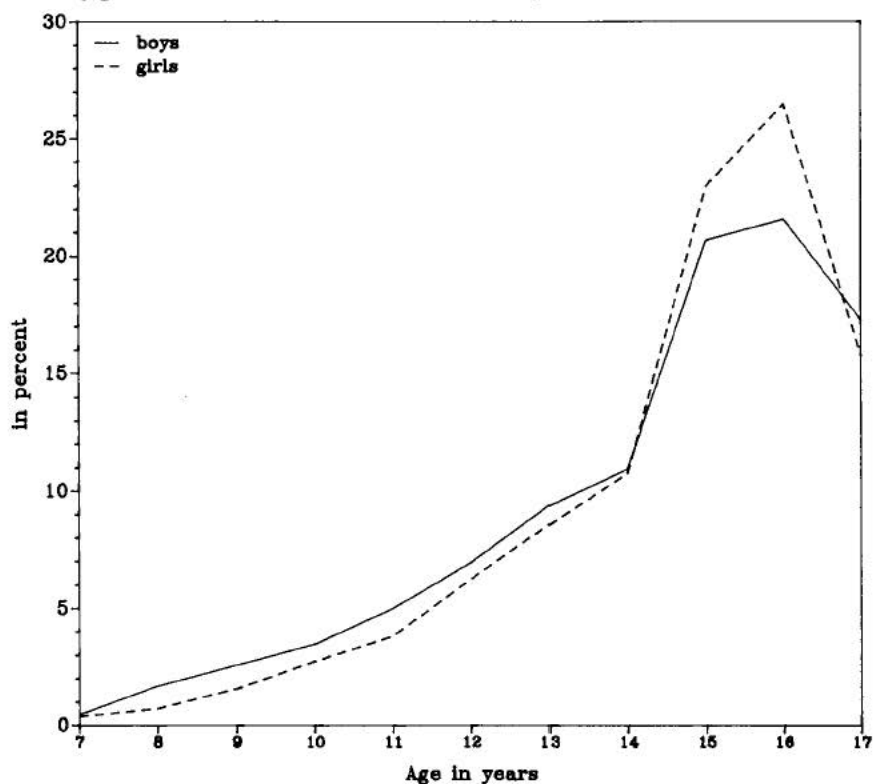
Diagram 1: Age of boys and girls at first police registration

(Ages 7, 8, 9 : from the 1978 cohort)

(Ages 10, 11 : from the 1975 cohort)

(Ages 12, 13, 14 : from the 1973 cohort)

(Ages 15, 16, 17 : from the 1970 cohort)



Whereas over 40% of the male suspects whose data were analyzed had had contact with the police before the age of 14, just under 35% of the female suspects had had such contact at that age. There is no denying that much more differentiated analyses are required here. Among other things, further analysis would surely be necessary to test the hypothesis that early conspicuousness is a prerequisite for or favors an extended period of criminal activity.

5.3 Prevalence, incidence, Lambda

The following comments are concerned with prevalence and incidence rates as well as their relationship to each other against the background of differences in age, sex and nationality.

However, before we proceed any further, a few general comments should be made about the way in which these rates are calculated.

In each case the absolute numbers were projected per 100,000 of the corresponding residential population of Baden-Württemberg so that the sometimes very small percentages in the lower age brackets could be represented more clearly. As can be seen from the following diagrams, the different age-groups do not stem from the same cohort. This is so because to date we have been unable to obtain enough complete material on one or even several of the cohorts which we have drawn. To be able, nonetheless, to describe at this point in time age specific prevalence and incidence rates, we used those years of criminal activity (1985 to 1987) for which we have complete figures for each of the cohorts as the basis for computing the age-groups. The base figures for suspects and crimes from the residential population are not yet available for the 1987 year of criminal activity. The population from 31.12.1986 was therefore taken as a basis for comparison.

5.3.1 Annual prevalence and incidence rates, Lambda

Aside from giving an overview of the age-specific development of annual prevalence and incidence rates of police registration in Baden-Württemberg, the following diagrams are supposed to show the analytic benefit which the calculation of Lambda as a ratio of offences per active offender can have for the differentiation of sub-groups.

To be able to consider the large range of the values plotted in the different graphs and the 3 parameters simultaneously, a triple logarithmic scaling was chosen.³⁴ As a result of the logarithmic transformation, a linear course of the age

³⁴ We would like to express our gratitude to Bernd Geng for his advice and assistance in producing the following graphs.

Diagram 2

**Annual Prevalence Rates, Incidence Rates
and Lambda (λ) by Age-groups for Suspects
in Baden-Württemberg
- Total -**

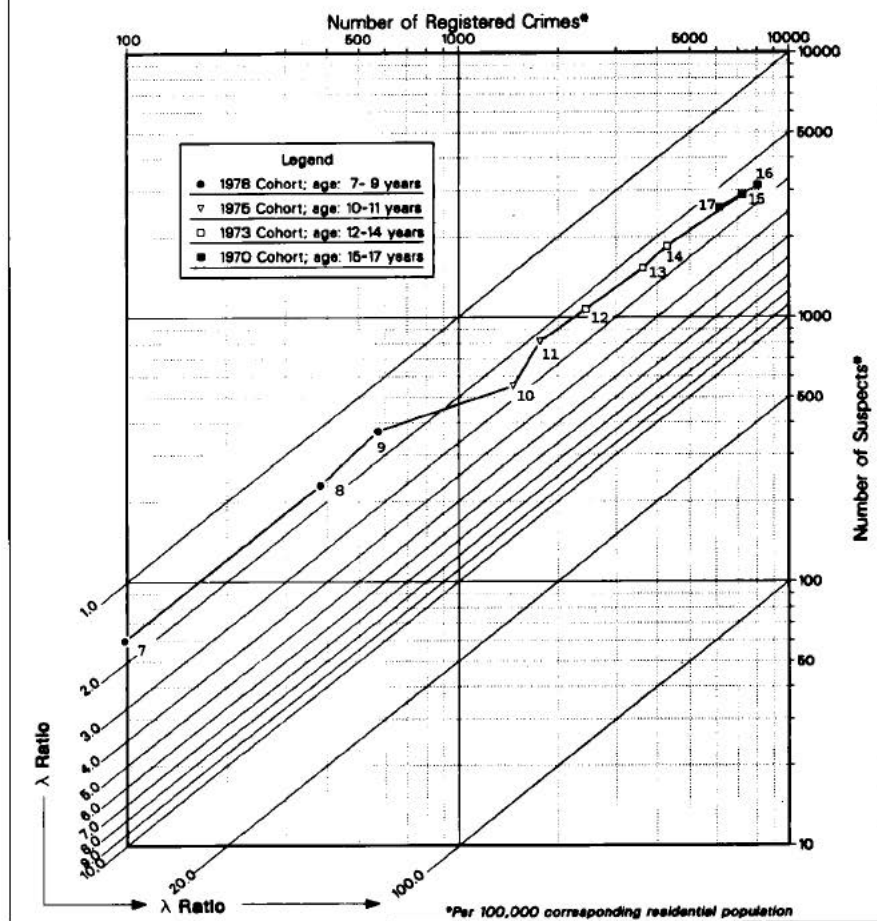


Diagram 3

**Annual Prevalence Rates, Incidence Rates
and Lambda (λ) by Age-groups for Suspects
in Baden-Württemberg
- Boys / Girls -**

Number of Registered Crimes*

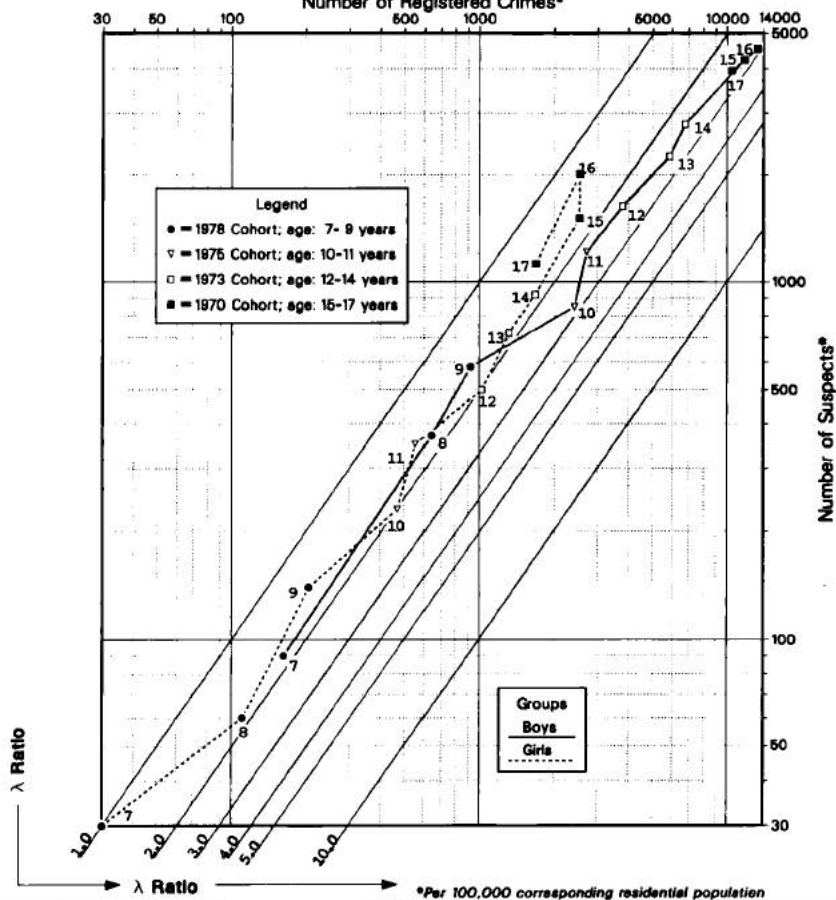


Diagram 4

**Annual Prevalence Rates, Incidence Rates
and Lambda (λ) by Age-groups for Suspects
in Baden-Württemberg
- Germans / Non-Germans -**

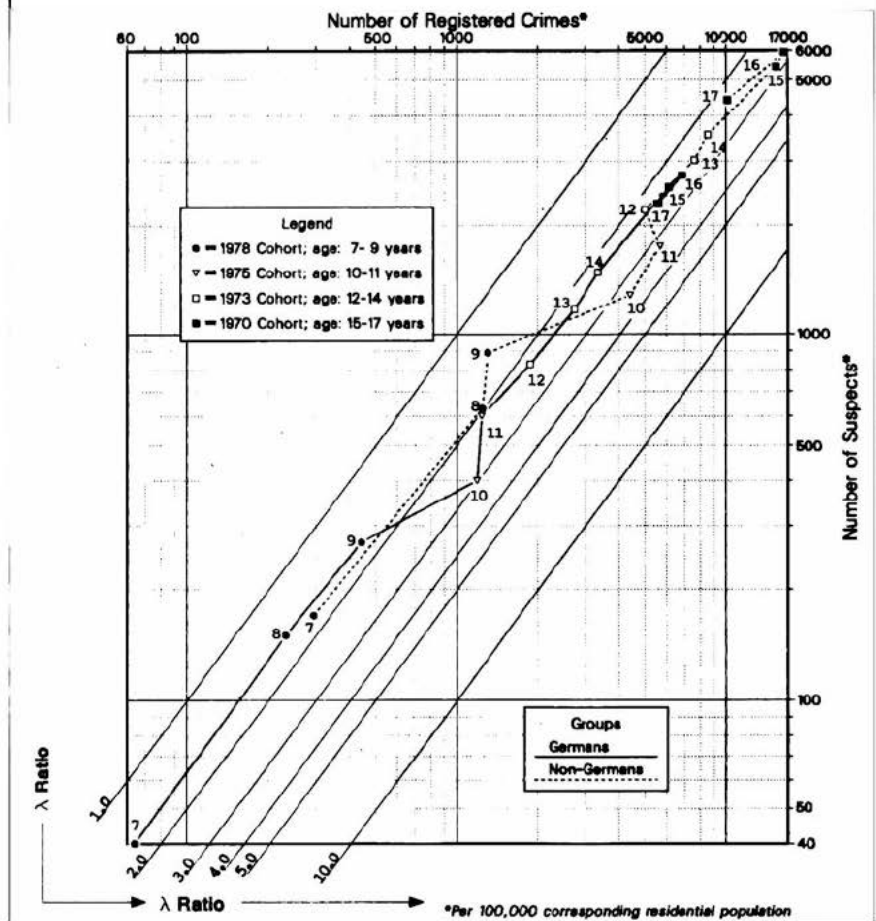


Diagram 5

**Annual Prevalence Rates, Incidence Rates
and Lambda (λ) by Age-groups for Suspects
in Baden-Württemberg
- Boys; Germans / Non-Germans -**

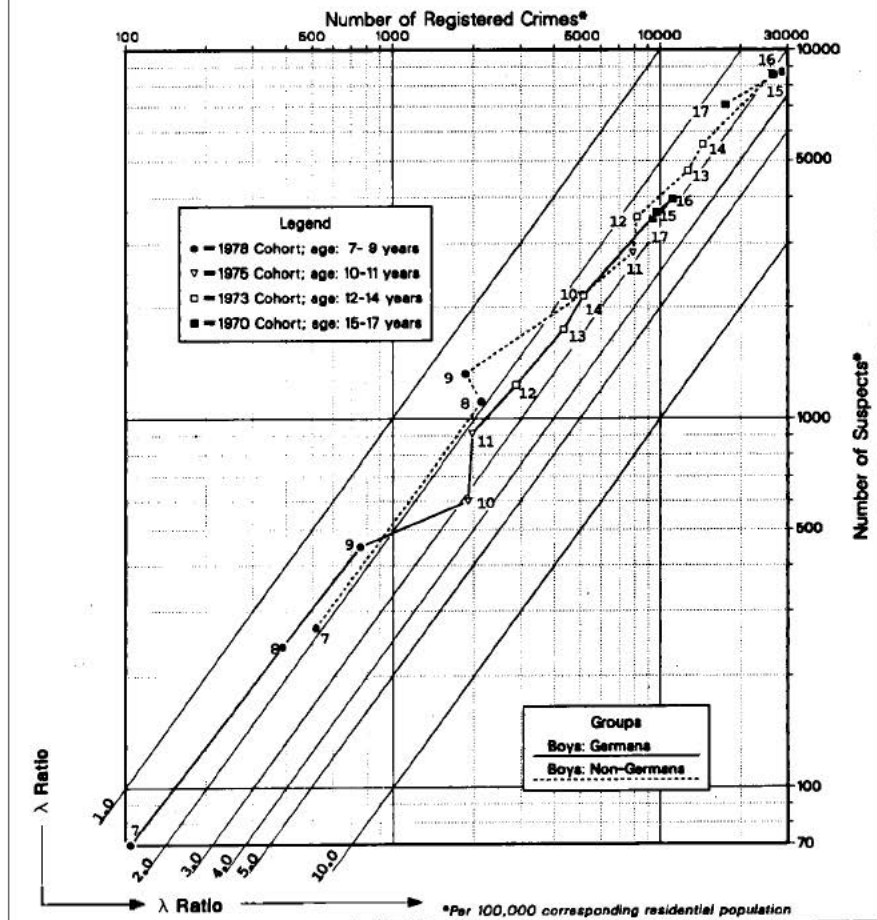
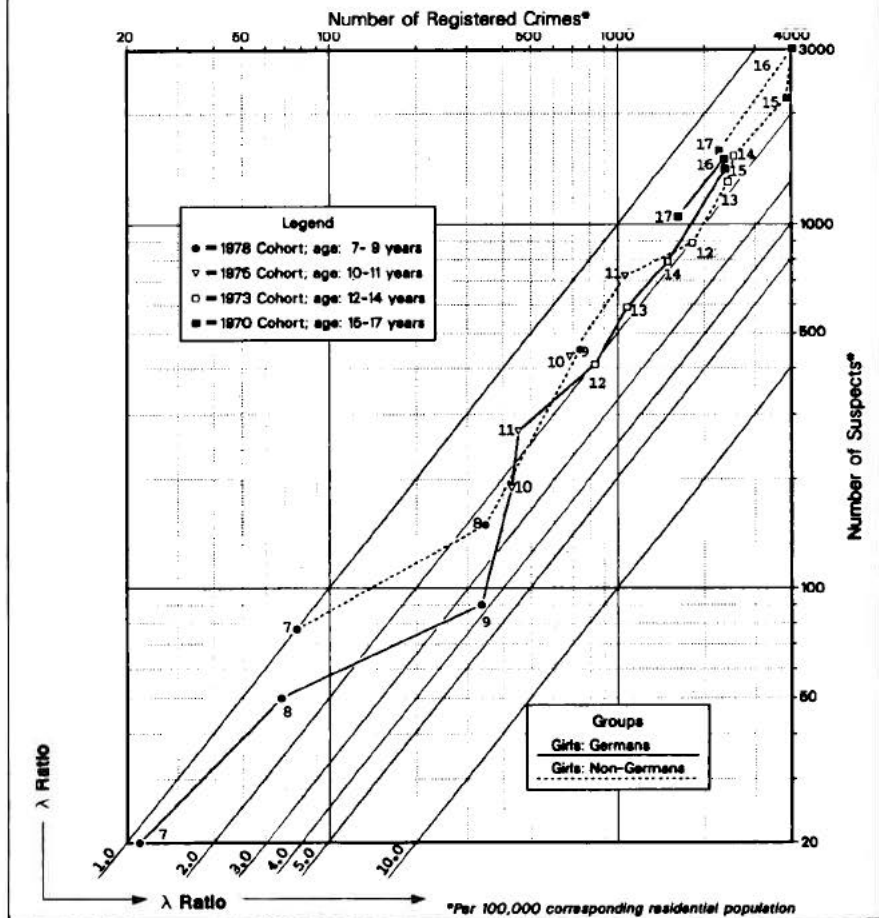


Diagram 6

**Annual Prevalence Rates, Incidence Rates
and Lambda (λ) by Age-groups for Suspects
in Baden-Württemberg**
- Girls: Germans / Non-Germans -



curve actually is an exponential one. When comparing the age curves of two sub-groups, a logarithmic division offers the additional advantage that identical vertical distances between two points on the curve indicate an identical relative change.

An example should facilitate understanding the following graphs:

If one locates the age point '10 years' in Diagram 2 and move horizontally to the suspects axis, the value arrived at is 550; this means that per 100,000 of the 10 year old population in Baden-Württemberg (1975 cohort, 1985 year of criminal activity), the number of suspects is 550.

Correspondingly, for the number of offences which were committed in 1985 by these 10 year olds, the value arrived at is 1,500 (exactly 1,463)³⁵ if one moves vertically from the age-point in the direction of the offence axis.

By moving from the age-point '10 years' diagonally to the ratio axis, one arrives at a value of between 2 and 3 (precisely: 2.66) for the ratio offence/offenders (Lambda).

Annual prevalence and incidence rates increase steadily over all of the sub-populations, and therefore also for the total population, from age 7 to age 16 and fall again at age 17.

The statement that the registered individual criminal activity increases sharply until the 20th year³⁶ can be specified insofar as both the prevalence and the incidence of police registration increase. The drop in rates among the 17 year olds requires further investigation since, when making the first sampling of data, it was observed that retrospective police investigations precisely for the year before the last sampling in each case (1987 in this instance) added a few more cases.

Looking at the **offence/offender ratio (Lambda)**, one is struck to discover that no uniform patterns in the sense of a rising or falling trend can be recognized across the age-groups. However, although the ratio increases sharply at about age 10 relative to the entire population, it is impossible to observe any steady subsequent increase in the rate (Diagram 2, Table A1 annexed).

A comparison of males and females reveals a Lambda which is clearly higher across the different age-groups, that is, males have a much higher average offending frequency than females (Diagram 3, Table A1 annexed).

A similar picture is generated when comparing the Germans with non-Germans whereby the Germans show the lower of the two rates (Diagram 4, Tables A2 and A3 annexed).

In observing the German and foreign males, on the other hand, neither of the two sub-populations exhibit a distinct predominance with respect to the average number of offences per suspect (Diagram 5, Tables A2 and A3 annexed).

³⁵ The precise figures for the individual age-groups can be found in the annex: Tables A1 to A3.

³⁶ Kaiser 1988, § 47, 7.

An interesting and appropriate example of the analytic benefit to be derived from the calculation of Lambda, is the comparison of the German and non-German females. Whereas both in the case of the annual prevalence and in that of the incidence rates, foreign females showed clearly higher rates than their German counterparts, their ratio of offences to offender is lower almost without exception across all of the different age-groups (see Diagram 6 and Tables A2 and A3 annexed). This shows that although a higher incidence rate need not lead to a higher average offence number per person, the latter can even be lower than in the comparison population if the number of suspects is higher in relative terms. This finding encourages us to presume that there is a higher proportion of one-time offenders among the foreign females than among their German counterparts - a contention which we choose, however, not to pursue further here.

5.3.2 Cumulative prevalence rates

Whereas with the annual prevalence rates just described, persons who become repeatedly conspicuous in different years are included again in every year, the cumulative prevalence rate tells us which proportion of the population up to a specific age was suspect at least once.

Table 4 shows considerable differences in the prevalence rates both among the males and females and among the Germans and non-Germans. Particularly striking is the consistently high value for foreign males compared with other sub-groups.³⁷ However, the differences among the males are not the only factor responsible for the roughly twice as high prevalence rate of the non-Germans compared with the Germans, in each case, as a glance at the comparison of the females shows.

Expressed somewhat pointedly it could be said that the fact that a person is **male and non-German** increases the risk of being registered by the police in Baden-Württemberg. Needless to say, it is impossible to decide on the basis of the data at hand whether this finding depicts the consequence of a selection process on the part of the police or - at least in the relationship between the sub-groups - a 'genuine' reflection of crime.

³⁷ One difficulty which exists in calculating cumulative prevalence rates is that it implies a cumulation over the suspect's lifetime while the comparison figures are taken only from the last base year in each case. In this case, especially sensitive reactions might be expected from the group of foreigners since this population is characterized by higher fluctuations. A person who is registered at the age of 7, will probably no longer appear in the base population 10 years later but will be counted among the suspects. Because of the essentially lower absolute figures compared with the Germans, these rates could very easily be over-estimated.

Table 4: Prevalence rates (cumulative) of police registration in Baden-Württemberg by age

Cohort	Year	Age	Total	G	N-G	Boys	Girls	Boys		Girls	
								G	N-G	G	N-G
1978	1985	7	0.06	0.04	0.18	0.09	0.03	0.07	0.28	0.02	0.08
	1986	8	0.28	0.19	0.77	0.46	0.09	0.31	1.34	0.07	0.21
	1987	9	0.63	0.45	1.60	1.00	0.23	0.73	2.56	0.15	0.65
1975	1985	10	0.92	0.66	2.25	1.46	0.36	1.04	3.74	0.26	0.83
	1986	11	1.63	1.19	3.71	2.49	0.68	1.82	5.99	0.52	1.51
1973	1985	12	1.84	1.43	3.81	2.83	0.83	2.15	6.15	0.68	1.48
	1986	13	3.08	2.40	6.13	4.61	1.47	3.55	9.58	1.21	2.63
	1987	14	4.54	3.60	8.77	6.67	2.29	5.23	13.49	1.91	3.98
1970	1985	15	5.35	4.64	10.50	7.72	2.86	6.54	16.41	2.65	4.36
	1986	16	7.50	6.60	13.89	10.60	4.26	9.18	20.62	3.90	6.78
	1987	17	9.08	8.06	16.25	12.83	5.14	11.23	24.04	4.73	8.00

Year = Year of criminal activity; G = Germans; N-G = Non-Germans

6. Conclusion and prospects for the future

The controversy in criminology with respect to "career criminals" and the merits of longitudinal research is still with us and the authors of this paper believe that neither of the two sides has thus far been able to present empirical material that is convincing and conclusive enough for the debate about the "career criminal" to be seen as resolved.

In the context of the MPI's cohort project which we have presented the preoccupation with questions of crime development does not stem from criminal policy concerns but rather from considerations of criminological theory. We are convinced that research on the development of crime on the individual level could make it possible to generate more precise statements about or even modify theories of social control or interactionist theories of crime.

A detailed analysis of crime development on the **individual level** is only possible using longitudinal designs and, in this endeavour, panel designs offer the best possibilities - all reservations about biases caused by sample mortality notwithstanding. Furthermore, a cohort study as a special type of panel design can assist in differentiating age, period and cohort effects.

However, these first results of the Freiburg cohort project cannot yet profit from the specific advantages of a cohort design as the project has not been running for a sufficient length of time.

Notwithstanding, it has already been possible to make initial statements about one-time and multiple offenders, age of onset and the epidemiological crime parameters - prevalence and incidence - as well as their relationship (Λ) as a function of the age of the respondents. The resultant differences between males and females as well as between Germans and non-Germans will, among other things, be investigated in greater depth in the course of further analyses. Moreover, particular attention will be accorded to **offence-specific differences**, escalation and specialization in individual offence biographies in subsequent investigations.

The linking of the police data analyzed here with the conviction data from the Bundeszentralregister will provide us, inter alia, with the opportunity to investigate the interdependency of police registration and conviction in the biography of an offender. Models of event history analysis of the data collected over time are deemed particularly suitable to achieving this task.

Appendix

Table A1: Annual prevalence, incidence and their relationship (Lambda) by age (per 100,000 residential population)

Cohort	Year	Age	Suspects			Registered Offences			Lambda		
			All	Boys	Girls	All	Boys	Girls	All	Boys	Girls
1978	1985	7	60	90	30	98	163	30	1.63	1.81	1.00
	1986	8	230	370	60	382	643	111	1.66	1.74	1.85
	1987	9	370	580	140	570	921	206	1.54	1.59	1.47
1975	1985	10	550	850	230	1463	2421	470	2.66	2.85	2.04
	1986	11	810	1210	350	1761	2709	555	2.17	2.24	1.59
1973	1985	12	1070	1630	500	2424	3788	1023	2.27	2.32	2.05
	1986	13	1520	2260	720	3621	5857	1319	2.38	2.59	1.83
	1987	14	1840	2790	920	4262	6769	1680	2.32	2.43	1.83
1970	1985	15	2890	4220	1510	7214	11685	2533	2.50	2.77	1.68
	1986	16	3140	4530	2010	8018	13246	2543	2.55	2.92	1.27
	1987	17	2590	3940	1120	6135	10383	1688	2.36	2.64	1.51

Year = Year of criminal activity

Table A2: Annual prevalence, incidence and their relationship (Lambda) for Germans by age (per 100,000 residential population)

Cohort	Year	Age	Suspects			Registered Offences			Lambda		
			All	Boys	Girls	All	Boys	Girls	All	Boys	Girls
1978	1985	7	40	70	20	64	104	22	1.60	1.49	1.10
	1986	8	150	240	50	231	387	68	1.54	1.61	1.36
	1987	9	270	450	90	442	758	336	1.64	1.68	3.73
1975	1985	10	400	600	190	1188	1909	428	2.97	3.18	2.25
	1986	11	600	910	270	1234	1978	451	2.06	2.17	1.67
1973	1985	12	830	1230	410	1876	2884	834	2.26	2.34	2.03
	1986	13	1170	1740	590	2734	4338	1078	2.34	2.49	1.83
	1987	14	1480	2150	790	3345	5147	1483	2.26	2.39	1.88
1970	1985	15	2550	3630	1410	6106	9687	2352	2.39	2.67	1.67
	1986	16	2750	3940	1500	6828	11125	2333	2.48	2.82	1.55
	1987	17	2300	3490	1050	5575	9366	1611	2.42	2.68	1.53

Year = Year of criminal activity

Table A3: Annual prevalence, incidence and their relationship (lambda) for **non-Germans** by age (per 100,000 residential population)

Cohort	Year	Age	Suspects			Registered Offences			Lambda		
			All	Boys	Girls	All	Boys	Girls	All	Boys	Girls
1978	1985	7	170	270	77	294	516	77	1.73	1.91	1.00
	1986	8	630	1110	150	1242	2145	347	1.97	1.93	2.31
	1987	9	890	1320	450	1303	1872	739	1.46	1.41	1.64
1975	1985	10	1280	2160	430	4406	5077	681	3.44	2.35	1.58
	1986	11	1750	2820	720	5681	7885	1061	3.25	2.80	1.47
1973	1985	12	2210	3530	890	4995	8180	1811	2.26	2.31	2.03
	1986	13	3020	4700	1300	7603	12719	2406	2.52	2.71	1.85
	1987	14	3550	5540	1530	8532	14446	2525	2.40	2.61	1.65
1970	1985	15	5440	8560	2210	15347	26404	3849	2.82	3.08	1.74
	1986	16	5940	8690	3020	16474	28227	4041	2.77	3.25	1.34
	1987	17	4410	7080	1580	10080	17495	2236	2.29	2.47	1.42

Year = Year of criminal activity

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Escalation and Specialization

A Comparative Analysis of Patterns in Criminal Careers

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1. Introduction

The question of how criminal careers develop in terms of the **success of types of crimes** an offender commits has been of great interest in criminology and criminal justice.

In criminology, the interest has centered on whether there are **distinct patterns or typologies among criminal careers**, for instance whether there is evidence of a successive "**hardening**" into criminality, such that offenders tend to move into more and more serious crimes (**escalation**), or, whether offenders tend to **specialize** in crimes, e.g. with robbers tending to commit mainly robberies and forgers committing mainly forgeries.

These issues have been addressed in a number of studies on criminal careers and recidivism. In addition to earlier studies on individual case histories and qualitative analyses of lives in crime (e.g. Sutherland's Professional Thief or Irving's Felon), there has been a growing body of empirical research on more representative criminal careers. The Science and Technology Task Force¹ introduced the "**crime-switch-matrix**" to examine the patterns of successive crime-types that offenders commit. In that study, there was some evidence of escalation in seriousness. In their study of juvenile criminal careers, Wolfgang, Figlio and Sellin (1972) studied such transition matrices extensively. They observed a **considerable degree of switching across crime-types**, and concluded that there was **neither significant specialization nor significant escalation**. The analysis of Wolfgang et al. (1972) has been replicated in part, using different statistical measures, by Bur-

1 See President's Commission 1967.

sik (1980) and Rojeck and Erickson (1982). Bursik found evidence of some specialization (property and runaway), and a random switching pattern otherwise (i.e. independent transitions in the case of all other crime types). Figlio (1981) has also used the transition matrices in Wolfgang et al. (1972) to estimate **career lengths** and the **probability of ever committing a particular offence** based on the initial offence. Moitra (1980) analyzed the arrest histories of a sample of arrestees in Washington, D.C., and found an absence of escalation in seriousness over a criminal career. However, offenders tended to stay within property crimes or within violent crimes.

Hood and Sparks (1972) summarize a number of other studies, and conclude that while there is some evidence of specialization (especially for broad categories), in general it is not very common. Van der Werff (1981) examined recidivism among a sample of convicted offenders in the Netherlands. He found some specialization among the general category of property offences, but relatively little specialization in any specific crime-type. Klein (1984) has also reviewed some of the research in offence specialization, and concluded that delinquents are generally versatile, and do not tend to specialize. Buchmann studied careers of juveniles based on convictions. She found that neither specialization nor escalation did occur to a significant degree in a sample of juvenile and adolescent offenders.² But in general, insight into criminal careers is still rather limited. In the comprehensive summarizing report of the Panel on Research on Criminal Careers (1986), it is concluded that major research efforts are needed to explore and to test the promises the career concept suggests both for criminology and for criminal policy.³

This paper reports a **comparative analysis of switching among crime-types** in criminal careers based on **successive convictions** using **data from West-Germany** and the **United Kingdom**. The West-German data was initially collected for an analysis of the effects of sentencing, especially for the study of recidivism after different types of sentences such as fines, imprisonment and suspended sentences.⁴ The basis of the research consists of a representative 5%-sample of all criminal offenders convicted for theft, fraud, breaking and entry, assault, traffic offences as well as other, more or less marginal crimes in the year 1972 in the area of Baden-Württemberg/FRG.⁵ The British data is taken from the Home Office Research Study No. 53, "Previous Convictions, Sentence and Reconviction: A Statistical Study of a Sample of 5,000 Offenders convicted in January 1971".⁶

2 Buchmann 1983.

3 See Blumstein et al. 1986, p.10.

4 See Albrecht 1982, 1984.

5 For more details see Albrecht 1984.

6 See Phillpotts and Larencki 1979.

The analysis of **criminal careers based on convictions** is important, even though it is rare. It is rare because convictions tend to be infrequent whereas arrest histories tend to be much longer and thus provide more data points. On the other hand, convictions represent crimes that we can be reasonably certain were committed, and thus avoids the biases that might be introduced in arrest records through police practices.⁷ Also sentencing policy can only be based on conviction records (because of the principle of presumption of innocence), and hence in developing sentencing policy, only the analysis of conviction careers can be relevant. As far as selective incapacitation is concerned, two kinds of policies may be considered:

- offender-based policies where prediction is based on offender characteristics,
- charge-based policies where the target is a certain crime type which is taken as an indicator identifying groups of offenders likely to commit this type of crime again.

Both kinds of policies require that careers in crime are fairly well patterned, that there is sufficient evidence that there indeed exist crime types in which offenders tend to specialize. Obviously, information on the previous record is the information most widely used in determining the sentence. Sentencing research revealed in various jurisdictions that number and seriousness of prior convictions are the most important criteria explaining variation in types of sentences and sentence length.⁸

The crime-types were classified into five types: violent, fraud, property, traffic and "others". The British data were regrouped to make it as comparable as possible to the West-German data. Since the West-German sample did not include sex offences among the initial offences, that group was omitted from the British data as well.

2. Exploration of the relationship among the crime-types

To explore relationships among crime-types, e.g., whether criminals tend to move between specific crime-types, we examine the **transition matrices** and **test for the null-hypothesis of no relationships**, that is, **independence**. If the observed data fits the model of independence then we can conclude that there are

7 See Hood and Sparks 1972.

8 See e.g. Blumstein 1983.

no relationships or interactions among the crime-types. And in particular we can also conclude that there is no evidence of escalation in seriousness. If subsequent offences are independent from the preceding criminal event then the occurrence of crimes within a career is at random. On the other hand, if the model of independence has to be rejected, then we can examine the deviations to check for escalation or other interactions. This analysis has been done by Wolfgang et al. (1972), Moitra (1980), and Bursik (1980), and the results from these analyses are compared below. The transition matrices are obtained in the standard way where the element in each cell of a matrix (p_{ij}) is the probability of having a subsequent conviction for crime-type j , given that the previous conviction was for type i . The values are estimated from

$$p_{ij} = \frac{n_{ij}}{n_i} ,$$

where n_{ij} equals the number of those convicted for a type i crime and are then convicted again for a type j crime, and n_i equals all those convicted initially for type i . We use k to denote the transition sequence number.

The transition matrices for the German data are presented in tables 1 to 5 and for the British data in table 6. The results of the analysis with the German and British data are given in tables 7 and 8 resp., where the standardized deviates as well as the χ^2 -values for each matrix are shown. From the high values of the χ^2 obtained in every case, we have to **reject the hypothesis that the transitions are independent**. Turning to the deviates, we find that the diagonals and only a few specific cells have relatively large deviations. Examining the German data first (tables 1 to 5), we see for example that the **transitions between traffic and property**, and **traffic and fraud** (in both directions) tend to occur significantly less frequently than would be expected. This suggests that there is a **negative association between traffic on the one hand and property and fraud on the other**. Individuals convicted for traffic **tend not be subsequently convicted** for these property-type offences, and vice-versa. We also find a negative association between "others" and fraud in the third and fourth transitions. The explanation of this might be that some offences included in "others" are associated with traffic offences. So, this would be reflecting the negative association between traffic and fraud offences noted above. The fact that this appears at this stage may follow from the fact that the transition probability from traffic to others increases with k for the first three transitions, and the marginal probabilities for "others" increase with k , as noted earlier. There could be quite a number of explanations for this. One is that as the conviction career progresses, offenders tend to commit more crimes in the category "others" which represents a rather wide range of different types of of-

fences, thus indicating a far greater potential of crime switching than is able to demonstrate through the use of rather broad crime categories. Or it could be an **aging effect**, since the offenders naturally get older as their careers progress. Or it could reflect a change in recording practices, where crimes previously classified under traffic offences, later are classified under "others". The transitions could thus reflect such a "time" effect. Since career length, age and time are confounded in such an analysis, no definite conclusions can be drawn.

Table 1: Transition matrix for first to second conviction (K=1)

initial crime-type	subsequent crime-type					N	
	violent	fraud	property	traffic	others		
violent	.11	.20	.02	.22	.44	.08	45
fraud	.11	.45	.05	.13	.27	.22	120
property	.07	.19	.44	.07	.24	.11	59
traffic	.08	.05	.04	.51	.32	.51	276
others	.05	.10	.13	.20	.52	.07	40
	.09	.17	.09	.33	.32		
N	47	92	49	177	175		540

Table 2: Transition matrix for second to third conviction (K=2)

initial crime-type	subsequent crime-type					N	
	violent	fraud	property	traffic	others		
violent	.20	.20	.08	.20	.32	.10	25
fraud	.03	.47	.08	.11	.31	.28	72
property	.03	.18	.36	.09	.33	.13	33
traffic	.02	.07	.05	.39	.46	.16	41
others	.12	.09	.06	.25	.48	.33	85
	.07	.22	.11	.21	.39		
N	19	56	27	53	101		256

Table 3: Transition matrix for third to fourth conviction (K=3)

Initial crime-type	subsequent crime-type					N	
	violent	fraud	property	traffic	others		
violent	.22	.00	.22	.22	.33	.06	9
fraud	.07	.37	.07	.07	.43	.21	30
property	.05	.14	.32	.05	.45	.16	22
traffic	.05	.09	.05	.18	.64	.16	22
others	.07	.09	.25	.18	.42	.41	57
N	10	21	26	19	64		140

Table 4: Transition matrix for fourth to fifth conviction (K=4)

Initial crime-type	subsequent crime-type					N	
	violent	fraud	property	traffic	others		
violent	.00	.40	.00	.20	.40	.06	5
fraud	.00	.38	.08	.08	.46	.16	13
property	.07	.13	.47	.00	.33	.18	15
traffic	.08	.00	.15	.23	.54	.16	13
others	.11	.19	.11	.08	.51	.45	37
	.07	.19	.17	.10	.47		
N	6	16	14	8	39		83

Table 5: Transition matrix for all convictions

Initial crime-type	subsequent crime-type					N	
	violent	fraud	property	traffic	others		
violent	.14	.19	.06	.21	.39	.08	84
fraud	.07	.44	.06	.11	.31	.23	235
property	.05	.17	.40	.06	.31	.13	129
traffic	.07	.05	.05	.46	.36	.35	352
others	.09	.11	.13	.19	.48	.31	219
	.08	.18	.11	.25	.37		
N	82	185	116	257	379		1,019

Table 6: Transition matrix for British convictions

Initial crime-type	subsequent crime-type					N
	violent	fraud	property	traffic	others	
violent	.34	.04	.42	.10	.10	207
fraud	.06	.22	.62	.06	.05	87
property	.09	.04	.75	.05	.08	1,540
traffic	.09	.05	.43	.32	.11	109
others	.12	.04	.57	.10	.17	166
N	240	95	1,430	155	189	2,109

Table 7: Standardized deviates from independence (West-German data)

K	initial crime-type	final crime-type					chi ² df=16	Ø= chi ² /N
		violent	fraud	property	traffic	others		
1	violent	.6	.5	-1.4	-1.3	1.3	234.8	.43
	fraud	.8	7.3	-1.5	-3.9	-1.1		
	property	-4	.3	8.7	-3.5	-1.2		
	traffic	-3	-4.8	-2.8	5.3	-.1		
	others	-7	-1.0	.8	-1.4	2.1		
2	violent	2.2	-.2	-.3	-.1	-.6	78.5	.31
	fraud	-1.4	4.5	-.6	-1.8	-1.2		
	property	-.8	-.4	4.4	-1.4	-.6		
	traffic	-1.1	-1.9	-1.0	2.5	.7		
	others	1.3	-2.4	-1.3	.8	1.3		
3	violent	1.6	-1.0	.2	.7	-.7	26.5	.19
	fraud	-.1	2.9	-1.5	-1.0	-.2		
	property	-.4	-.1	1.4	-1.1	-.1		
	traffic	-.4	-.7	-1.4	.6	1.2		
	others	-.2	-1.2	1.0	.7	-.3		
4	violent	-.2	.9	-.7	.7	-.4	19.3	.23
	fraud	-.7	1.4	-.7	-.2	-.1		
	property	0.0	-.5	2.6	-1.0	-.8		
	traffic	.1	-1.4	-.1	1.4	.3		
	others	.5	-.1	-.9	-.4	.6		
all	violent	2.0	.2	-1.4	-1.7	.3	358.0	.35
	fraud	-.4	9.3	-2.3	-4.3	-1.5		
	property	-1.0	-.3	9.6	-4.3	-1.2		
	traffic	.5	-5.6	-3.8	7.9	-.2		
	others	.6	-2.5	.6	-1.8	2.6		

K: Transition sequence

Table 8: Standardized deviates from independence (British data)
($\chi^2=331.129$; $\phi^2=.157$)

Initial crime-type	final crime-type				
	violent	fraud	property	traffic	others
violent	9.6	-0.4	-4.5	1.5	0.6
fraud	-1.6	7.6	-0.6	-0.6	-1.4
property	-3.0	-1.5	3.2	-3.3	-1.3
traffic	-0.7	0.0	-3.1	9.5	0.7
others	0.3	-0.5	-1.7	1.1	3.7

It should also be noted that χ^2 -values are dependent on the total number of observations. The same transition pattern will have a higher χ^2 -value if the total is larger. This is because the numerator increases with the square of N , while denominator increases with N . To correct for this, the measure $\phi^2 = \chi^2/N$ is sometimes used, and the values for ϕ^2 are also given. We see that the transitions tend towards independence up to the third transition. (The higher ϕ^2 -value for the fourth could be the result of fluctuations and because the cell values are small.)

Turning now to the British data, we find there are four non-diagonal deviates that are relatively large (and negative). These involve the transitions between property offences on the one hand, and violent and traffic offences on the other hand. That is, **transitions between property and violent offences**, as well as **between property and traffic offences are less frequent** than would be expected from a **random pattern**. This in turn implies that property offences are distinctly different from both violent and traffic offences, a pattern **very similar to that found in the German data**.

The deviates in the diagonal cells tend to be large and positive in all cases. This implies that there is a tendency to be convicted again for the same offence. In the following section this issue of possible specialization will be explored, but first we would like to explore the issue of possible escalation or de-escalation in seriousness or if there are any groupings. To examine this, we need to test for the **quasi-independent model**, i.e., with the diagonals omitted. This is necessary in order to avoid the confounding effect of the diagonal values with the values in the other cells in the same row or column.

The standardized deviates from the expected values under quasi-independence are presented in table 9 for the German data and in table 10 for the British data along with the χ^2 - and ϕ^2 -values for each matrix. We see that the quasi-

independent model can be accepted for transitions 2, 3 and 4 for the German data **and** for the British data. For the German data, it can be accepted for the first transition only at the .02-level, and it has to be rejected for the table of all transitions, but probably because the total is much higher. Looking at the ϕ^2 -values, we see it actually increases with k , and is lowest for all the transitions together. This would suggest that in fact, **non-diagonal transitions conform to the Independence model**, a result found in arrest data, fairly consistently in the studies cited previously.

Examining the largest deviates for the German data first, we find that the quasi-independent model reveals a strong positive relationship between property and fraud, suggesting perhaps that these two do indeed form a group. This was not seen in the previous model because of the effect of the diagonals. The second observation is that there is again a negative association between traffic and fraud, reinforcing the idea that they are quite dissimilar. There are no significant escalatory transitions, and together with the finding that these non-diagonal transitions are close to independence, this suggests a **general lack of escalation**. Again, this agrees with most of the previous studies with arrest data.

Escalation is also absent in the **British data** (table 10). The transitions conform quite closely to the quasi-independent model and the deviates do not indicate any escalatory tendencies. As with the German data, there appears to be a positive relationship between fraud and property offences. Fraud is negatively related to violent offences and "others". We also find a positive relationship between violent offences and traffic offences. It could be that a common factor (e.g. alcohol/reckless temperament) precipitates both these offences, since we observe the same positive (but weaker) relationship in the German data, but that of course cannot be confirmed here.

Table 9: Standardized deviates from quasi-independence (West-German data)

K	Initial crime-type	final crime-type					chi ² df=11	Ø= chi ² /N
		violent	fraud	property	traffic	others		
1	violent	-	1.1	-1.1	.4	-.4	20.8	.07
	fraud	.9	-	.3	.1	-.7		
	property	-.3	2.8	-	-1.0	-.7		
	traffic	.1	-1.8	-.3	-	1.0		
	others	-1.2	-.3	1.5	.4	-		
2	violent	-	1.2	.3	.2	-.9	12.5	.08
	fraud	-.7	-	1.2	-.4	.1		
	property	-.4	1.6	-	-.8	-.2		
	traffic	-.8	-.6	-.3	-	.8		
	others	1.2	-1.1	-.8	.7	-		
3	violent	-	-.4	.8	1.1	-.8	8.0	.09
	fraud	.7	-	-.6	-.3	.2		
	property	.1	1.2	-	-.7	-.2		
	traffic	-.1	.3	-1.1	-	.5		
	others	-.4	-.6	.6	.1	-		
4	violent	-	.9	-.5	.8	-.7	6.2	.13
	fraud	-.7	-	0.0	.3	.2		
	property	.3	.3	-	-.6	0.0		
	traffic	.1	-1.2	.7	-	.4		
	others	.2	.1	-.2	-.2	-		
all	violent	-	1.7	-.8	1.1	-1.2	29.8	.05
	fraud	.5	-	.3	0.0	-.3		
	property	-.5	3.3	-	-1.7	-.5		
	traffic	.6	-2.0	-1.1	-	1.2		
	others	-.7	-1.1	1.4	.4	-.9		

Table 10: Standardized deviates from quasi-independence (British data)
($\chi^2=14.76$; $\phi^2=.018$)

Initial crime-type	final crime-type				
	violent	fraud	property	traffic	others
violent	10.7	-0.2	0.8	1.9	0.3
fraud	1.4	7.5	1.5	-0.4	-1.6
property	0.5	0.3	23.1	0.9	0.1
traffic	0.2	0.4	-0.3	10.3	0.7
others	-0.1	-0.8	0.1	0.6	2.2

3. The Markovian model for conviction careers and specialization

To explore the issue of how much subsequent convictions depend on the past career, it is necessary to see how well the transitions conform to a **Markov-model**.⁹ Crime careers in this perspective are looked upon as a series of events (= criminal events) following each other over a certain time period. We may assume now that each event probability in the chain is dependent from the one preceding it or we may hypothesize that transition probabilities are independent from those found earlier in the career. The Markov-model **assumes** that **current transitions are not influenced by the past**, i.e. prior convictions. This assumption has the important implication that prior record does not help at all in predicting future criminality. The assumption that any transition in the line is independent from all others preceding it cannot be directly tested by only testing for independence in the individual transition matrix. Markovianness can be **indirectly inferred** if all successive transition matrices are independent and if they are all identical to each other, a test employed in Wolfgang et al. (1972). Anyone of these conditions by itself does **not necessarily prove** that the process is Markovian. In fact, it is possible for transition matrices to be quite stable and quasi-independent, but not Markov.¹⁰

The **direct test for Markovianness** is that

$$(P_{12})^2 = P_{13}$$

⁹ See Kemeny and Snell 1960.

¹⁰ See Moitra 1980.

where P_{12} is the first transition matrix, and P_{13} is the two-step transition matrix from the first conviction to the third conviction. The matrix $(P_{12})^2$ represents the expected two-step transition matrix, i.e., the transition from the first to the third conviction. The matrix P_{13} is estimated directly from the data, and represents the two-step transition that is actually observed. This test can only be done with the German data since we have only a one-step transition matrix for the British data. The χ^2 -test can be used to compare the two matrices, and the results (for the German data) are shown in table 11. The χ^2 -value of 38.73 with $df=20$ means that the Markov-model is just rejected at the .01-level (critical value: 35.57). However, the Markov-model can be accepted at the .005-level. This suggests that **the process is only marginal Markovian**. In other words, **past crime-type does influence future crime-types**, although this influence should not be considered to be very strong.

Table 11: Components of the chi-value in the test for Markovianness

initial crime-type	final crime-type				
	violent	fraud	property	traffic	others
violent	1.41	1.87	.19	.17	1.74
fraud	.37	.62	2.66	.03	.01
property	.14	3.17	.97	.91	.26
traffic	.10	3.68	2.59	5.44	.24
others	1.22	1.27	3.79	.40	5.48

This is at variance with most past findings but in those cases the direct test was not conducted. In the only other direct test,¹¹ the Markov-model was rejected, but only because of specialization (diagonal values), and indeed, in **the course of a career, the process was found to become more Markovian**. The fact that transitions among convictions are not more Markovian than transitions among arrests, suggests that **police practices do not introduce a bias towards homogeneity** (by rearresting a person for the same crime) as has been hypothesized by Hood and Sparks (1972).

11 See Moitra 1980.

4. Specialization in crime-types

We have previously noted that transitions among the same crime-type tend to be relatively more frequent, suggesting at least some specialization. However, to explore the issue of specialization further, we need to consider **several measures of specialization** because there are different ways of considering specialization, and each point of view reveals a somewhat different aspect of specialization in the different crime-types. In this section we concentrate on the **relative degree of specialization** among the crime-types, rather than the absolute value of any particular measure. Such an approach will enable us to compare specialization between different crime-types.

Three different measures are used to **estimate the extent of specialization**. First, we estimate the ratio of the observed frequency to its expected value under independence (**R**). If there was no specialization, the ratio would be 1. Values greater than 1 imply some specialization, while values less than 1 imply avoidance of that crime-type in the future. The second estimate we use has been developed by Haberman (1973) and has been used to measure specialization in Bursik (1980) and Rojeck and Erickson (1982). This is the adjusted standardized residual, where the usual standardized residual is adjusted for marginal inhomogeneity by dividing the standardized residual by an adjustment factor. It is given by

$$A = \frac{(OBS-EXP)/SQRT (EXP)}{SQRT ((1-n_i/n_{..})(1-n_{.i}/n_{..}))}$$

The third measure was developed by Goodman (1969) to estimate persistence of status in social mobility tables. Persistence in our context corresponds to specialization and this measure (**P**) estimates the difference between the theoretical tendency to have a subsequent conviction for type i , (r_i), and the observed proportion, (p_{ii}), of individuals with a subsequent conviction for i among all who had a previous conviction for i . This difference is normalized by $(1-r_i)$, since the maximum value p_{ii} could take is 1. Thus no specialization would result in $P=0$, while $P=1$ would indicate complete specialization. We estimate these specialization measures for the German data using the matrix of all transitions. The estimates are given in table 12, and the rank-ordering of the crime-types in table 13. The results for the British data are given in tables 14 and 15 resp.

Table 12: Specialization measures by crime-type (West-German data)

crime-type	specialization measures		
	ratio (R)	adjustment (A)	persistence (P)
violent	1.69	2.17	.023
fraud	2.41	11.77	.349
property	3.44	10.91	.326
traffic	1.83	11.29	.357
others	1.28	3.71	.019

Table 13: Rank-ordering of crimes by degree of specialization (West-German data)

ratio (R)	adjustment (A)	persistence (P)
property	fraud	traffic
fraud	traffic	fraud
traffic	property	property
violent	others	violent
others	violent	others

In table 12, the "R" values for traffic are probably underestimated because of its large marginal, and the value for property offences is overestimated because of its small marginal. These are adjusted in the values for "A", as can be seen in the next column. Similarly, others and violent offences switch places after a similar adjustment for marginal inhomogeneity. The ranking according to the measure "P", is also similar to these two. In general, we find relatively **more specialization for fraud, property and traffic offences and less for violent offences and others.**

The reconviction patterns in the **British data** (tables 14 and 15) show a **similar specialization for property and traffic offences** when we consider the measures "A" and "P". However, whereas the German data indicated relatively greater specialization in fraud, the British data indicates relatively greater **specialization in violent offences** instead (the high value of "R" for fraud should be ignored since it is due to the very small marginal values for fraud).

Table 14: Specialization measures by crime-type (British data)

crime-type	specialization measures		
	ratio (R)	adjustment (A)	persistence (P)
violent	2.97	10.74	.162
fraud	4.87	7.94	.137
property	1.10	11.25	.608
traffic	4.37	10.14	.203
others	1.95	3.68	-.029

Table 15: Rank-ordering of crimes by degree of specialization (British data)

ratio (R)	adjustment (A)	persistence (P)
fraud	property	property
traffic	violent	traffic
violent	traffic	violent
others	fraud	fraud
property	others	others

Comparing these results with those reported in Bursik (1980), which is a reanalysis of the data in Wolfgang et al. (1972), we find that offenders there specialized least in personal injury offences, comparable to our finding of low specialization in violent offences in Germany. There was a significant specialization in property offences, just we have found in both Germany and the United Kingdom, but in contrast to our finding of low specialization in "others", Bursik found high specialization in this category. However, this difference could also reflect differences in the crimes included in this category.

5. Prediction of criminality

Turning now to the problem of **predicting crime** we may consider two key questions about future criminality. These are:

- how many crimes will an individual commit in the future?
- **what type of crimes** will an individual commit in the future?

Based on the observed patterns of transitions, we finally assess the predictability of these two aspects. This will be done by comparing expected numbers of convictions with observed mean numbers of convictions basing expected values on the assumption that the sequence of convictions after having started with a given offence will conform to a simple Markov chain.

If the **transitions are Markovian**, then the expected number of convictions, given the initial conviction is given by the matrix

$$N = (I-G)^{-1}$$

where I is the identical matrix and G is the matrix of transition probabilities in a summary matrix where the **probability of no further conviction** and thus being absorbed into the state of desistance, is also included.¹² The probability of ever being convicted for a type j crime, given conviction for a type i crime can be obtained from the matrix

$$H = (N-I) D^{-1}$$

where D is the diagonal matrix of N.¹³

Analysing the Philadelphia cohort data by comparing matrices of expected means of arrest based on the assumption of a simple Markov chain and observed means of arrests Figlio found support for the conclusion that delinquent careers in fact conform to a Markov chain and that arrest data are adequately represented by a simple Markov chain. This means that the probability of committing an offence or being arrested for a certain offence is independent of the type of offences preceding the instant offence. It follows that knowledge about the number and the nature of prior offences (arrests) does not help in predicting future states of delinquent behavior.

¹² See Figlio 1981.

¹³ See Figlio 1981.

The estimated values of N and H are displayed respectively in tables 16 and 18 for the German data and tables 17 and 19 for the British data. The expected number of convictions (about 2) in each case is considerably lower than the corresponding values for the expected number of arrests which lies between 3 and 4 in the study of Figlio (1981). The difference between convictions and arrests is also reflected in much higher desistance rates in the case of convictions (about .6 for convictions and about .3 for arrests). The largest values are along the diagonals as Figlio found as well, and in fact the values for comparable crimes in the German and British data as well as in the study of Figlio are rather similar. For example, the diagonal values for violent offences (1.15 for West-Germany and 1.23 for the United Kingdom) are close to the value of 1.25 that Figlio found for "injury" offences. He found that the expected number of thefts after a theft to be 1.58, and we find similar values (1.38 for West-Germany and 1.78 for the United Kingdom) for property offences. Figlio however does not have the categories fraud, traffic offences or "others".

Table 16: Expected number of convictions in a career (West-German data)

initial crime-type	subsequent crime-type					total*
	violent	fraud	property	traffic	others	
violent	1.15	.25	.11	.22	.40	2.17
fraud	.088	1.69	.18	.27	.64	2.86
property	.08	.33	1.38	.21	.55	2.55
traffic	.02	.054	.03	1.13	.19	1.42
others	.10	.14	.076	.22	1.42	1.96

* Mean number of convictions from the first offence in the sequence to absorption.

Table 17: Expected number of convictions in a career (British data)

initial crime-type	subsequent crime-type					total*
	violent	fraud	property	traffic	others	
violent	1.230	.042	.491	.089	.092	1.944
fraud	.086	1.142	.659	.067	.060	2.014
property	.116	.054	1.78	.070	.087	2.108
traffic	.045	.020	.251	1.101	.050	1.467
others	.120	.043	.602	.089	1.123	1.977

* Mean number of convictions from the first offence in the sequence to absorption.

Table 18: Probability of ever being convicted for a given crime-type (West-German data)

initial crime-type	subsequent crime-type				
	violent	fraud	property	traffic	others
violent	.133	.147	.076	.192	.278
fraud	.076	.408	.130	.236	.447
property	.066	.193	.276	.181	.388
traffic	.019	.032	.021	.118	.132
others	.084	.083	.055	.192	.298

Table 19: Probability of ever being convicted for a given crime-type (British data)

initial crime-type	subsequent crime-type				
	violent	fraud	property	traffic	others
violent	.187	.037	.275	.081	.082
fraud	.070	.125	.370	.061	.054
property	.094	.040	.439	.064	.078
traffic	.037	.018	.141	.092	.044
others	.097	.037	.338	.081	.110

The probabilities of ever being subsequently convicted for a given crime-type are also quite low, as can be seen in tables 18 and 19. This is again a reflection of the high desistance rates. However, the transition patterns in West-Germany and the United Kingdom indicate slightly greater specialization in general, with the diagonal element almost always the highest in any column. The only exceptions are traffic offences and "others" in the case of West-Germany.

Although there exist some deviations, in general the values predicted by the Markov-model coincide with observed values. Deviations occur in the German data with respect to fraud and property offences, in the British data with respect to property offences. Obviously conviction data are to some extent deviating from arrest data. These differences are likely to be inferred through sentencing strategies or public prosecutor's decision making suggesting that the probability of being prosecuted and sentenced is greater in the case of repetition of certain offences.

But nonetheless, observed probabilities in unselected samples of convicted offenders in both jurisdictions

- do not deviate to a substantial degree from independence and
- are in general very low.

Together these findings lend further support to the assumption that prior record does not help in predicting

- how many crimes an individual will commit and
- what type of crime an individual will commit in the future.

6. Conclusions

This analysis of **transitions among crime-types** in successive convictions suggests that these transitions **conform to the quasi-Independent model**, and the deviations show **no systematic patterns or trends**. There does appear to be **some specialization**, at least for **property and traffic offences**. There was absolutely no indication of escalation in seriousness over a career, nor were there significant groupings among the crime-types, except for a slight similarity between property offences and fraud.

The finding that the transition matrices are close to quasi-independence suggests that **prior records are not very good predictors of future convictions**. Thus, they provide **little guidance** for developing **sentencing policies** that seek to take **incapacitation or special deterrence** into account. The only indication of predictability that was found was the finding of some specialization in crimes, particularly in property crimes. This holds true for both samples, the West-German as well as the British.

The desistance rates were generally quite high, i.e., the probability of a subsequent conviction is rather low, and the expected number of future convictions is small. This again implies that the incapacitative effect of prison sentences (in terms of averting future convictions) would not be very large, at least for criminals having careers similar to those in this sample. In other words, pursuing incapacitation in a sample such as the one studied would mean that large numbers of convicted offenders had to be included into incapacitating strategies which in turn must result in enormous costs, both in terms of financial costs as well as human costs.

It should be noted that we have considered only **unconditional matrices**, that is, the transitions were not disaggregated according to prior conditions like age, or the kind of punishment an offender received after a prior conviction. It could be that transition patterns are different at different ages or following different punishments. Further research is required to investigate this and also to investigate the relationships between the times between convictions and crime-types.

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Aspects of the Recidivism of Career Offenders According to Different Forms of Correction and Release from Prison

Frieder Dünkel , Bernd Geng

1. Introduction

Offenders who have been repeatedly recidivous, also referred to as career or chronic offenders, are increasingly being recognized as a problem in the Federal Republic of Germany as well. Several longitudinal studies¹ and special evaluations based on police crime statistics² have revealed that a small group of offenders accounts for a considerable proportion of criminal events. In the light of the repeated failure of efforts aimed at resocialization or deterrence, we are inevitably confronted with a number of questions. Aside from the problem of identifying dangerous recidivists and the issue of whether penalties should be increased in cases of recidivism (the aspect of "incapacitation"), we are faced above all with the question of how adequate treatment can be provided for prisoners with a view to their rehabilitation, the latter aim being envisaged by German Prison Law (StVollzG) as the sole objective of correctional measures (cf. 2).

The present study is concerned with investigating the **course taken by the registered criminal careers** of a random sample of 510 inmates who were serving sentences at the Tegel Prison in Berlin at the beginning of the 1970's. The inmates in question were 33 years old, on average, at that date of release from prison. They are what is known as "**career offenders**", had at least three previous of-

1 For the Federal Republic of Germany, see above all the studies conducted by Steffen and Czogalla 1982; Weschke and Krause 1983; for a comprehensive presentation of previous approaches to longitudinal studies, see Kaiser et al. 1986, p.164 et seq.

2 See Landeskriminalamt Nordrhein-Westfalen 1985; Weber 1985 (on Hamburg).

fences on their record, and were serving a new sentence of at least one year between 1971 and 1974.

The first aim of the study is to furnish a purely descriptive longitudinal account of the **official career** looking at its **beginning, duration** and, possibly, **discontinuation** paying special attention to **different conditions of imprisonment and release** (social therapy, regular prison, parole, aftercare by a probation officer etc.). An observation which is also evident from prison statistics,³ namely, that criminal careers are often terminated between the ages of 30 and 40, was used as a starting point. On this basis, the study focused on the question of whether and, if so, under which circumstances a discontinuation or at least a weakening of the criminal career can be observed in this highly select and extreme group with numerous previous convictions.

The observation period after release from prison between 1971-1974, averaged 10 years. All the data recorded in prisoners' files, including the court sentences and the extracts from the register of convictions with regard to new sentences were consulted for the study.

2. The subject of the investigation - sample and forms of institutional treatment studied between 1971 and 1974

The 510 career offenders under study can be divided into the following sub-samples:

- Prisoners released from a special **therapeutic treatment unit** (social therapy), N = 160.
- Prisoners who, having participated in a therapy programme for at least 3 months, had been **withdrawn** either because of a lack of therapy motivation or breach of the regulations (escape while on prison leave etc.) and subsequently released from regular prison, N = 27.
- Prisoners released directly from **regular prison**, N = 323.

The sample was collected from the **Tegel Prison in Berlin**, the largest prison in the country. At the time of collection, it had an average of about 1,400 inmates on each computation date. The department for social therapy, which could accom-

³ On the development and structure of the German correctional system, see Dünkel and Rosner 1982; 1982a, p.308 et seq.; Kaiser, Kerner and Schoch 1982.

modate 230 persons in those days,⁴ is located inside the prison complex but separated from the rest of the prison proper by an internal wall. The three wings of a building which is built in the style of the 19th century are reserved for regular prison.

A special social therapeutic treatment unit was introduced in Tegel Prison in 1970. The sample under study is thus the product of the first four years of this experiment which, during the period in question, was still characterized by a variety of shortcomings in the organization of the treatment program on the one hand, and by the enthusiasm and outstanding commitment of the collaborators on the other.

From the outset, the theoretical starting point of the **treatment concept** was strongly oriented towards learning theory. Correspondingly, the entire confinement period was divided into what was called learning and training areas. In the first phase (approx. 6 months) treatment focused on the intra-prison area which was rearranged according to the requirements of milieu therapy by creating open living groups (i.e., unlocked cells, normal clothing, free communication etc.). At a more advanced stage of the period of confinement, special emphasis was placed on extended **contact with the outside world** by means of prison leave for one or several days and prison visitations; in the final phase of treatment, preparation for release took the form of work release (i.e. work and free-time until 9 p.m., as a rule, outside of the institution).⁵ Apart from these generally valid outline conditions, three treatment models could be distinguished. One focused on individual and group therapy administered according to various schools of psychology, the second offered schooling and training programmes in addition to individual or group discussions with social workers, and the third placed emphasis on social-practical training courses in problem- or task-related areas such as handling money, free-time, partnerships, alcohol and drug problems.⁶ The ratio of therapy personnel to clients was about 1:15 and was thus much more favorable than under conditions of regular prison where one psychologist or social worker is sometimes responsible for up to 100 inmates.

4 For a more detailed description of the treatment unit and the social therapy treatment program see Dünkel 1980, p.76 et seq.; Dünkel and Johnson 1980, p.233 et seq.; in the meantime, the facilities at the Tegel Prison, which were very cramped in parts, have been improved and the cells correspondingly enlarged. As a result, only 185 places are presently available for social therapy.

5 This milieu therapeutic re-organization is similar in all 11 federal social therapy units. For a comprehensive presentation, see Kaiser, Dünkel and Ortmann 1982, p.198 et seq.; Egg 1983, p.49 et seq.; Egg 1984.

6 Since, within the framework of earlier studies, the three treatment models did not differ with respect to recidivism (see Dünkel 1980, p.256 et seq., p.346 et seq.), and given that the cases from the sample of career offenders would otherwise have been too few, the three groups were combined in the experimental group. At a later stage in the study, differentiated analyses of the individual treatment models will be carried out.

A number of **social- and legal-biographical features** characterize the **total sample** studied here. From the social-biographical point of view, the problem profiles known from other studies conducted in the Federal Republic of Germany have been confirmed.⁷ 79% of those studied come from a working class background, one-third experienced one or more changes in the person chiefly responsible for their education, most often owing to the divorce of the parents. In 45% of the cases, there was record of serious problems of upbringing in the home; 89% had attended at best a secondary modern school (junior high), 43% were not in possession of a school-leaving certificate, and 53% had not successfully completed any form of vocational training. 41% had spent part of their childhood in community homes, two-thirds of them in two or more homes and the stay at the community home, which began on the average at the age of 11-12, lasted for a period of five years.

At the time of arrest, only 19% were married, another 7% were in a steady relationship, and one-third were divorced. 41% could be characterized by labels such as: "the subject lives in unstable circumstances" and no less than 35% of the subjects had a record of considerable problems with alcoholism. 54% had been unemployed or had had irregular employment before they were arrested in the period of 1971-1974.

The choice of the sample already implies that, from the **legal-biographical** viewpoint, the career offenders under study had a considerable handicap in the expected direction. We are dealing, here, with men who at the time of release were on average 33 years of age, had served up to 33 prison sentences for previous offences (mean: 5.4) and showed an average prison experience of 50.5 months (median: 38.9 months). 88% of the convicts had been sentenced at least once for property offences, 51% for fraud and similar offences, 31% for bodily injury, 14% for sex offences and 13% for robbery. At the same time, 51% had an additional previous record of traffic offences. The current term of imprisonment in the period of 1971-1974 was based on 1-3 prison sentences and sometimes included revoked release on probation or fines (imprisonment for failure to pay a fine). The average sentence to be served in the study period was 33.0 months (median: 27.1). An analysis by offence gives the following picture:

Two-thirds (66%) of the convictions were for property offences (54%), or fraud and similar offences (12%), 11% for robbery and another 8% for sex offences. By contrast, bodily injury (5%) and traffic offences (4%) as well as homicide (2%) played, only a subordinate role.

A comparison of the three sub-samples revealed no significant differences with respect to **social-biographical** features. With regard to the **legal-biographical** data, the members of the social therapy group were more likely to have been

7 On the Tübinger study of juvenile offenders, see, for example, Göppinger 1983.

sentenced for fraud and robbery whereas in the control group, property offenders were slightly over-represented. Prison experience up to the date of release in the period 1971-1974 was almost identical in all three groups - an average of 7 years. In the case of those assigned to social therapy, the current sentence was somewhat longer (41 months on average vs. 29 months in regular prison) but the term of imprisonment already served for previous offences was correspondingly shorter (41 vs. 55 months).

By and large, it becomes clear from the three sub-samples that the picture of the registered career offender is often, and to an appreciable extent, characterized mainly by persons with previous records of property offences and violent crimes.⁸

3. Recidivism according to different forms of correction

The present study investigates **recidivism** in terms of new court sentences after a **risk period** of an average of **10 years**. The **recidivism criterion** is **problematic** in many respects since it can only give limited information about the real behavior of the persons in question (the dark field problem) and ignores important dimensions of social integration (family, neighborhood, place of work etc.).⁹ However, the criterion of recidivism is of special importance in the present study because we are dealing with a highly select, extreme group of persons who have repeatedly come into contact with the agencies of the penal justice system and the prison system and whose further criminal career is to be observed especially from the point of view of re-imprisonment. In view of the numerous previous convictions of this group and the risk period which is much longer than those of the investigations conducted hitherto in this field,¹⁰ it would be warranted to expect a re-conviction. However, it is precisely with treatment methods such as social therapy, and conditional release as practiced in normal confinement, that expectations, at least with regard to the avoidance of subsequent terms of imprisonment, are associated. Moreover, it is imperative to observe the intensification or weakening of the criminal career over relatively long periods.

⁸ The proportion of violent crimes in the Federal Republic of Germany seems to be lower than that of the USA. See Miller et al. 1982, p.37 et seq.; also see Petersilia et al. 1977; Kaiser 1985, p.156 et seq.

⁹ For a comprehensive presentation of the problem of the recidivism criterion, see Kaiser 1985a, p.89 et seq.; for practical reasons such as the relative ease with which data can be obtained, most of the recidivism investigations in the Federal Republic have been limited to the criterion of recidivism (i.e. re-convictions). For a more comprehensive presentation, see Berckhauer and Hasenpusch 1982, p.281 et seq.

¹⁰ The risk period for recidivism studies in the Federal Republic is generally three to five years.

For our purposes, the **recidivism criterion was thus differentiated** according to several aspects such as the **type** and the **seriousness** of the offence as well as the **time interval**. First of all, several definitions of recidivism (r.d.) were distinguished. The first definition (r.d.1) covers all new sentences including those handed down for relatively petty offences. R.d.2 excludes all minor cases of re-conviction (up to a three-month prison sentence or fines of 90 day-fine units). This limit was drawn because sentences of this kind are not recorded in a police certificate of good conduct, nor is the person affected required to reveal them as previous convictions to an employer etc.¹¹ R.d.3 counts only new sentences to imprisonment without probation as recidivism. In other words, this definition measures the proportion of new terms of imprisonment. A further distinction is made with respect to new terms of imprisonment of at least 12 months. This criterium was chosen since, in comparison with the last prison sentence served in the period 1971-1974 (a minimum of one year), a weakening of the criminal career could be observed. The last recidivism criterion, conviction as a recidivist according to §48 of the old version of the German Penal Code, refers to a peculiarity of German Penal Law which was repealed in 1986.¹² According to the laws in force during the survey period, an offender was to be given a minimum sentence of 6 months if, having been sentenced for a wilfully committed punishable offence at least twice within the last five years (including one to at least three months without probation), he had then committed the **same type of offence** and had thus not taken the earlier sentences as a warning.

If we first take a look at the **general recidivism quotas** of the entire sample, it becomes clear from Figure 1 and Table 1 that **86%** had been **re-convicted at least once** in the 10 year period. Moreover, just about **64%** had even received such heavy sentences that a **new term of imprisonment** had to be served. 53% had to return to prison for over a year because of new prison sentences.

In some cases, a **differentiation** between the **treatment unit** and **regular prison** brings major differences to light. Although only relatively minor differences (8%) appear in favor of social therapy if we include all of the sentences (r.d.1),

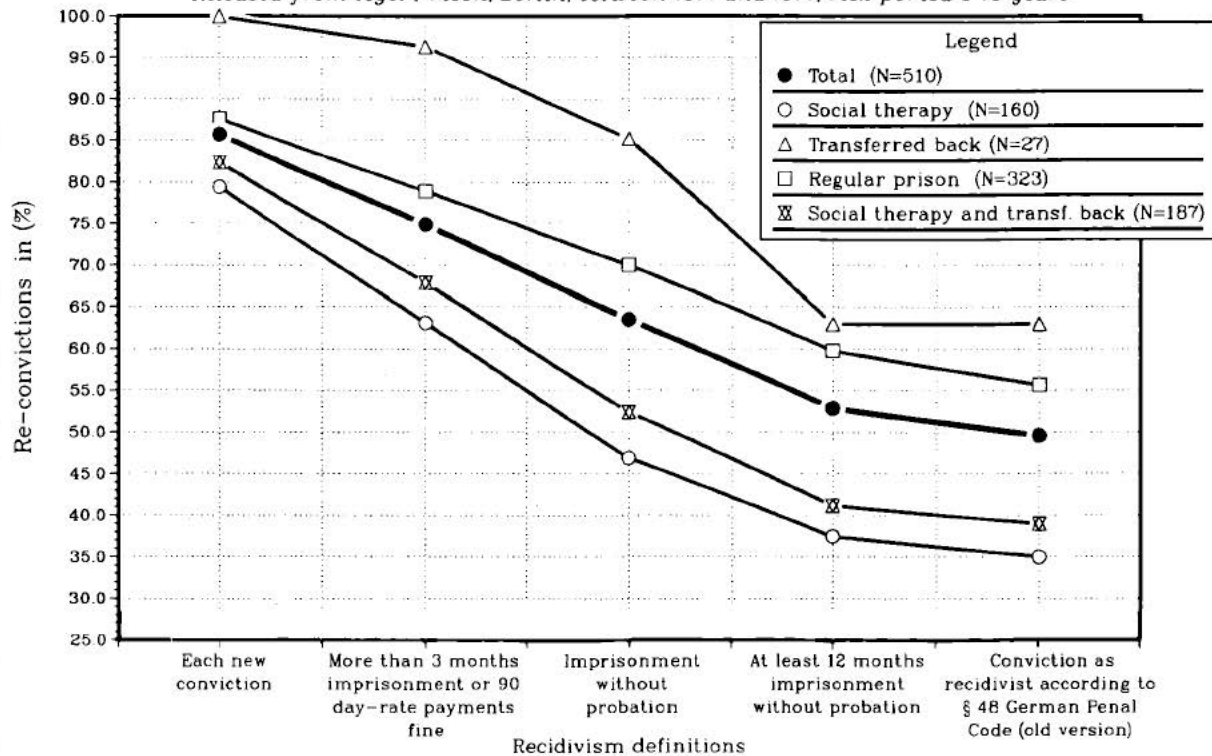
11 According to §53 of the Bundeszentralregistergesetz (Federal Law on the Central Register for Judicial Records), a convict may claim to have no previous record as far as convictions which are not registered in the police record of good conduct are concerned. According to §32 II No. 5, fines of up to 90 day-fine units and sentences of up to three months imprisonment, are not included in a police record of good conduct.

12 According to the grounds given in the legislative material, a minimum sentence of six months in cases of petty offences is not appropriate to the degree of culpability. See Bundesrats-Drucksache 370/84, p. 10; the law was repealed by means of the 23rd Strafrechtsänderungsgesetz (amending law) of the 13.4.86, Bundesgesetzblatt 1986, Section I, p.391 et seq.

Diagram 1

Re-convictions of career offenders released from different forms of correction

Released from Tegel Prison, Berlin, between 1971 and 1974, risk period 10 years



the differences increase to 16% in the case of r.d.2, and even to 23% in the case of r.d.3 respectively r.d.5 and to 22% for r.d.4. Even if one were to apply a particularly strict "measure of success" by adding those who were transferred back to regular prison to the group of those who had undergone social therapy, the percentage differences remain significant.¹³ The percentage differences in recidivism in favor of social therapy are thus 5%, 11%, 18%, 19% and 17% according to recidivism definitions 1-5, respectively.

An analysis of the most serious **offence** responsible for terms of imprisonment between 1971 and 1974, revealed only minor differences for the entire sample with regard to subsequent recidivism. As expected, property and fraud offenders were more frequently re-convicted than subjects sentenced for robbery, bodily injury or sex offences.¹⁴ The proportion of new terms of imprisonment (r.d.3) could be distributed by offences as follows: property offences 69%; fraud 64%, robbery/blackmail and similar offences 57%, bodily injury (N = 24) 54%, sex offences (N = 41) 51%, and traffic offences (N = 19) 68%.

With regard to the individual sub-samples, the following picture emerged.

The **general differences** between the treatment unit and regular prison **remain**, even when the **offence structure** is observed. Differences in the proportion of new terms of imprisonment were very high for property offences (51% vs. 74% in the regular prison) and especially high for robbery (30% vs. 76%) and, despite the relatively small sub-groups in the latter case, these findings are statistically significant.¹⁵ Less pronounced were the differences in the rates of re-imprisonment for fraud and similar offences (54% vs. 69%) and for sex offences (42% vs. 52% in regular prison). If bodily injury, homicide and sex offences were combined as violent crimes against the person, the result with regard to new terms of imprisonment after release from social therapy would be 41% compared with 59% in the case of inmates released from regular prison.¹⁶

Altogether, observation of the offence structure confirms that having served a term either in the treatment unit or in regular prison, persons imprisoned for property offences and fraud have a greater tendency to pursue their prison career than,

¹³ On the methodological problems of this study, see in particular Dünkel 1983, in addition to an earlier publication Johnson and Dünkel 1981, p.3 et seq. The discussion being carried out on method - also against the background of rather disappointing findings from Anglo-American studies - is summarized by Kury 1983, 1986; For a meta-evaluation of available studies, see Lösel and Kofler 1987: Lösel, Kofler and Weber 1987.

¹⁴ On this point, see Dünkel 1981, p.279 et seq. The findings concur with those of other investigations and not only with the results of German recidivism studies.

¹⁵ In the case of robbery, 7 of the 23 clients released from social therapy were re-imprisoned compared with 22 of the 29 released from regular prison. This difference is statistically significant at the 1% level.

¹⁶ Because of the small sample (N = 27 for social therapy and N = 44 for regular prison), it was not possible to obtain statistically significant differences.

for example, those who were sentenced for violent and sex offences.¹⁷ However, it is precisely the particularly high-risk offenders - property and robbery offenders - who seem to profit especially from social therapy.

With respect to subsequent **recidivism, no significant relations** could be established with the subjects' **pre-institutional biography**. In other words, handicap factors from their youth and childhood (relating to the family, school and work) declined in importance with the duration of the (criminal) career (the average age of the sub-sample was 33 years on release). Furthermore, in cases where positive preconditions could be observed, variables pertaining to the period directly before detention at the beginning of the 1970's (living, working conditions, financial and family situation) also correlated only weakly with a lower recidivism quota.

In contrast, **significant relations** were established with certain **imprisonment variables**. The more frequently inmates were allowed **prison leave for one or several days, or work release**, the **lower** was the **re-conviction quota**. Moreover, the **preparation for release** with the collaboration of external prison helpers in conjunction with relatively frequent **prison visitations** suggest **positive effects**. Measures such as prison leave for several days and better preparation for release, are an essential feature of social therapy. The total prison leave - whether for one or several days at a time - awarded to prisoners released from social therapy, was three times as high (mean: 26.6, median: 20.9 days) as that received by inmates in regular prison (mean: 9.7, median: 7.1 days). In the course of the study, work release, that is, daily work outside the institution with full pay implemented as a transitional measure in the final months before release, was provided for **only** in social therapy.¹⁸

Changes in the family situation, for example **divorce** or **marriage** during imprisonment were, by contrast, insignificant. The same goes for the **judgement given on the prisoner in regular prison** (with respect to social conduct towards prison personnel and fellow prisoners as well as conduct at work). The situation was, however, **different in social therapy** where, on the one hand, prisoners were, on the average, **judged more favorably** with time and where, on the other hand, this judgement acquired considerable **prognostic significance**. Both the observation that a prisoner maintained or had initiated positive social contacts with some-

17 See an earlier publication by Dünkel 1981, p.297 et seq.

18 Correspondingly, 53 of the 160 inmates released from social therapy were released after a work release phase (=33%) compared with only 6 of the 323 regular prison inmates (=1.9%). During the investigation period, the work release model was still being organized; in the meantime, almost all of the social therapy cases are admitted to work release and in regular prison, too, additional sections of the institution in Berlin have been restructured accordingly. This far-reaching opening up of the entire correctional system in the Federal Republic of Germany by means of furloughs, one-day leave and work release, took place in the course of the 1970's. For details, see Dünkel and Rosner 1982; Dünkel 1987, p.158 et seq. This opening up has partially levelled out the differences between social therapy and closed regular prison. As a result, new evaluation studies are faced with the problem of finding suitable control groups.

one outside the prison, and a generally positive judgement of the progress of therapy or treatment correlate with lower re-conviction quotas.

4. A comparison of the type and seriousness of recidivism

Recidivism was further differentiated according to the type and seriousness of the corresponding case of re-conviction - a procedure which is advisable especially in the case of career offenders. An observation, first of all, of the total sample of 510 career offenders showed that, in the 10 year period, the latter accounted for an average of 1.7 (median 1.2) of the cases of re-conviction to terms of imprisonment without probation for an average of 24.3 months (median 12.5). Here, too, a group comparison revealed significant differences: 1.1 vs. 1.9 sentences to imprisonment without probation for average terms of 17.5 vs. 27.2 months.

However, in the final analysis, this is mainly a reflection of the differences in the quotas of those who were actually re-imprisoned.

It therefore seemed appropriate for the present report to focus on the **group of recidivists** and to investigate the **seriousness of recidivism** there. The first result for the entire group is that each recidivist accounted for 2.7 served prison sentences (median 2.2) of an average of 38.2 months (median 32.5), in addition to an average of 1.3 prison sentences with probation to an average of 9.1 months and 1.6 fines.¹⁹

A **comparison** of the prisoners released from **social therapy** with those released from **regular prison**, considering **only** the **recidivists** (according to r.d.3), produced clearly lower differences in terms of the seriousness of the observed recidivism. The number of prison sentences served for recidivism was, on average, 2.4 vs. 2.8, and a comparison of the length of the corresponding prison sentences produced a similarly relatively low difference in mean of 37.2 vs. 38.8 months. However, inspection of the medians uncovered significant differences since the treatment group had considerably lower prison sentences to serve (25.7 months vs. 34.3 months for regular prison). The high mean in the treatment group was due to the fact that four former clients of social therapy had been sentenced to prison sentences totalling 10 to almost 20 years.²⁰ With respect to the type of repeat crime

¹⁹ The average number of day-fine units was 53.7 (median: 40.4).

²⁰ This refers to convicts sentenced to imprisonment terms of 116, 126, 138 and, in one extreme case, 192 months; the latter were, however, the result of a combination of several convictions.

(which will be discussed in greater detail in point 7), recidivists from social therapy were less frequently sentenced for property offences (1.7 vs. 2.3) and fraud (1.2 vs. 1.4) whereas in the case of bodily injury offences (1.2) and others - which, seen in absolute terms, occur infrequently - minor or no differences whatsoever could be discerned.²¹

Furthermore, the structures of the observed recidivism were subjected to a more detailed investigation within the framework of multivariate analyses. Different cluster analyses (with a total of 19 variables pertaining to offences, age, type and degree of penalty) indicated a division into seven types as the optimum solution.²² Arranged according to the seriousness of the recidivism event, these can be described as follows:

Cluster 1: all variables are appreciably below the total mean. In other words, re-conviction (N = 112) is minor and if present at all, is limited to petty offences. In terms of structure, these cases are the most similar to the 73 who were not re-convicted at all.

Cluster 2: re-conviction, as a rule, is due to offences, which are punishable by a fine, such as traffic offences and sometimes also bodily injury and opposition to public authority.

Cluster 3: prison sentences on probation and offences such as property offences (N = 101) and breach of obligation in respect of maintenance predominate.

Cluster 4: chiefly offenders sentenced to several prison sentences without probation for property offences. At the same time, fraud and similar offences play an essential role.

Cluster 5: this group comprises offenders sentenced chiefly for sex offences; high (N = 18) served prison sentences as well as prison sentences on probation occur.

Cluster 6: re-conviction occurs in this group first and foremost for robbery, in addition to opposition to public authority and sex offences in individual cases. A striking feature is above all the exceptionally high prison sentences served for a repeat offence. Moreover, the number of prison sentences without probation is above average.

Cluster 7: all three cases received long additional prison sentences for homicide. (N = 3)

This sub-division into seven typical recidivism groups remained stable within the framework of different calculation models (for details on the distributions, see Diagram 2). It seems noteworthy that the age variable does not play a role here either.

²¹ Along with convictions for property offences, traffic offences were the most frequently recorded (on the average, 1.7 and 1.5 respectively). This should correspond to the hypothesis that traffic offences constitute a relatively frequent concomitant of a criminal career, even when the latter is on the wane.

²² Two cases of offenders who formed a cluster in connection with violations of the law such as homelessness etc., which until 1975 were considered punishable, are not taken into account here.

Diagram 2

Cluster profiles of the recidivism structure of career offenders (N=510)

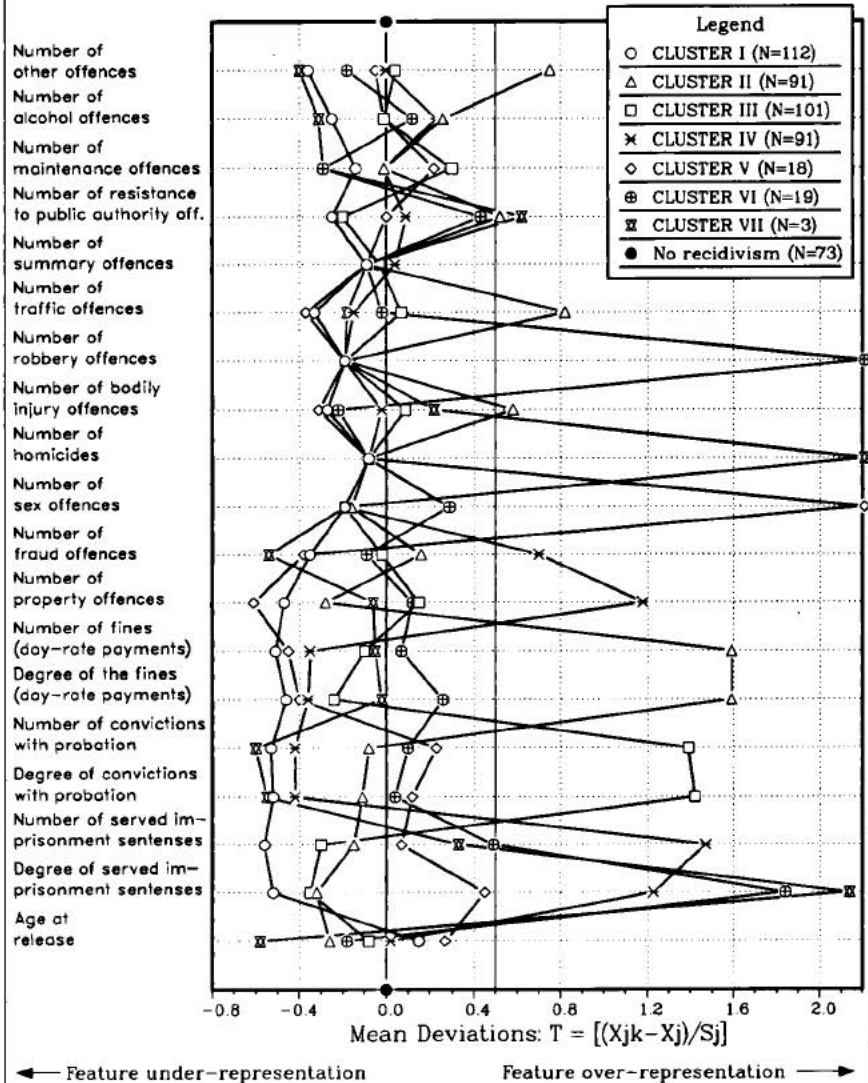
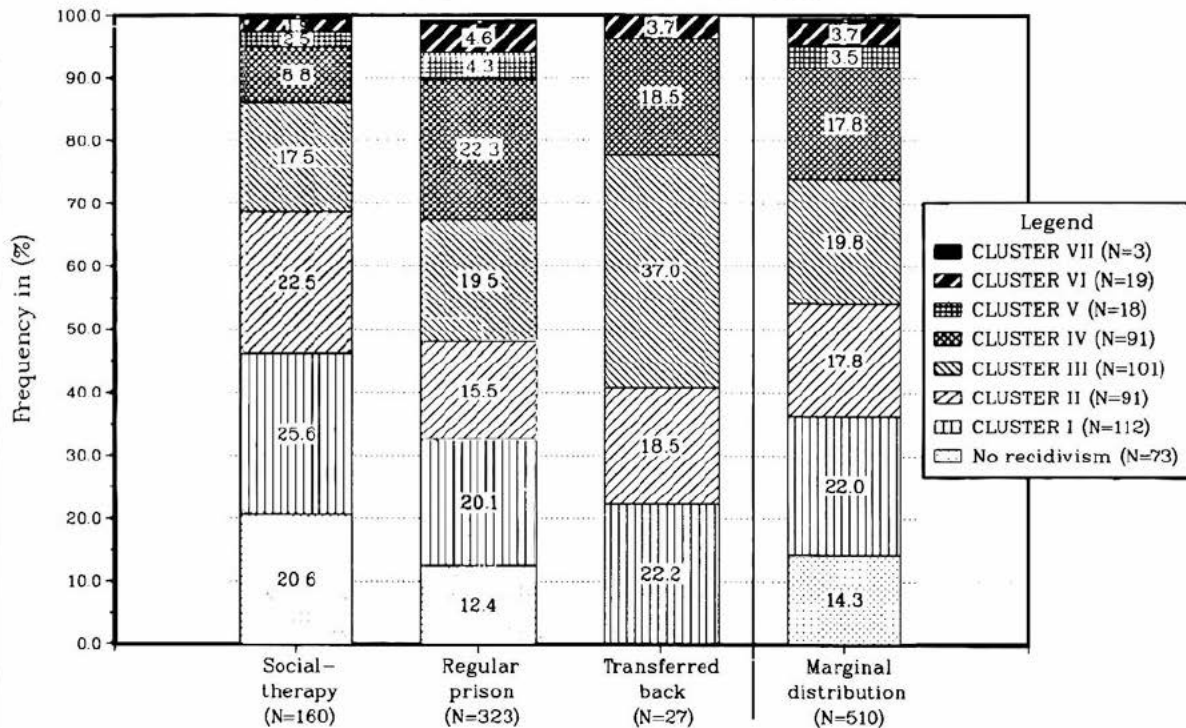


Diagram 3

**Conditional distributions and marginal distribution
of the recidivism structure cluster of career offenders
according to different forms of release**



Also of interest is the group-specific distribution of the social therapy and **regular prison** cases in the seven **clusters** (see Diagram 3). As was to be expected in the light of the above-mentioned different re-conviction quotas, social therapy was considerably over-represented in Cluster 1. However, in Cluster 2 (predominantly only fines, mainly for traffic offences) the frequency with which prisoners released from social therapy can be found is also above average. On the other hand, their proportion in Cluster 3 (predominantly sentences on probation) is average and in Cluster 4 it is below average. Although it might seem surprising given the over-proportional number of sex and robbery offences among those responsible for the current sentence, their proportion is also below average in Clusters 5 and 6, where the serious cases of recidivism in connection with sex and robbery offences are typically to be found (see Diagram 3 for details). Of the three subjects who were re-convicted for homicide (Cluster 7), one had been released from social therapy. All in all, the **total volume of dangerous violent crimes** turns out to be **relatively low** despite the fact that we are dealing with a highly select population of career offenders, especially in the case of the social therapy clients.

5. Recidivism according to different forms of release from prison

In the present study, our analysis will be differentiated according to the criterion of **release on parole on probation** and/or completion of the sentence. According to § 57 of the German Penal Code, a release by a special court (Strafvollstreckungskammer) may be considered after two-thirds of the imposed sentence has been served if an attempt to see whether the convict will refrain from committing new crimes outside the prison seems justified. As soon as half of the sentence has been served, a parole may be considered within the framework of an overall assessment of the offence and the character of the convict, provided that special circumstances exist. On the whole, the latter, which is known as the "Halbstrafenregelung" (regulation enabling release after half of the sentence has been served) has very rarely been applied in the Federal Republic of Germany. In the present study, too, examples of its use were very rare (see below).²³ The "normal case" of a parole after two-thirds of the sentence has been served, is handled very

²³ Although the possibilities of implementing the regulation allowing release after half of the sentence has been served were extended by the aforementioned reform (note 12), they do not yet play a role in the present investigation.

differently from region to region depending on the different institutions and the competent courts (Strafvollstreckungskammern).²⁴

In comparison with other Lands of the Federal Republic of Germany, the **practice in Berlin Tegel** during the study period was very restrictive in regular prison whereas in social therapy it was markedly more liberal. As a result, only **30%** of the inmates were **paroled from the regular prison group compared with not less than 65% from social therapy**. The fact that more than twice as many social therapy clients had their sentences suspended, including even career offenders with numerous previous convictions,²⁵ is evidence of the readiness of the courts to reward positive developments in the treatment process. On the other hand, it also becomes clear that the therapists, directors of the institutions and others responsible for social therapy had committed themselves more and were successful in securing a corresponding curtailment of their clients' term of imprisonment.

Interestingly, those who had undergone social therapy were not only released on probation more frequently, the outstanding sentences suspended were also significantly longer (average of 9.9 months) than those of the regular prison group (8.6 months).

This is not attributable to the fact that the current sentences served were longer (see above 2.) since, on average, in social therapy, 29.3% of the sentence imposed by the courts was suspended, whereas in the regular prison group it was only 25.8%. On six occasions, prisoners were released from social therapy after having served only half of the sentence (5.8% of the releases on parole) compared with two in the case of regular prison (2.1%). On the other hand, a significant proportion of those released on parole only had minimal outstanding sentences of a few months suspended. In 22% of the social therapy cases and in as many as 30% of those in regular prison, the suspended sentence was a maximum of 4 months. Given the required average probation period of 3 years, this fact deserves special attention from the point of view of the temporal extension of criminal social control.²⁶

A differentiation of the **re-conviction quotas** by parolees and inmates who were otherwise released, reveals significant differences between social therapy and regular prison in both cases (see Diagrams 4 and 5). Especially noteworthy are the re-conviction quotas for each of the **paroled career offenders**. It is worthy to note because, in all of the sub-samples, these were inmates who had received

24 See Böhm and Erhard 1984, p.365 et seq.; Dünkel and Ganz 1985, p.157 et seq.; also see Northoff 1985.

25 In the total sample studied by Dünkel 1980, p.330 et seq., comprising 1,503 inmates released from the Tegel Prison (not only career offenders), the quota of parolees was almost identical: 37% from regular prison and 65% from social therapy.

26 See Dünkel 1986, p.176 et seq.

equally favorable judgments from the courts at release and, in the case of those who had been in regular prison, they represented an especially positive selection from the total group. Nonetheless, 65% of the members of this group were re-convicted to terms of imprisonment without probation, whereas re-conviction occurred only in 47% of the social therapy cases (**a difference of 18%**). Corresponding differences in recidivism according to the remaining recidivism criteria can be seen in Diagram 4.

In the group of **non-parolees**, that is, prisoners who did not receive a favorable prognosis from the courts at the end of their term in prison, the picture varies from one recidivism criterion to another. If we take each case of re-conviction, no significant differences between social therapy and regular prison become apparent. In the case of r.d.2 (see above: re-convictions to at least three months imprisonment), a difference of 11% is already apparent and it increases to no less than 26% in the case of r.d.3 (new terms of imprisonment).²⁷

On the whole, this indicates that, independently of the form of release from prison, clearly more favorable outcomes ensue in the case of inmates released from social therapy. Especially with regard to parolees who, in each case were judged equally by the courts (positive prognosis at release), this finding points to a direct effect of social therapy.²⁸

If we compare parolees with non-parolees, the findings concur with expectations, first of all, for the entire group - less frequent or less heavy re-convictions among prisoners released before due date (e.g. r.d.3: 57% vs. 68%). However, corresponding differences could not be ascertained for the first two recidivism criteria, which also include petty recidivism and/or lesser re-convictions. As becomes clear from an observation of the individual sub-groups, the differences in the re-arrest rate of the entire group are accounted for by the group of regular prison inmates alone, whereas, generally speaking, no significant difference could be ascertained in the social therapy group between prisoners released before due date and those who had completed their sentence. This is linked, *inter alia*, to the fact that the few non-parolees who had undergone social therapy had, in part, voluntarily renounced their parole for treatment reasons (e.g. to be able to attend a schooling or treatment programme at the institution) so that, in these cases, serving the sentence to expiration does not necessarily have to coincide with a negative prognosis on the part of the institution or the court.

²⁷ Even when those transferred back to regular prison are taken into consideration, the difference of over 17% remains.

²⁸ On this point, consult in particular Dünkel 1983, p.132 et seq.

Diagram 4

**Re-convictions of career offenders released
from different forms of correction
- parolees -**

Released from Tegel Prison, Berlin, between 1971 and 1974, risk period = 10 years

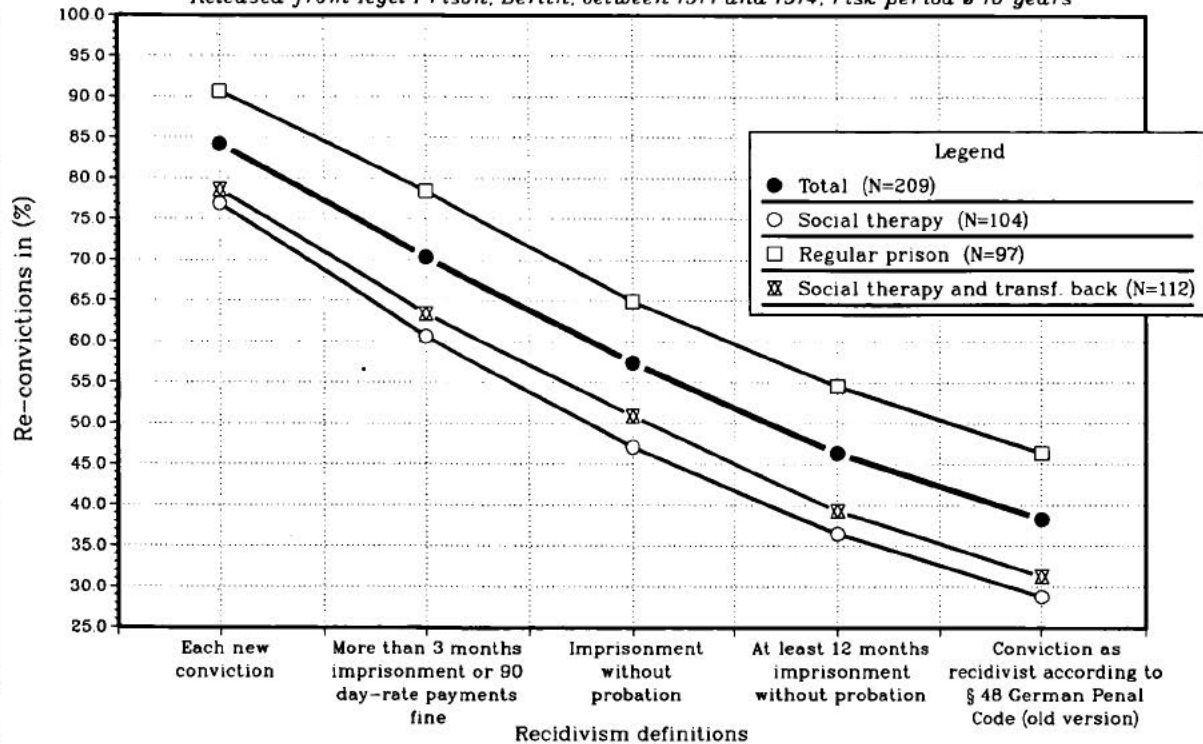
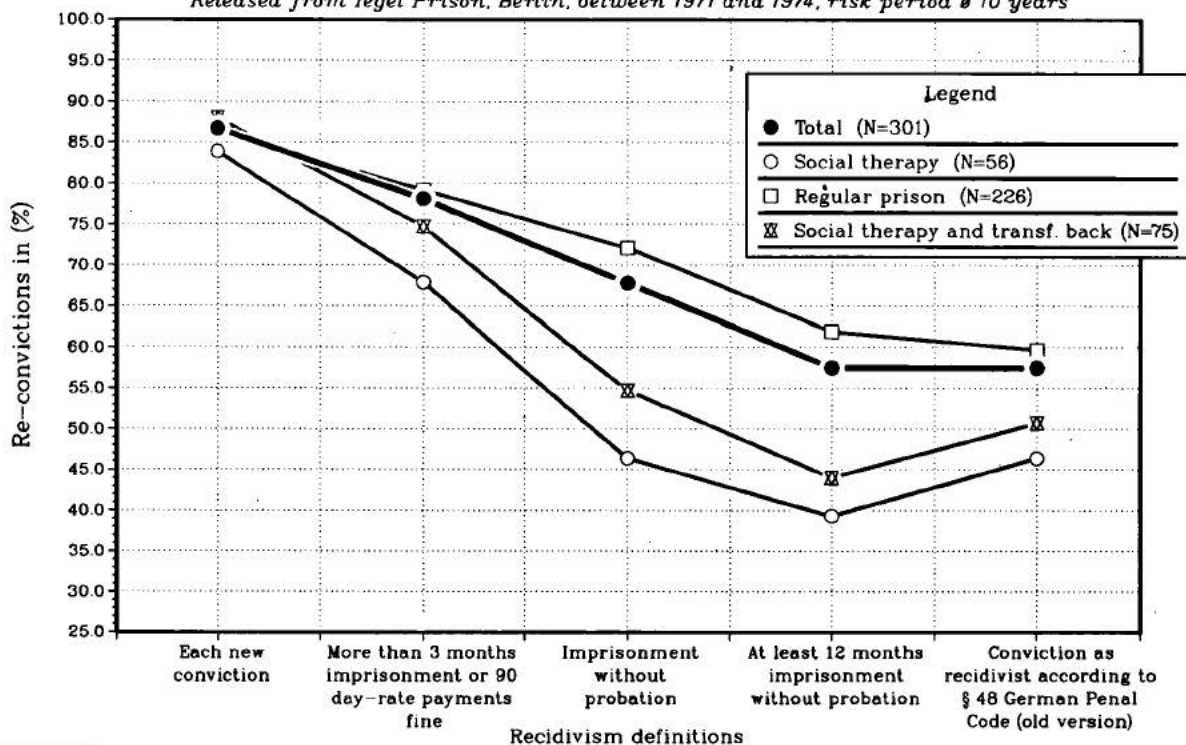


Diagram 5

**Re-convictions of career offenders released
from different forms of correction
- non - parolees -**

Released from Tegel Prison, Berlin, between 1971 and 1974, risk period 10 years



With regard to subsequent recidivism on the part of the paroled inmates, no differences could be ascertained between those who were subjected to probation supervision, in other words, the assignment of a probation officer, and those who were not.²⁹ In the case of those who had received social therapy, this might be attributable to their preparation for release which in any event was better. However, of those who were released from regular prison, only a highly select group which had received a positive prognosis were able to have their sentences suspended, in other words, those who were at an especially high risk, for whom the probation service could have been most helpful, were excluded from the very start.³⁰

6. The temporal process of recidivism

The methodological approach employed in this analysis of the temporal process of the recidivism of career offenders is based on the fundamental statistical concepts underlying **event history analysis**³¹ as a special stochastic process. This procedure investigates the time intervals (duration of episodes, times to response) which separate successive changes of state (events).

If the times at which the changes of state take place are registered precisely, i.e., if the episodes are exactly measurable, we have what is known as a stochastic process with **continuous time**. The states which are of interest can take on a finite number of categories and are registered as **discrete variables of state**.

The **basic model of event history analysis** corresponds to the simplest case if we wish only to describe the interval which elapses between the occurrence of the origin state (release from prison) and entry into the destination state (re-conviction). This model is known as a two-state model with absorbing target state or, more simply, a single-episode model.

Stochastic processes, in which the transition probability is dependent only on the immediately preceding state and where the duration time to occurrence itself has no effect on the risk, are known as **Markov processes**.³²

²⁹ 68.3% of the parolees released from social therapy and 62.5% of the regular prison group were placed under the supervision of the probation service. According to German law, the assignment of a probation officer is not obligatory for adults (in contrast to juveniles); see § 57 in conjunction with §56d of the German Penal Code.

³⁰ According to § 57 of the German Penal Code, the assignment of a probation officer takes place as a rule when at least one year has been spent in prison before parole as was, without exception, the case in the sample investigated. The fact that almost 40% of the parolees from the regular prison group were not placed under the supervision of the probation service, is evidence of the relatively positive recidivism prognosis given by the court despite their previous convictions.

³¹ For a general introduction to event history analysis, see Cox 1972; Diekmann and Mitter 1984; Andres 1985; Blossfeld, Hammerle and Mayer 1986.

³² See Diekmann and Mitter 1984, p.43 et seq.

If the transition probability also depends on the length of time to occurrence of the previous state, we have what is known as a **Semi-Markov-Process**. The independence from the past history, on the one hand, and the time to event occurrence on the other, specify the **Basic Random Model**, which is brought into play as a **null hypothesis** for comparisons with more complex models which avoid such restrictive assumptions. The fundamental statistical concepts underlying the single-episode case can be transferred to more complex situations such as several successive episodes or several target states (competing risks) or both. This is precisely the methodological procedure which will serve as the basis for the remainder of this study of career offenders. Given the **exploratory** nature of the evaluation at this stage, the results described below are still based on the simpler, more basic models of event history analysis.

To help elucidate the development patterns of the recidivism processes and the terms used here, we shall give a brief explanation of the most important statistical characteristics of event history analysis for the single-episode-case, with the aid of the Basic Random Model. The time to event occurrence (the time which elapses until re-conviction) is a continuous non-negative random variable T ($T \geq 0$) whose **distribution function** $F(t)$ and **density function** $f(t)$ can be rendered by the following relation:

$$F(t) = P(T \leq t) = \int_0^t f(\tau) d\tau .$$

$F(t)$ is thus the cumulative distribution of the times of entry into the new state (point at which re-conviction takes place), that is, the probability that after t months a re-conviction will occur. The density function $f(t)$ indicates the probability that a re-conviction will take place within a specific time interval of the recidivism period $[t_1, t_2]$.

The **survival function** (in keeping with the expression of the survival time), $S(t) = P(T \geq t)$, then indicates the probability that non-recidivism will last for at least t months, i.e., that the person will "survive" time t without being re-convicted.

$S(t)$ is complementary to $F(t)$: $S(t) = 1 - F(t)$. However, the most important quantity is the **transition probability of a change of state**. If its function is known, the entire process is described. For the single-episode case, the transition probability is approximated by means of what is known as the **hazard rate** for infinitesimal Δt :

$$\lambda(t) = \lim_{\substack{\Delta t \rightarrow 0 \\ \Delta t > 0}} \frac{1}{\Delta t} P(t \leq T < t + \Delta t \mid T \geq t) .$$

The hazard rate is thus the limiting value of the conditional probability that an individual will experience an event (re-conviction) in the interval $[t, t+\Delta t]$. This results directly in the relation between the hazard rate and the survival function:

$$\lambda(t) = \frac{f(t)}{S(t)} , \quad \lambda(t) = \frac{f(t)}{1-F(t)} .$$

The summation of $\lambda(t)$ will give the **cumulative hazard rate** $\Lambda(t)$:

$$\Lambda(t) = \int_0^t \lambda(\tau) d\tau = \int_0^t \frac{f(\tau)}{1-F(\tau)} d\tau = - \ln(1 - F(\tau)) \Big|_0^t = - \ln(1 - F(t)) = - \ln S(t) .$$

This function describes the entire risk development process of the recidivism events and the general form for the survival function depending on the risk rate follows:

$$S(t) = \exp \left(- \int_0^t \lambda(\tau) d\tau \right) .$$

For the times to event occurrence, a series of special probability distribution models, for example, exponential, Weibull, log-logistic, extreme value or Gompertz distributions can then be assumed and maximum-likelihood estimations can be applied to specify their parameters using the empirical data.

An important distribution of times to event occurrence is the **exponential distribution** since it is based on a **constant hazard rate**. A time-independent event risk is consequently assumed and the null hypothesis of the basic random model (Markov process) thus formulated. This means that the risk of being re-convicted does not depend on the "length of time spent in freedom":

$$\lambda(t) = \lambda , t \geq 0 , \lambda > 0 .$$

The result for the survival and density functions is thus:

$$S(t) = \exp(-\lambda t) , f(t) = \lambda \exp(-\lambda t) .$$

The assumption of a constant risk λ is extremely useful for the depiction and interpretation of the empirical recidivism process since the former should reproduce the risk development of the estimated cumulative hazard function as a slope with a constant negative gradient. Such a representation facilitates a very good judgement of the extent to which the risk is independent of time, the overall development of the risk, as well as that of the individual sub-groups.

The empirical evaluation conducted with the recidivism data generated by the basic statistical concepts described here, employed one of the most common methods of analyzing times to event occurrence and/or survival times - the **life table method**. The SPSS Procedure SURVIVAL was used for this purpose.³³ The full risk period - an average of 10 years - was divided into 40 three-month intervals

³³ See Schubö and Uehlinger 1986, p.439 et seq. The final report will discuss in greater detail alternative means of estimating the risk rate using the Kaplan-Meier product-limit-estimation; Kaplan and Meier 1958. These estimations can be carried out by computer programs such as BMDP (Dixon et al. 1981), RATE (Tuma 1980) or SURVREG (Preston and Clarkson 1983).

(k) and the hazard rate for each interval was estimated according to the life table method.³⁴

The **analysis of the first recidivism findings** presented here is documented below. The graphic representation displays all of the re-conviction process developments with the empirically ascertained survivor and cumulative hazard functions. Of special interest are chiefly the discrepancies which occur in the distribution patterns according to the different treatment regimens and recidivism definitions.

Process development representation offers a more **complete** and thus a more **informative picture** than conventional analysis designs which generally work with compressed statistical distribution values such as mean, median, standard deviation and the like. However, failure to take the development patterns into consideration, might result in totally inaccurate interpretations of the findings and conclusions (e.g. in the case of overlapping survival functions).³⁵ Diagrams 6.1 and 6.2 show the development pattern, with respect to **re-conviction**, for the entire risk period of 10 years, according to **different forms of release from prison**.

The process developments reveal **considerable differences** between the individual sub-groups, on the one hand, and the deviations from the total sample, on the other. The most pronounced differences in the survival distributions occur during the first third of the risk period. After only 30 months, as many as 65% of the prisoners discharged from regular prison were re-convicted compared with a mere 36% of the prisoners discharged from social therapy. The differences between both

34 The hazard rates are estimated on the basis of the following relationship:

$$\hat{\lambda}_k = d_k / R_k - (w_k / 2), \text{ whereby:}$$

d_k : The number of cases for which recidivism or re-conviction occurs in the 'k'th interval,

w_k : Number of cases censored in the 'k'th interval. Since all persons in the total observation period were included, all censored observations, i.e. non-recidivists, are in the last interval.

R_k : "Risk set" or the number of persons who, at the beginning of the 'k'th interval, had still not been recidivous or had been neither re-convicted nor censored.

When no censored observations were recorded in the 'k'th period, the estimated hazard rate corresponds to $\hat{\lambda}_k$ of the relative frequency d_k/R_k .

35 See Diekmann 1986, p. 125 et seq.. To test the significance of different survival functions ($H_0: S_1(t) = S_2(t)$ for all t) there is a series of non-parametric test statistics which are essentially modifications of rank order tests based on a generalized Wilcoxon Test (Gehan-Breslow Test, Lee-Desu Test) or on a generalized Savage Test (Mantel-Cox Test, Log-Rank Test). If H_0 is valid, the test statistic is always asymptotically χ^2 distributed with k-1 degrees of freedom (k= number of sub-groups). However, for intersecting survival distributions, this statistic is not applicable.

Diagram 6.1

**Recidivism process of career offenders
with re-convictions according to
different forms of correction**
(Estimated survival functions: $S(t)=1-F(t)$)

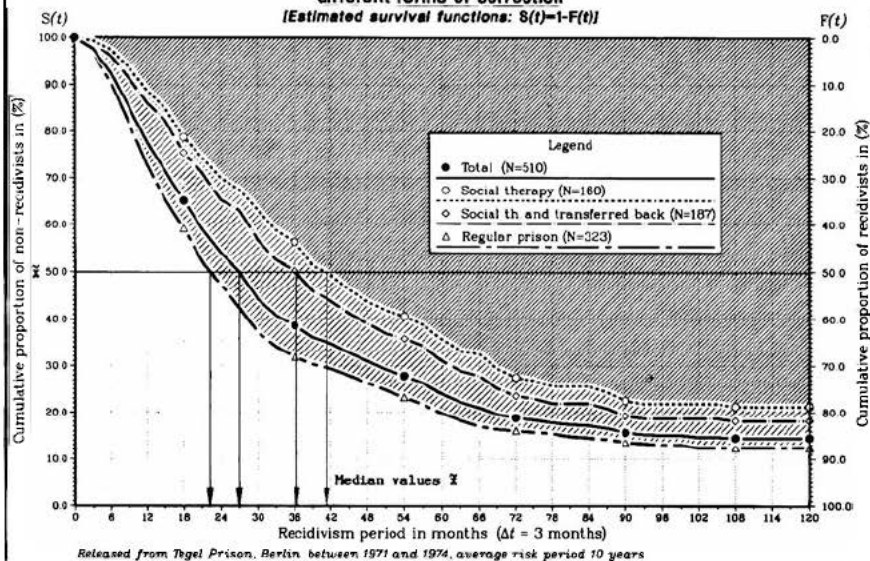
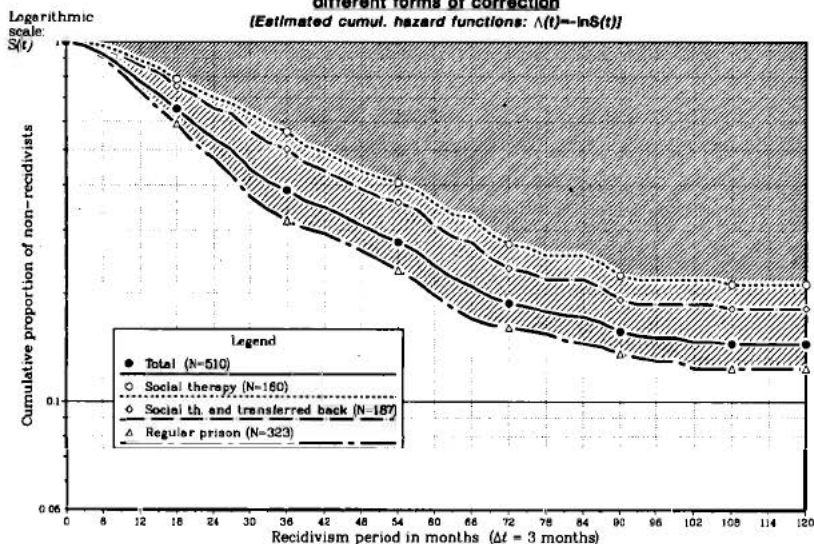


Diagram 6.2

**Recidivism process of career offenders
with re-convictions according to
different forms of correction**
(Estimated cumul. hazard functions: $\Lambda(t)=-\ln S(t)$)



groups remain pronounced up to the end of the observation period even though the trend decreases steadily to about 9%. After 10 years, only 12.4% of the regular prison group still had no record of recidivism compared with at least 21.4% from the social therapy group (r.d.1). The medians of the "survival times" serve to elucidate the findings further. A median recidivism-free period of 27 months results for the total sample whereas the median for the treatment group is 41.7 months and for the regular prison group only 22.4 months.³⁶

Statistical comparative tests of the survival distributions also confirm the high significant differences between the individual groups which are obvious at a first glance.³⁷

Group comparison:	ST / RP / TB	ST / RP	ST / TB	RP / TB
LEE / DESU - statistic	35.071	29.164	17.355	1.654
D. F.	2	1	1	1
p	.0000	.0000	.0000	.1984

ST: social therapy; RP: regular prison; TB: prisoners transferred back

The most dynamic development of recidivism takes place within the first 3 1/2 years, and the preponderant part of the propensity to recidivism is attributable to the regular prison group.

The estimated cumulative hazard function progress gives some indication of the **re-conviction risk's development pattern** (Diagram 6.2) since it corresponds to logarithmically transformed survival functions under the null hypothesis of constant risk (exponential model; i.e. time-independence of the risk corresponds to exponentially distributed time to event occurrence). This provides interesting possibilities for a graphical interpretation of the risk development in the different groups. The null hypothesis of a recidivism risk independent of time to event occurrence would then yield a linear cumulative hazard function curve with a **con-**

³⁶ The group of inmates transferred back displays an extreme recidivism distribution pattern. As early as 66 months after release, 100% of them had been re-convicted. Here, the median of this group's "survival times", which is almost identical with that of the regular prison group (21.4 months), obscures the real distribution of recidivism. In studying the group of inmates transferred back to regular prison, the legal- and social-biographical features, in particular, must be incorporated into the analysis with greater precision.

³⁷ The observation that the difference between the group released directly from regular prison and those who had been transferred back after a stay in social therapy is not very significant, can be attributed to the fact that the Lee-Desu Statistic is especially sensitive to differences at the beginning of the process. On the other hand, the Mantel-Cox Test Statistic (implemented in BMDP) would yield highly significant values in this case since it places greater weight on differences at the end of the process.

stantly descending gradient. If, on the other hand, the recidivism risk increases with the duration of non-recidivism, the line will transform into a curve and bend downwards in the same proportion as the risk increases. On the other hand, if the risk decreases, the curve will turn upwards and, if it decreases to 0, will change into a straight, horizontal line.

The development patterns exhibited by the risk process for the individual groups of released prisoners show a number of interesting peculiarities. Among those released from **social therapy**, four phases of risk-development, differing clearly from those of the prisoners released from regular prison, can be discerned. Until approximately the 14th month after release the recidivism-risk sets in very slowly, and between the 15th and the 66th month, it remains almost constant. In other words, within this period after release, the propensity to recidivism no longer depends on the time to event occurrence which has elapsed until that point. The risk rate declines successively thereafter until about the 90th month where it remains stationary at the zero-level until the end of the observation period.

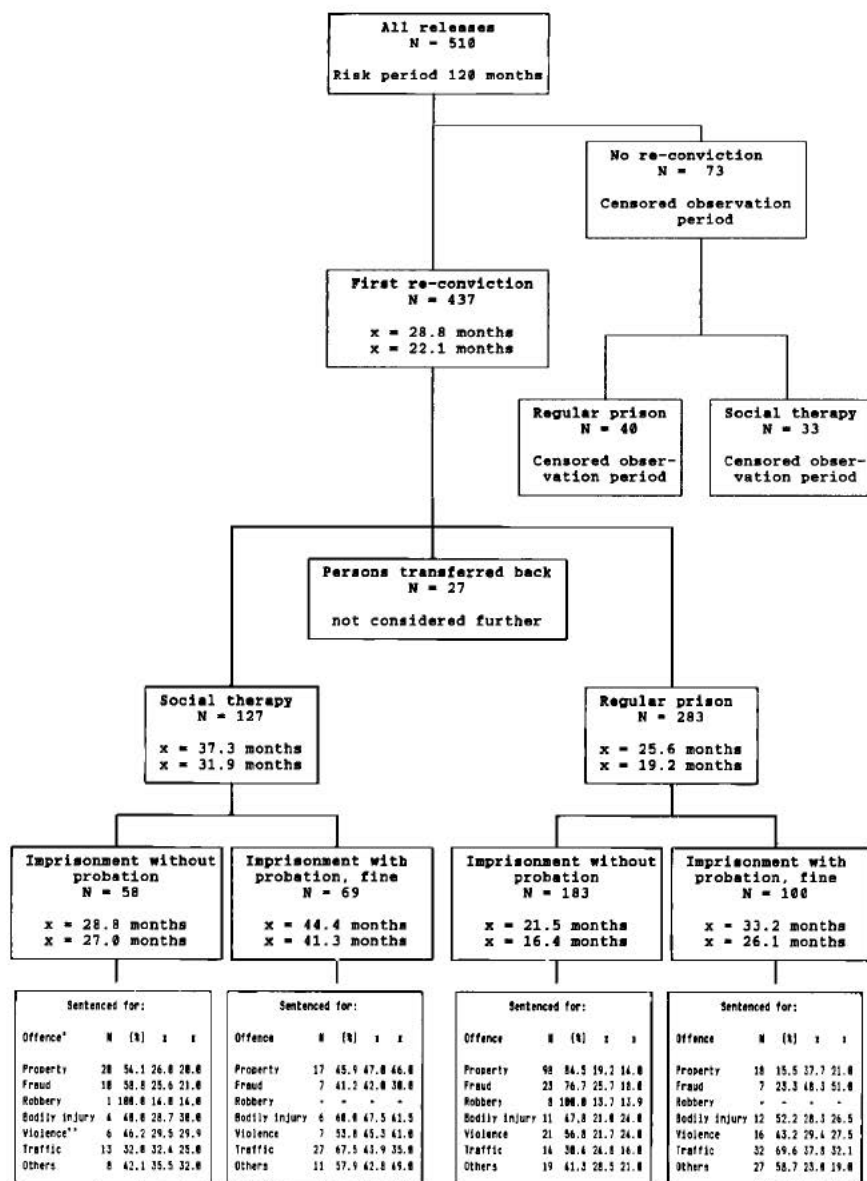
In the **regular prison group**, five phases of recidivism-risk development could be clearly distinguished. In the first 30 months the risk developed very rapidly, dropped from the 30th to about the 42th month and then increased again up until the 66th month (though the increase was less pronounced than in the first phase). Thereafter the risk rate diminished continuously and by the 108th month, it had reached 0 where it remained constant.³⁸

A more differentiated picture of the re-conviction process can be observed when the periods up to the first re-conviction are investigated separately **according to the form of correction, the types of offences and the type of sentence** - imprisonment without probation (IWOP; r.d.3) and a lesser sentence to imprisonment with probation (IWP) or fine.

The **structural block-diagram** shows the essential differences with the aid of the means (\bar{x}) and medians (\tilde{x}) of the "survival times", i.e., the number of months which elapse before the first re-conviction.

The entire temporal course of the process development can be seen in Diagrams 7.1 and 7.2. Looking at the first re-convictions for the entire group, very pronounced differences in the survival courses can be observed between re-convictions to IWOP and re-convictions to IWP or a fine. After 17.9 months, as many as 50% of the prisoners had been re-convicted to IWOP and only 26.8% to a lighter sentence. The median for re-conviction to IWP or a fine is 30 months. At this point in time, however, as many as 76% have already been sentenced to IWOP.

³⁸ This conspicuous, cyclically weakening risk development pattern can also be observed for those who were transferred back (though in a more pronounced form); the entire group had, however, been re-convicted by the end of the third development phase.

Structural block-diagram

* The offence tables on the structural block diagram should be read as follows: From the social therapy group, 28 persons (54.1%) were reconvicted for a property offence to imprisonment without probation. Conversely, 17 persons who were likewise reconvicted for a property offence, were sentenced to imprisonment with probation or a fine. This corresponds to 45.9%. The corresponding means (x) and medians (z) of the "survival times" are also given in each case.

** Violent crimes comprised sex, homicide and bodily injury offences.

Diagram 7.1

Comparison of recidivism process: first reconviction to imprisonment without probation vs. imprisonment with probation or fine

[Estimated survival functions: $S(t)=1-F(t)$]

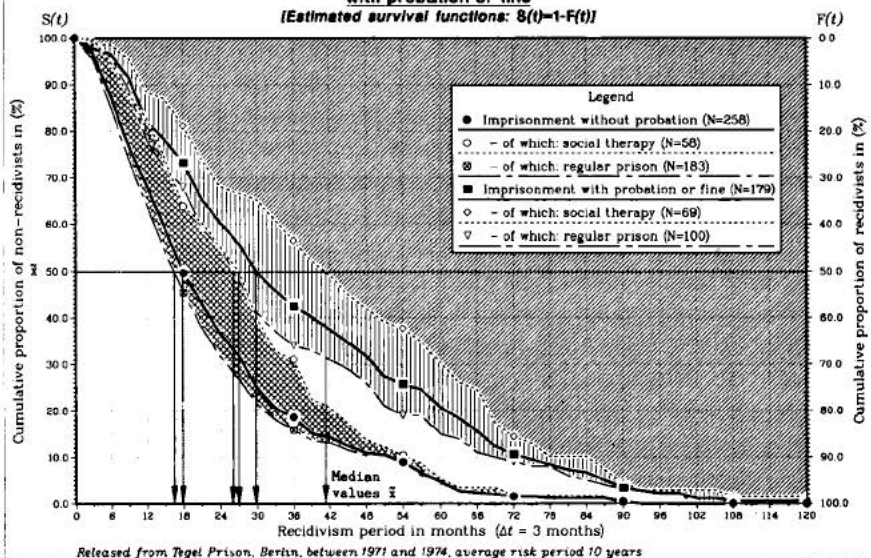
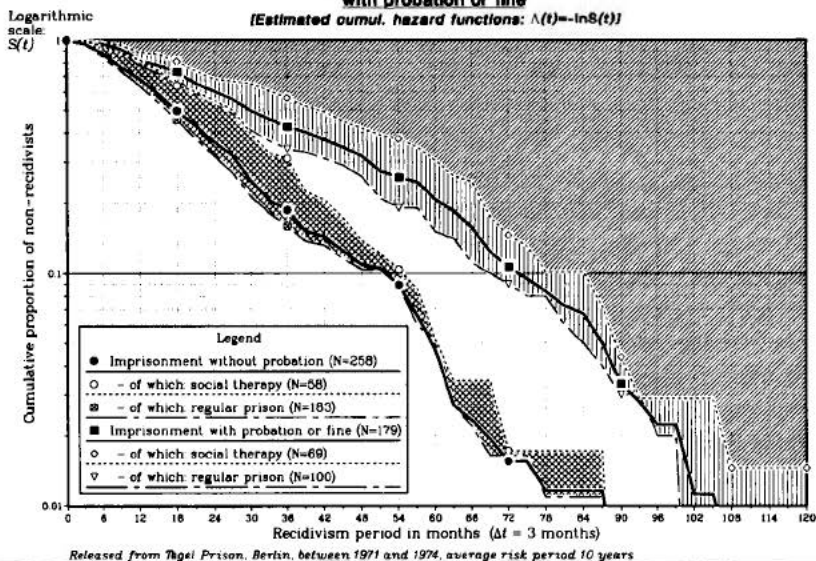


Diagram 7.2

Comparison of recidivism process: first reconviction to imprisonment without probation vs. imprisonment with probation or fine

[Estimated cumulat. hazard functions: $\Lambda(t)=-\ln S(t)$]



A steadily increase in the differences can be observed throughout the entire period after release. After 33 months the differences peaked at approximately 27% and remained clearly established until the 72nd month after which the lines converged rapidly. After 93 months, all prisoners had been re-convicted to IWOP and, after 108 months, the last was re-convicted to IWP or a fine.

Similarly conspicuous are the differences for ex-convicts in the two re-conviction categories according to the forms of confinement from which they were released whereby the deviations for those who were sentenced to IWP or a fine are larger, both for the therapy and for the regular prison group. Altogether, the differences in the temporal development for both sentence categories are much more pronounced in favor of the therapy group than for those who had been subjected to regular prison. As can be seen from the structural block-diagram above, these differences are also clearly expressed in the medians of the social therapy group (27 months / IWOP and 41.3 months / IWP or a fine) compared with the regular prison group (16.4 months / IWOP and 26.1 months / IWP or a fine).

The differences in the survival distributions are significant according to the test statistic.

Group comparison:	Imprisonment - without probation - with probation, fine	For imprisonment without probation - Social therapy - Regular prison	For imprisonment with probation, fine - Social therapy - Regular prison
LEE / DESU - statistic	37.409	10.895	8.005
D. F.	1	1	1
p	.0000	.0010	.0047

A comparison of the risk developments for both sentence categories (Diagram 7.2) shows that the risk rates augment at different strengths with increasing time to occurrence and separate. Aside from minor risk fluctuations upwards or downwards, the probability of being re-convicted to IWOP is much higher (sometimes up to 80%) than that of being re-convicted to IWP or a fine. Considering the previous convictions, this is also plausible. If, in addition, we take into consideration the offence categories which were punished in the first re-conviction, a trend towards the same differences in the "survival times" can be observed both according to the form of confinement and according to the two sentence categories (see the structural block-diagram). **To sum up**, it can thus be affirmed that the longer the period between release and re-conviction for a specific offence, the greater the probability of a re-conviction to a sentence with probation or a fine and vice versa.

Of special interest is the **re-conviction criterion** of a new imprisonment **without probation** (r.d.3). In comparison with the first re-conviction (r.d.1), much more favorable "survival times" can be observed for this criterion.

For the **total sample**, we get a median of 43.3 months (r.d.3) compared with 27 months (r.d.1) - a remarkable increase of 16.3 months in the time to event occurrence. After 10 years, 36.5% had still not been re-convicted (r.d.3). These more favorable values in the survival development are also clearly recognizable when looking at the entire process (cf. Diagram 8.1).

All in all, compared with r.d.1, the distribution levels are nearer the upper bound, whereby the differences between the two groups of released prisoners (social therapy and regular prison) are much larger than in the case of the r.d.1. The median for the regular prison group is 32.8 months (r.d.1 = 22.3 months; $\Delta x = 10.5$ months). Prisoners released from social therapy exhibit a clearly more positive outcome with respect to non-recidivism since 53% had still not been re-convicted at the end of the observation period. Compared with the regular prison group, there is a difference of 23% in favor of those who had received social therapy. The overall distribution pattern also generally confirms this more positive result for the therapy group. **Of major importance** is above all the fact **that the differences** in the **temporal development increase steadily** and do not decrease subsequently as they do with r.d.1 after about 3 years. As can be expected, the test statistic reveals highly significant differences in the process patterns (L α /Desu statistic: 30.69; D.F. = 1 ; $p = .0000$).

As is the case for both groups released from prison, the **risk development patterns** themselves are thus, altogether, notably less pronounced (Diagram 8.2) than is the case with the first general re-conviction (r.d.1).

It is interesting to note that the probability of re-conviction for those who had received social therapy had dropped almost entirely to 0 after only half of the risk period, whereas the regular prison group reached a stable zero-level only from about the 102nd month.

The development process for the first re-conviction (r.d.1), according to different **forms of release**, is illustrated in Diagrams 9.1 and 9.2.

The survival process for the entire group corresponds here to the course of the first recidivism criterion. Deviations from the course of the entire group, on the one hand, and the differences between parolees and non-parolees on the other, are significant according to the test statistic (11.7; $p = .0006$). However, unlike the distribution differences between the therapy and the regular prison groups, they are much less pronounced (cf. Diagrams 6.1 and 6.2).

Diagram 8.1

**Recidivism process of career offenders
with reconviction to imprisonment
without probation**

[Estimated survival functions: $S(t) = 1 - F(t)$]

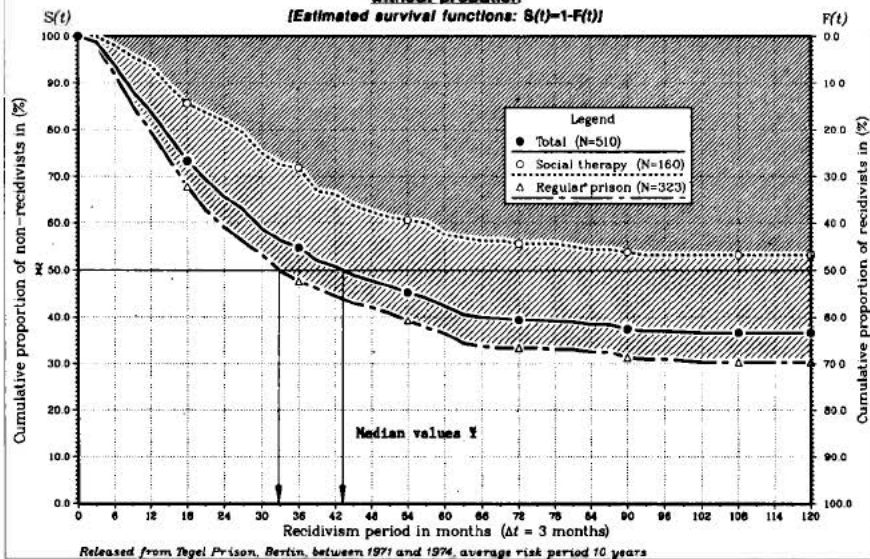


Diagram 8.2

**Recidivism process of career offenders
with reconviction to imprisonment
without probation**

[Estimated cum. hazard functions: $\Lambda(t) = -\ln S(t)$]

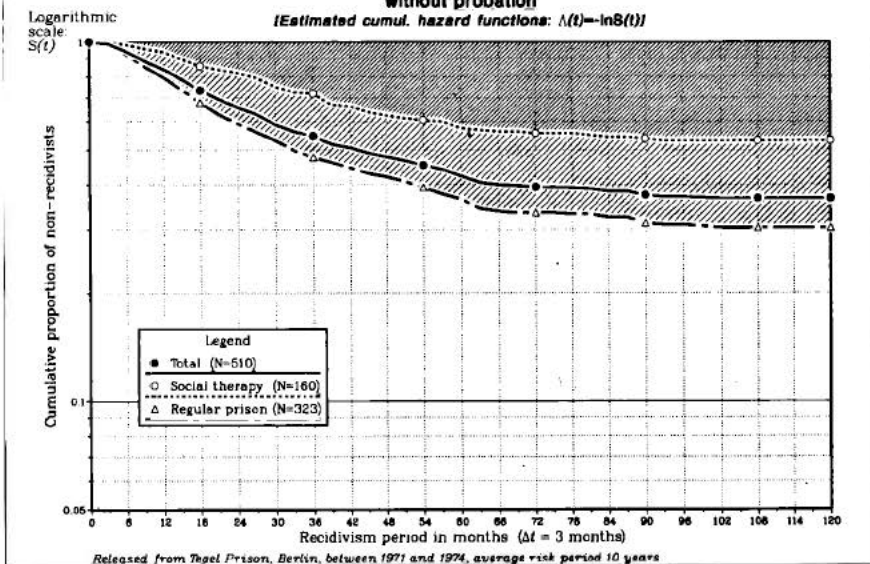


Diagram 9.1

**Recidivism process of career offenders
with reconvictions according to
different forms of release**
(Estimated survival functions: $S(t) = 1 - F(t)$)

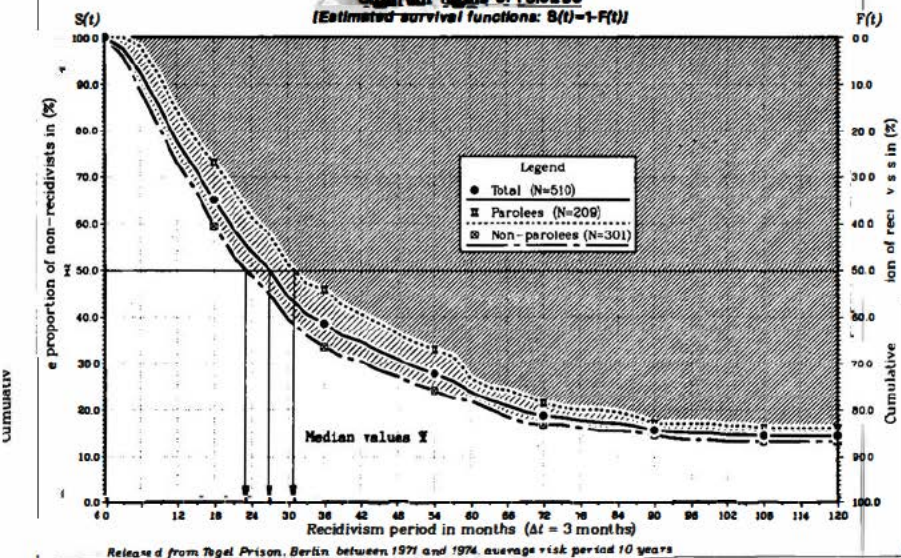
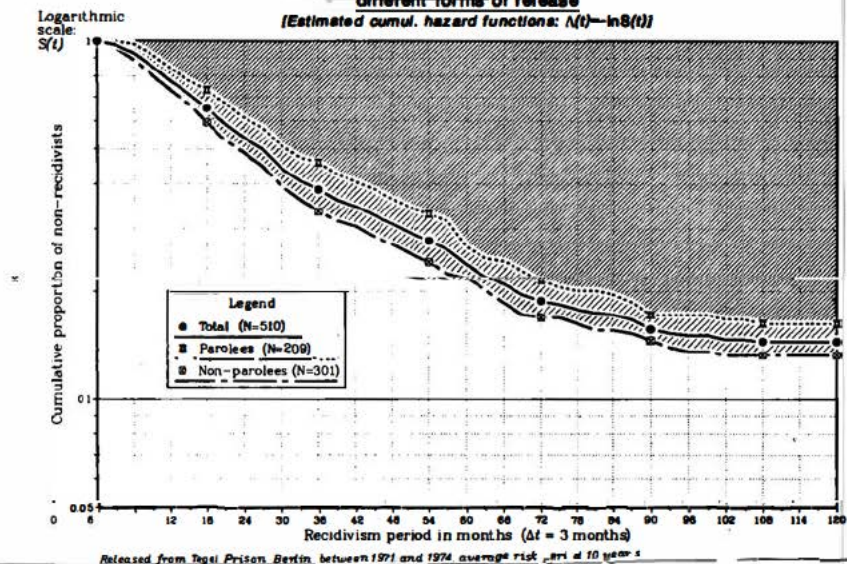


Diagram 9.2

**Recidivism process of career offenders
with reconvictions according to
different forms of release**
(Estimated cumul. hazard functions: $\Lambda(t) = -\ln S(t)$)



The time to event occurrence medians are 30.8 months for parolees vs. 22.8 months for non-parolees. Towards the end of the observation period, the differences between both groups had dropped to 2.5% whereby the non-re-conviction quota of the parolees was 15.8%.

Since both groups deviate little from the overall distribution, the risk development patterns correspond essentially to that of the total sample (r.d.1) as already described.

An important variable, **the age at the time of release**, was included in the analysis since a series of recidivism studies have confirmed that the recidivism risk drops with age, and that, conversely, a higher propensity to recidivism can be observed among younger prisoners after release. Diagram 10.1 shows the estimated survival functions for 7 age groups and Diagram 10.2 shows the corresponding risk development patterns for r.d.1. in the form of an isopleth map.

Since several survival distributions overlap, the Lee/Desu test statistic is not applicable here. However, on the basis of the re-conviction patterns, the general tendency for re-conviction to decrease slightly with age can be recognized across all the age-groups. However, as can be seen from the pairwise test statistic, these differences are not significant. Significant differences (4.713; $p = .0299$) only occur between the first (20-25 years) and the third (31-35) age-group. The general tendency for age to have a weak effect can also be inferred from the medians of the "survival times". These medians are given in ascending order below for the age-groups (AG) 1 to 7: (AG 1: 19.2 months; AG 2: 22.7 months; AG 3: 30.2 months; AG 4: 24.5 months; AG 5: 30 months; AG 6: 33 months; AG 7: 34.5 months / 27 months altogether).

The proportion of those not re-convicted after 10 years is lowest (8.3%) in the lowest age-group (AG 5: 23.1%). Only conditional interpretations may be made for age-groups 6 and 7 since only few cases occur.

Isopleth mapping considerably facilitates comparison of the risk developments of individual age-groups (Diagram 10.2) since the intersecting planes are defined by a constant Λ - level increase. Such a comparison provides a few interesting clues which, in turn, support the aforementioned trend of the effect of age. The narrower the distances between the iso lines within a given time interval, the greater the risk increase and vice versa. Equal distances denote a constant, i.e., a time-independent risk.

First of all, it can be seen, that generally speaking, the most dynamic development of the re-conviction risks takes place in the first 3 1/2 years after release, at which point in time the Λ - level of 1.1 had been reached by almost all age-groups. This corresponds to 2/3 of the re-convicted. The median lies on the 0.7 Λ - iso line. This representation provides more conclusive evidence of the general tendency for the post-release re-conviction probability to be higher for young offenders than for

Diagram 10.1

**Recidivism process of career offenders
with reconvictions according to different
age-groups**

(Estimated survival functions: $S(t)=1-F(t)$)

- Age-groups:
7: = over 50 years old
6: = 46 - 50 years old
5: = 41 - 45 years old
4: = 36 - 40 years old
3: = 31 - 35 years old
2: = 26 - 30 years old
1: = 20 - 25 years old

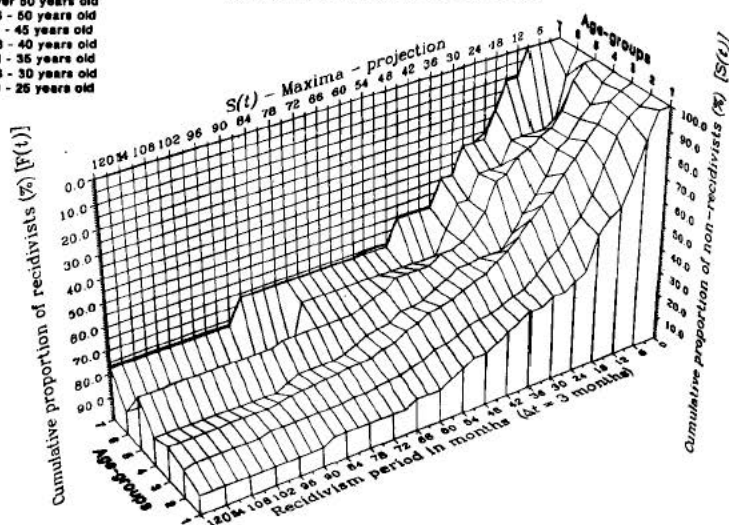


Diagram 10.2

**Recidivism process of career offenders with
reconviction according to different age-groups**

(Estimated cumul. hazard functions: $\Lambda(t)=-\ln S(t)$)

isopleth mapping: $\Delta(\Lambda\text{-Level})=0,1$

Age-groups:

over 50 years

46 - 50 years

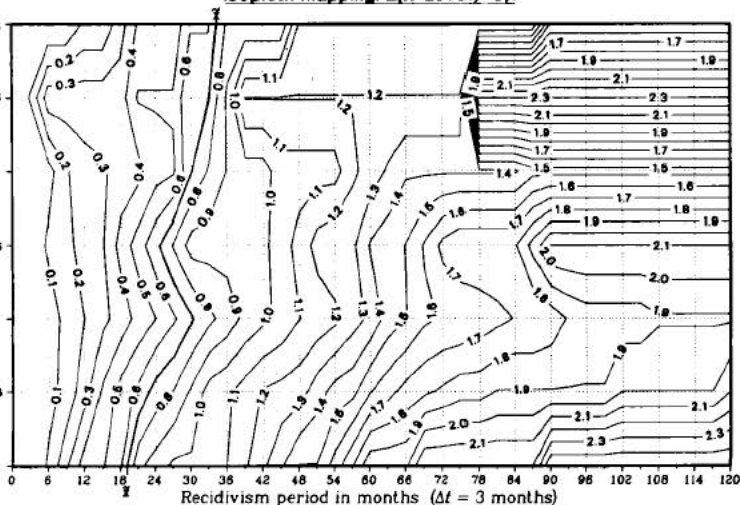
41 - 45 years

36 - 40 years

31 - 35 years

26 - 30 years

20 - 25 years



older offenders. The iso lines are much closer together between the point of release and the 30th month for the youngest age-group than is the case for other age-groups which also exhibit a descending trend. (The fact that the 46-50 year-olds showed a downright risk thrust in the first 6 months after release, is an exception which should be attributable to the small number of cases ($N = 10$)). After one year, the 0.4 λ - level had already been attained by the 20-35 year olds (one-third had already been re-convicted). The 26-30 year olds, on the other hand, had just exceeded the 0.2 λ - level (= 22% re-convicted) and the 31-35 year olds had just reached the 0.2 λ -level (= 18% re-convicted). If a dividing line is drawn after half of the risk period, the λ - levels of the age-groups, in ascending order, are as follows: AG 1: > 1.9 (85% re-convicted); AG 2: 1.6 (80%); AG 3: 1.35 (74%); AG 4: 1.4 (75%); AG 5: 1.25 (71%); AG 6: 1.2 (70%); AG 7: 1.1 (67%). This indicates that a weak effect of age can be ascertained in the direction described above. If age were to be included in the first conviction, its effect would supposedly be clearer.

At this point, however, we have arrived at the limits of this rather exploratory analysis using the life table method. Given that estimated survival functions cannot be compared for each hypothetically interesting variable, particularly since the sub-group members become smaller as the numbers of variables increase rendering estimates increasingly imprecise, the life table method is no longer expedient. Moreover, the latter does not facilitate the determination of the covariates' precise factors of influence.

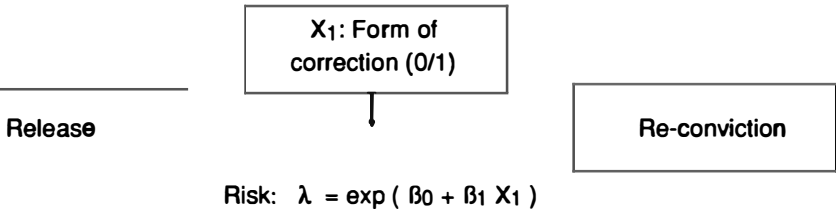
For the **remainder of the evaluation**, therefore, semi-parametric (Cox's Proportional Hazards Regression Model (1972)) or, even better, appropriate parametric models have to be taken into consideration. They are suitable for analyzing empirical data and provide regression techniques which facilitate more precise determination and testing of the effects of qualitative and quantitative covariates as well as the influences exerted by unobserved heterogeneity on risk development.

On the basis of existing empirical findings, especially the differences in the risk development patterns of both the treatment and the regular prison releasees ascertained in an exploratory manner, in addition to a relatively pronounced homogeneity with regard to relevant social-biographical background factors of the total sample, **there is some evidence supportive of the conclusion that the form of Imprisonment has at least a moderate main effect on the re-conviction risk.**

With respect to the model to be tested, this is taken into account by including the qualitative covariate "form of correction" using the categories: 0 = regular prison and 1 = social therapy (dummy variable).

Under the **working hypothesis** of times to response being independent of the re-conviction risks ($\lambda = \text{constant}$, Markov process) the effect powers of the two

correction forms on the risk λ can be specified in a regression-analytic manner for the **exponential model** as reference model.



For **r.d.1** (each re-conviction), the maximum likelihood estimations of the risk rates for both groups (0/1) yield the value: $\hat{\lambda}_0 = 0.0235$ and $\hat{\lambda}_1 = 0.0146$, ($\hat{\lambda}_{\text{total}} = 0.0198$). The effect powers are thus: $\hat{\beta}_0 = -3.751$ and $\hat{\beta}_1 = -.4753$.

Since the exponentiated $\hat{\beta}_1$ - **coefficient** records the **relationship** of both risk rates to each other,³⁹ from a content standpoint, there exist **distinct possibilities of interpreting the effects on the re-conviction risk**. It is thus possible, under the model assumption, to observe that the re-conviction risk of the prisoners released from social therapy (if all other covariates are held constant) is only 62.2% of the risk of those released from regular prison. This means that the **risk of the social therapy group is 37.8% lower than that of the regular prison group** [$(\exp(\hat{\beta}_1) - 1) \cdot 100 = 37.83\%$]. Seen from another perspective, the **re-conviction rate of the orthodox group is about 60.9% higher than the risk of the prisoners released from social therapy** [$((1 / \exp(\hat{\beta}_1) - 1) \cdot 100 = 60.85\%)$].

39 See Blossfeld et al. 1986, p.51 et seq. and 67 et seq.; Diekmann and Mitter 1984, p. 124. It is easy to compute the maximum-likelihood estimations for dichotomous covariables for the exponential model:

$\lambda = \exp(\beta_0 + \beta_1 X_1)$, which generates for the
 - Regular Prison Group (0): $\lambda_0 = \exp(\beta_0)$, and for the
 - Social Therapy Group (1): $\lambda_1 = \exp(\beta_0 + \beta_1)$.
 With the anti-logarithms $\alpha_i = \exp(\beta_i) \Leftrightarrow \hat{\beta}_i = \ln \alpha_i \Rightarrow \lambda_0 = \alpha_0$, $\lambda_1 = \alpha_0 \cdot \alpha_1$, the following estimations are yielded:

$\hat{\alpha}_0 = N_0 / (V_0 + W_0)$, $\hat{\alpha}_1 = (N_1 / (V_1 + W_1)) / \hat{\alpha}_0$, whereby:
 N_0 : Number of re-convictions in the regular prison group
 V_0 : Sum of the times-to-response of the regular prison group
 W_0 : Sum of the times-to-response of the censored cases in the regular prison group.
 This is also applicable in a similar form to the social therapy group (1). A precise differentiation of the maximum-likelihood estimation for this can be found in Diekmann and Mitter 1984, p. 198 et seq. The relationship between the two risk rates results from the above connection:

$\alpha_1 = \lambda_1 / \alpha_0$, because $\alpha_0 = \lambda_0 \Rightarrow \alpha_1 = \lambda_1 / \lambda_0$.

The significance test of the regression parameter $\hat{\beta}_1$ ($H_0: \lambda_1 = \lambda_0 \Rightarrow \hat{\beta}_1 = 0$) confirms this considerable risk difference between the two groups ($p < .01$).⁴⁰ Diagrams 11.1 and 11.2 demonstrate the risk developments for the entire observation period which are yielded on the basis of parameter estimations.

The parameter estimations for r.d.3 (re-conviction to imprisonment without probation) reveal even clearer and highly significant differences in the re-conviction risks of both groups, as can be recognized without great difficulty from the empirical estimations (see Diagrams 8.1 and 8.2). Here, the parameters are:

$\hat{\lambda}_{\text{total}} = 0.0099$, $\hat{\lambda}_0 = 0.0128$, $\hat{\lambda}_1 = 0.0059$, $\hat{\beta}_0 = -4.361$, $\hat{\beta}_1 = -0.7673$; $p < .01$. Consequently, the **risk of a re-conviction to imprisonment without probation of the prisoners released from social therapy is 53.6% lower than that of the regular prison group**. The proportion of the risk, accordingly, amounts to only 46.43% of the risk of the regular prison group. **Conversely, the regular prison group's risk of receiving a sentence of imprisonment without probation, is 115.4% higher than that of the social therapy group.**

Even with the reservation that the exponential model fits the data insufficiently, as can be seen from the graphic verification of the risk distribution assumptions in Diagram 11.2, the differences are still so significant that they cannot be interpreted as a model artefact. Other investigations, such as that undertaken by Allison,⁴¹ who carried out a secondary analysis of the recidivism data compiled by Rossi et al.,⁴² show that such a highly significant exponential model parameters remain highly significant even in other models which are more adapted to the data.⁴³

This clearly demonstrates the **advantage of parametric models**; the latter facilitate **clear, substantive statements** about individual covariate effects on the risk and it is theoretically possible to bring any number of covariates into the model and check their effects and that of the model itself, statistically. If the parameters are specified, it is also possible to specify the mathematical expectation value (mean), the variance, and the median of the times to occurrence immediately - a procedure which can be very useful from a prognostic viewpoint. For the exponential model presented here, the mathematical expectation value of the regular prison group for r.d.1 is $E_0(T) = 1/\hat{\lambda}_0 = 42.6$ months, compared with $E_1(T) = 68.5$ months

40 The significance test of the regression parameter $\hat{\beta}_1$ is carried out by dividing the latter by its estimated asymptotic standard deviation $s(\hat{\beta}_1)$. Under the null hypothesis $H_0: \lambda_1 = \lambda_0 \Rightarrow \beta_1 = 0$, this test statistic (z) has a roughly standard normal distribution:

$$z = \left| \hat{\beta}_1 / s(\hat{\beta}_1) \right|$$

With a significance probability of 0.01 and a two-tailed test, the amount must exceed 2.58 to be significant. An estimation of $s(\hat{\beta}_1)$ is yielded according to the above notation (see note 41) with:

$$s(\hat{\beta}_1) = ((N_0 + N_1) / (N_0 - N_1)) \cdot \cdot 1/2$$

For r.d.1, we are left with a z-value of -4.451 and for r.d.3, $z = -5.758$.

See Blossfeld et al. 1986, pp.88-89 as well as Diekmann and Mitter 1984, p. 130.

41 See Allison 1984, p. 27.

42 See Rossi et al. 1980

43 Also see Blossfeld et al. 1986, p.171 et seq.

Diagram 11.1

Recidivism process of career offenders with reconvictions according to different forms of correction

[Emp.: $S(t)$ and exponential model: $S(t)=\exp(-\lambda^*t)$]

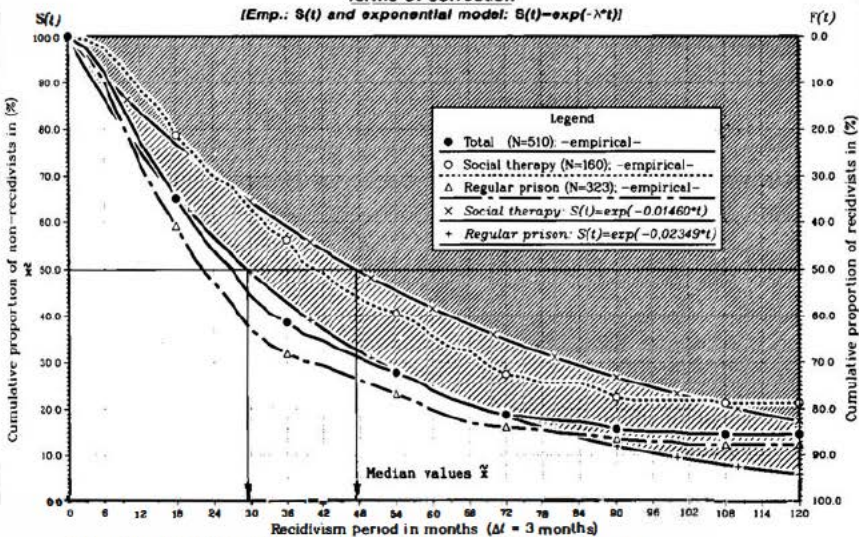
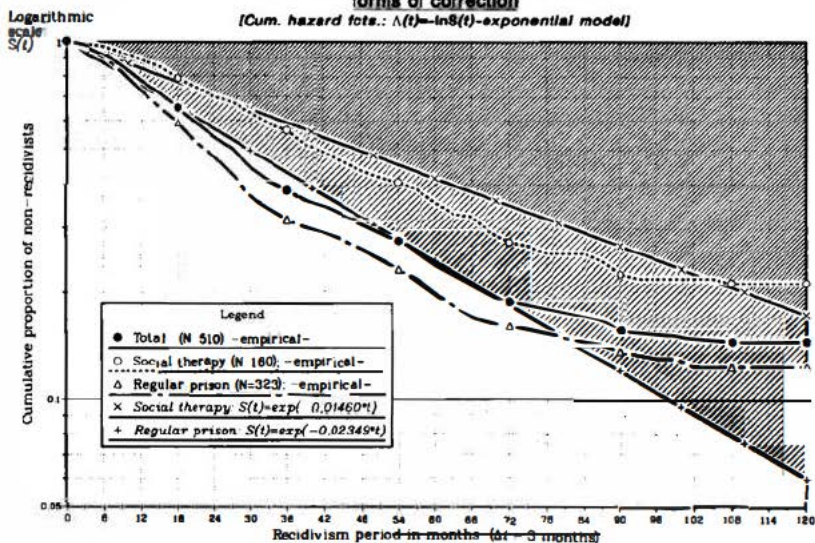


Diagram 11.2

Recidivism process of career offenders with reconvictions according to different forms of correction

[Cum. hazard fcts.: $\Lambda(t)=-\ln S(t)$ -exponential model]



for the therapy group. The medians of both groups can again be read directly from Diagram 11.1 ($\bar{x}_0 \cong 30$ months, $\bar{x}_1 \cong 48$ months).

In comparison with r.d.1, even greater differences in the mathematical expectations of both groups of released prisoners are revealed for the **third recidivism definition**, whereby the mathematical expectation values are particularly favourable for the social therapy group: ($E_0(T) = 78.3$ months, $E_1(T) = 168.6$ months, difference: 90.3 months). The medians also confirm these great differences: $M_0(T) = 1 / \lambda_0 \cdot \ln 2 = 54.3$ months compared with $M_1(T) = 116.9$ months.

If we analyze the mathematical expectation values and medians ascertained for **r.d.3** on the basis of the exponential model, as well as the empirically estimated survivor courses in Diagram 8.1, we find that the reference model, in this instance, leads rather to an **underestimation** of the empirical facts, i.e., that the real differences in the risk of both groups are in fact larger than those calculated. This finding also supports the above-mentioned assumption of a covariate influence of the "form of correction" on the risks of re-conviction.

Consideration of additional covariates - of essential importance, here, being social and legal-biographical features - facilitates a substantially more differentiated observation of the empirical differences between both forms of correction since the additional parameter estimations contain a great deal of information.⁴⁴

If, for example, the covariate "schooling" (qualified according to years of study and type of school-leaving certificate) were to be taken into account, and a β_s effect of -0.05 should result, it would mean that for **each additional school year**, the other covariates remaining constant, the re-conviction risk would drop by approximately 5%. **Simultaneously** including the covariates "therapy form" and "schooling" for the social therapy category (1), and adding one year of schooling, would yield a prognosis of a **55.8% reduction in the recidivism risk**: $[(\exp(-0.7663) \cdot \exp(0.05)^1 - 1) \cdot 100 = -55.84\%]$.

The main problem results from the process model specification, i.e. the choice of appropriate risk function distribution and (development hypotheses) which fit the data optimally. On the whole, the **exploratory hazard rate estimations** have shown that post-release risk development increases very rapidly in the first phase after release from prison, reaches the maximum after about 30 months and then initiates a gradual but constant decrease. The **log-logistic model** could be considered an appropriate form of distribution since its risk function possesses exactly the development characteristics:

$$\lambda(t) = \frac{\lambda \alpha (\lambda t)^{\alpha-1}}{1 + (\lambda t)^\alpha}, \quad S(t) = \frac{1}{1 + (\lambda t)^\alpha}, \quad \text{where } \lambda = e^{-\mu} \text{ and } \alpha = \sigma^{-1}. \\ \alpha > 1$$

⁴⁴ However, to what extent selection effects and/or initial differences of a different origin, between the social therapy group and those released from regular prison, are at the root of these differences in the risk, cannot of course be totally clarified or statistically controlled in this study; on this point, see Ortmann 1987, p. 384. At best, clues about the initial differences, according to social- and legal-biographical feature categories (homogeneity assumption), can be tested with the event analysis method. In other words, the effects of the individual covariates on the risk development of both groups should not show significant differences.

More in-depth analyses of the re-conviction processes will follow the methodological concepts of event history data analysis only briefly touched upon here. Within the framework of our subsequent analyses, relevant risk-intensifying and risk-mitigating factors (covariates) will be included in the log-logistic model and the latter then checked.

To sum up, we believe it will become obvious that time-related questions are of special importance, precisely in evaluating and forecasting the impact of social therapy programs. In this respect, event history analysis provides an especially appropriate and fruitful evaluation strategy.

7. Offence specialization and criminal careers

In the case of repeat offenders who have been in conflict with the law on a number of occasions, the question arises as to offence-specific specialization. This question is of special importance particularly with regard to serious violent crimes because of their dangerousness and also because it is interesting to observe to what extent behavior matches prognosis.⁴⁵ As long as we are dealing with convicts, as is the case in this investigation, it is not only the release prognosis with respect to a parole which is of import, but also the question of appropriate therapy in correctional institutions (e.g. social therapy measures). Moreover, according to the German Prison Law, liberalization measures such as work release and prison leave for one or several days are contingent upon such prognostic considerations.⁴⁶

In the present investigation, the first evaluation step dealt with the question of the offence-specialization throughout the observation period of 10 years, with special reference to the most serious offence responsible for the current imprisonment in the period 1971-1974. The representation of the general recidivism risk (cf. 3. and 4. above) is thus differentiated with regard to the similarity of the recidivism events.

A look, first of all, at Diagram 12 and Table 2, reveals that, in the total group of the 510 career offenders, a high risk of pertinent re-convictions only occurred for fraud, property, and traffic offences. If we take into consideration all of the recidivism re-convictions, 64% of the property offenders were re-convicted for at least

⁴⁵ On this point, see the studies on offence-specialization in the Federal Republic of Germany conducted by Steffen and Czogalla 1982; Steffen 1983; Walliser 1984; Weschke 1984; Oevermann, Schuster and Simm 1985.

⁴⁶ See, in particular the federal administrative regulations on §§ 11, 13, 15 and 35 of the German Prison Law (Strafvollzugsgesetz), with commentaries, inter alia, by Callies and Müller-Dietz 1986.

one new property offence in the 10 year period. In the case of fraud, the corresponding proportion is 56%, and in that of traffic offences 58%.⁴⁷ Whereas in these offence groups, re-conviction for a similar type of offence predominates, the opposite is true for robbery, bodily injury and sex offences. Only 11% of those who had been imprisoned for robbery were re-convicted for a similar offence within the 10 year observation period. In the case of bodily injury and sex offences, the proportions are somewhat higher, with a recidivism rate of 33% and 29% respectively. However, regarding the overall recidivism risk, 75% and 81% respectively, it becomes generally clear that most of these violent criminals subsequently commit offences in other areas - especially property offences and fraud. This is particularly true of the robbery offenders who, with a recidivism risk of 80%, were only re-convicted for a similar offence in one out of ten cases. The same trend can also be found among the 8 persons convicted for a homicide. 7 of them were later re-convicted for some type of offence, but none were re-convicted for a new homicide.

On the whole it becomes clear that in the field of **violent crimes** only very rarely does some degree of specialization exist which could confirm the picture of the dangerous repeat offender ("sex offender" etc.) occasionally painted by the mass media. Even in the case of repeatedly conspicuous career offenders, such offences more often appear to be unique episodes in the course of a career and, seen in terms of the entire course of the criminal career, they are quantitatively of secondary importance.

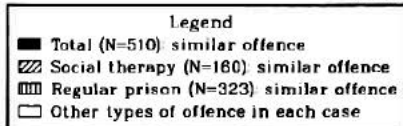
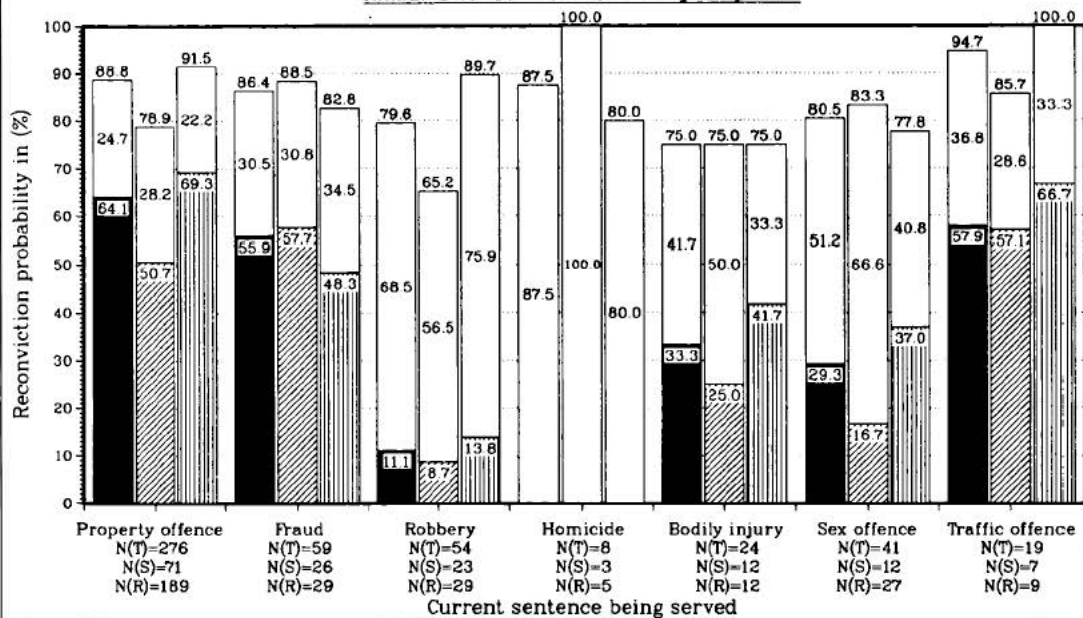
Further differentiation of offence-specialization among career offenders according to whether re-imprisonment (sentencing to a term of imprisonment without probation) followed as a consequence of a similar offence, yields the results illustrated in Diagram 13. 55% of the property offenders, 46% of the fraud offenders and 47% of the traffic offenders were re-convicted within the 10-year period for a similar offence. In the case of robbery, bodily injury and sex offences, the proportions (11%, 29% and 24% respectively) are correspondingly lower, as they also were for the total re-convictions (cf. Diagram 12).

In **comparing** prisoners released from **social therapy** or from **regular prison**, the clear differences already noticed in other steps of the analysis remain. Those who had received social therapy were significantly less likely to be re-convicted or re-imprisoned for the same offence (cf. Diagrams 12 and 13 as well as Tab. 2). Although, with the exception of the property and fraud offenders, we are dealing with relatively small, offence-specific sub-groups, the trends are nevertheless manifest and, moreover, statistically significant if we combine robbery, bodily injury and sex offences. The results seem to be of special importance insofar as social therapy

⁴⁷ However, the number of cases of traffic offences is very small (N = 19) so that no statements of a general nature may be made.

Diagram 12

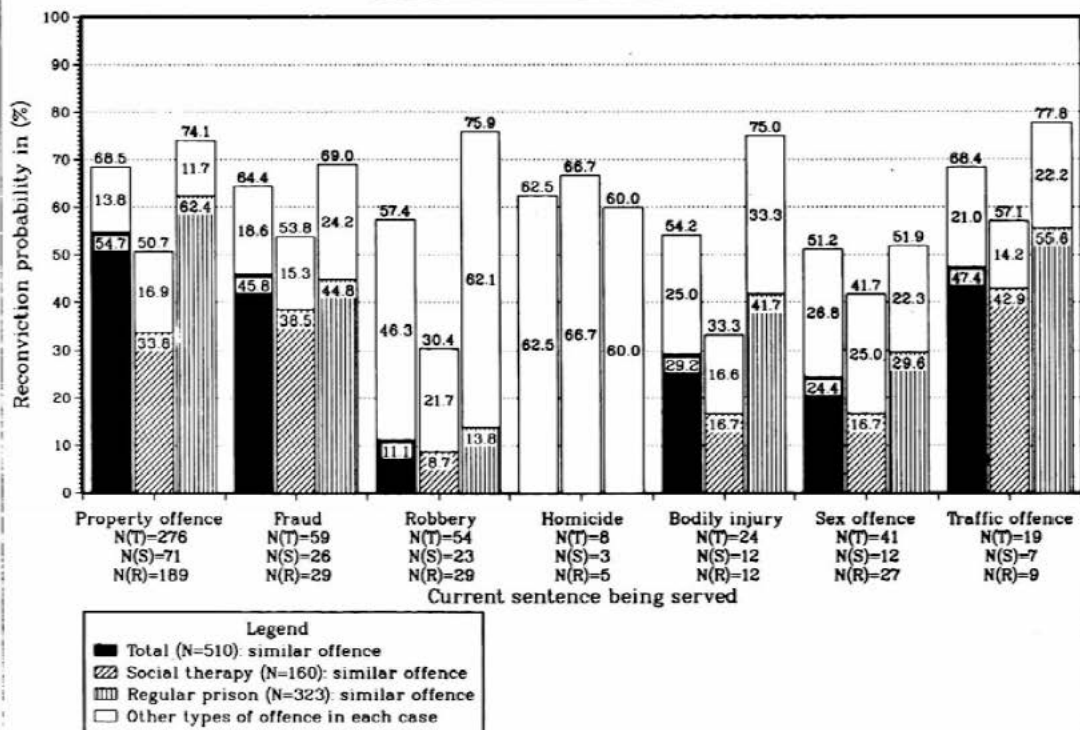
Offence-specialization of career offenders - reconviction probability with respect to a similar offence within the ten-year period



Released from Tegel Prison, Berlin, between 1971 and 1974, average risk period 10 years

Diagram 13

**Offence-specialization of career offenders -
re-imprisonment probability (imprisonment
without probation for a similar offence)**



Released from Tegel Prison, Berlin, between 1971 and 1974, average risk period 10 years

dealt with bodily injury and sex offenders who, on account of their personality structure and past legal-biographical development, could be considered especially difficult cases. The *ex post facto* release prognosis, with regard to the further perpetration of such offences, would thus be especially favorable in the case of those prisoners who had received social therapy. The trends relating to recidivism for a similar offence which can be observed in the case of property and fraud offenders, clearly diminish after a stay in social therapy. Only 34% of the property and 39% of the fraud offenders had committed such a serious case of recidivism for a similar offence that a re-imprisonment followed. In the case of property offenders who had served their sentences only in regular prison, the risk of re-imprisonment was almost twice as high (62%) as that of the social therapy group.

Further procedures, in particular multivariate analysis, will be applied at a later stage to investigate the phenomenon of offence-specialization in greater depth, incorporating the previous convictions as well as all offences responsible for the current imprisonment. The offence-specific transition probabilities, referring not only to the entire 10 year period but also to individual re-convictions, promise interesting insights into the courses taken by criminal careers. So far, our findings substantiate those of other career offender studies which point to evidence of a general lack of specialization in the case of violent crimes in contrast to property crimes. However, even where pertinent re-convictions occur, they call for a more differentiated observation, for example, with regard to the damage caused, the use of firearms and the like. In other words, greater attention should be paid to aspects of the dangerousness of such offences and/or the potential damage which can be caused to society.⁴⁸

8. Summary

The present study deals with **510** so-called **career offenders** who were in prison from 1971-1974 and whose **subsequent legal biography** was followed over a period of **10 years on the average**. The study revealed different distributions according to the various forms of treatment and release. Inmates who had served the last part of their sentences in a **social therapy unit** were **significantly less likely to be re-convicted**. Re-imprisonment occurred in **47%** of the cases whereas **70%** of those **offenders who were comparable** from the point of view of their legal- and social-biographical features, but who were released from **regular prison**, were

⁴⁸ These aspects will have to be investigated by other studies since they could only have been ascertained with the aid of very time-consuming evaluations of court records and the like.

sentenced to imprisonment without probation for new offences. **Differences in favor of social therapy** also came to light when the recidivism events were differentiated according to the **type** and **frequency** as well as the **temporal distribution of the re-convictions**. In each case, prisoners who had received social therapy were re-convicted less frequently, received lighter sentences and were re-convicted at a later point in time; only in rare cases did a re-conviction occur for serious violent offences. Although the latter offences were more frequently represented among the current sentences being served at the time of the study, re-conviction for such offences in the 10-year observation period was very rare and less frequent than among the inmates released from regular prison.

Above all, according to the form of correction, highly significant differences in the re-conviction risks were revealed over the entire follow-up period.

For example, the re-conviction risk - under the model assumption (see 6.) - was 38% lower for the social therapy group than for the regular prison group. The risk difference in favour of the social therapy group is even more marked in the case of sentences to imprisonment without probation and is about 53% below the risk for those released from regular prison.

Altogether, it is manifest that, also in the case of career offenders with substantial previous convictions, the potential with regard to serious violent crimes appears to be relatively small and that the career normally focuses on the perpetration of property offences and fraud, sometimes accompanied by traffic offences.

With regard to the **impact of social therapy treatment measures** in prison, it would seem **justified to assume** that this type of therapy has a **moderate main effect** on recidivism⁴⁹ despite the **limited meaningfulness** of the ex post facto design dictated by the methodological approach. This indicates that remarkable differences exist between the results of the evaluative research conducted in the Federal Republic of Germany and those of a number of Anglo-American studies. This could be due in part to the relatively favorable starting conditions enjoyed by social therapy in correctional institutions in the Federal Republic. At least at the beginning of the 1970's social therapy exhibited - independently of therapeutic treatment in the narrow sense of the phrase - clear structural differences from regular prison in terms of liberalization and greater openness of the correctional system.⁵⁰ In so far as the latter developed in the 1970's and 1980's,⁵¹ social therapy has fulfilled an outrider

49 This is especially the case of the meta-evaluation of the more than 10 studies conducted on social therapy in the Federal Republic by Lösel and Köferl 1987, p.393 et seq.; Lösel, Köferl and Weber 1987.

50 On the structural features which distinguish social therapy from regular prison, see Dünkel and Rosner 1982, p.358 et seq. for a comprehensive presentation; Kaiser, Dünkel and Ortmann 1982, p.198 et seq.

51 See Dünkel 1987, p.158 et seq.

function with respect to the humanization of the prison system in the Federal Republic. Aside from the fact that it opens up sorely needed correctional alternatives, social therapy's criminal-political significance lies in its ability to further reduce the deprivation of liberty, especially with the example of parole, as has also been implied in the present investigation. Clients of social therapy were able to obtain suspension of their sentences on probation twice as often as prisoners from regular prison without a concomitant increase in their recidivism quotas. On the contrary, the considerably lower recidivism quotas observed indicate that from the perspective of special prevention social therapy could prove beneficial.

Appendix

Table 1: Recidivism according to different forms of correction
(average risk period 10 years in %)

	N R	R M	C W	C M	R R
Social therapy (N = 160)	79.4	63.1	46.9	37.5	35.0
Transferred back (N = 27)	100.0	96.3	85.2	63.0	63.0
Social therapy and transferred back (N = 187)	82.4	67.9	52.4	41.2	39.0
Regular prison (N = 323)	87.6	78.9	70.0	59.8	55.7
Total (N = 510)	85.7	74.9	63.5	52.9	49.6

N R: Each new re-conviction

R M: Re-conviction to more than 3 months imprisonment or 90 day-fine units

C W: Conviction to imprisonment without probation

C M: Conviction to imprisonment without probation for more than 1 year

R R: Re-conviction as recidivist according to § 48 of the German Penal Code (old version)

Table 2: Offence-specialization among career offenders
(re-conviction probability with regard to a similar offence within the 10-year period (in %))

Current offence being served 1971-1974	Total career offenders (N = 510)			Social therapy (N = 160)			Regular Prison (N = 323)		
	Based on N =	Each new conviction	Conviction to imprison- ment without pro- bation	Based on N =	Each new conviction	Conviction to imprison- ment without pro- bation	Based on N =	Each new conviction	Conviction to imprison- ment without pro- bation
Property offences *	276	64.1	54.7	71	50.7	33.8	189	69.3	62.4
Fraud **	59	55.9	45.8	26	57.7	38.5	29	48.3	44.8
Robbery	54	11.1	11.1	23	8.7	8.7	29	13.8	13.8
Homicide	8	0.0	0.0	3	0.0	0.0	5	0.0	0.0
Bodily injury	24	33.3	29.2	12	25.0	16.7	12	41.7	41.7
Sex offences	41	29.3	24.4	12	16.7	16.7	27	37.0	29.6
Traffic offences	19	57.9	47.4	7	57.1	42.9	9	66.7	55.6

* theft, embezzlement and similar offences; ** and similar offences

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3

Sanctions,

Imprisonment and

Correctional Treatment

Deviant Behavior, Personality and Prisonization

Theoretical Remarks on the Relation between Deviant Behavior and Selected Personality Traits, with Examples from Empirical Studies¹

Rüdiger Ortmann

1. Introduction

This report goes back in the final analysis to a research project on the impact of correctional measures on prison inmates.² At first glance, this topic of research would seem to have little to do with theory formulation in the field of criminology and even less with theories and empirical findings about the relation between deviant behavior and personality.

It very soon becomes evident, however, that not even the question of the "success" of treatment measures can be carefully investigated in the absence of a theoretical reference system to classify the findings, provide criteria for measuring "success", and weight the unavoidable shortcomings in the research design.

Correspondingly, secondary analyses also regularly single out for patent criticism the internationally prevalent dearth of theoretical foundations in studies on the treatment measures carried out in correctional institutions.³

The work done by Lösel et al. gives a very good overview of the state of treatment research in the Federal Republic of Germany.

That of Laufer et al. presents a number of well-founded and replicable connections between personality features and deviant behavior. The ensuing analysis

¹ We would like to express our gratitude to the Deutsche Forschungsgemeinschaft for giving their support to the study.

² Ortmann 1987.

³ See Bailey 1966; Blass 1983; Laufer et al. 1982; Lipton et al. 1975; Lösel et al. 1987; Logan 1972; Martinson 1974; Sechrest et al. 1979.

made by the author (Ortmann 1987) makes amply clear that on the basis of the factors comprising the California Psychological Inventory and the findings about them reported by Laufer et al., very few (one or two) factors determine significant correlations between personality features and deviant behavior. Here seems to exist a broad, general factor which accounts for a considerable amount of variance.

Such a theoretical reference system must, of necessity, be offender-oriented since, in prison, only the inmate is available as a point of departure for corrective or supportive interventions.

Moreover, from a psychological standpoint, it is difficult to imagine that an individual's personality can have no causal and decisive influence on his behavior - including his delinquent behavior.

However, there is still no evidence for the direction of the theoretically and empirically relevant relations.⁴ It is to this issue that we shall turn our attention in this paper.

2. Theoretical remarks

This section is devoted to a discussion of a number of personality traits which - though for a variety of different reasons - the author considers worthy of the special interest of criminological research. This applies in particular to theoretical efforts in the field of criminality. We discuss the dimensions: extraversion, neuroticism, psychoticism, depressiveness, anxiety, excitability and aggressiveness although there is, of course, no possibility of doing so exhaustively.

The present section is preliminary to Section 4 of this report, where we describe those findings whose significance or lack of it for the further development of criminological theories is not readily evident without this section.

The first three dimensions - extraversion, neuroticism, and psychoticism - are of importance, first of all, in Eysenck's theory of criminality.⁵ One does not have to be an adherent of this theory for the study of Eysenck's reflections to be a profitable experience. Indeed, by virtue of the broad scope of his dimensions (level of types, secondary factors), it should be possible to detect substantial correlations to deviant behavior if there exists any theoretically substantiated relation between criminality and personality at all. In fact, it should be almost impossible to find personality attributes which fail to correlate essentially with the Eysenck dimensions.

4 See Kaiser 1980.

5 See Eysenck 1976, 1977, 1981; Eysenck and Eysenck 1976, 1985.

This also holds for the remaining personality traits enumerated at the outset. They all correlate to a large degree with Eysenck's dimensions, but - conceptually and theoretically - are not identical with them. Anxiety and neuroticism - as shall be proven later - correlate to a very high degree. However, anxiety differs from neuroticism as it differs from depressiveness which, conversely, exhibits a high correlation with neuroticism.

The question of central interest to us is which of the personality traits should be singled out for in-depth study by criminologists in quest of a theoretical relation between personality and deviant behavior.

In the following we discuss briefly the above-mentioned personality traits in the order established above.

2.1 Extraversion versus introversion

The two main components of the extravert pole of this dimension which Eysenck sees as universal, are sociability and impulsivity. In detail he describes the extravert pole as: sociable, lively, active, assertive, sensation-seeking, carefree, dominant, surgent, venturesome.

According to Eysenck, the conscience has a central, if not the central role "...in making us behave in a moral and socially acceptable manner...".⁶ The conscience, he argues further, is the result of a protracted conditioning process. Extraverts "...are more likely to turn to crime because their poor conditionability... tends to prevent them from acquiring social rules as introverts".⁷ For the "poor conditionability" of extraverts he gives psycho-physiological reasons which are of no significance in the present context.

This is the core of Eysenck's theory of criminality. In criticizing the latter we would not - as often and convincingly done elsewhere - focus on the biological basis, but would turn our attention chiefly to the dominant position of the conscience.⁸

2.2 Neuroticism versus emotional stability

Eysenck sees this dimension, too, as being universal. The term "neuroticism" denotes a tendency to neurosis. Neuroticism does not correlate with extraversion - at least not according to the theoretical objective. It comprises two main components: depression and nervousness.

6 Eysenck 1977, p.130.

7 Eysenck and Eysenck 1985, p.330.

8 See Ortmann 1987, p.95 et seq..

The correlation between neuroticism and anxiety is about .7. Eysenck purports that the drive component included in anxiety supports and reinforces habits which are very high up in the habit hierarchy. He obtains the requisite support for his contentions from Hull's theory of learning.

In this way - according to Eysenck - neuroticism reinforces the unsocial habits of the extravert and the latter's proclivity to deviant behavior is supported by neuroticism. In keeping with this theory, neuroticism does not influence deviant behavior independently, but does so only by interaction with extraversion.⁹

This combination - high on extraversion, high on neuroticism - is defined by Eysenck as secondary psychopathy. According to the theory, a secondary psychopath is especially prone to deviant behavior. Eysenck mentions three primary factors characteristic of this type: antisocial and aggressive behavior; serious emotional frustration; strong internal conflicts.

He summarizes his theory concerning extraversion and neuroticism as follows:

$$\text{criminal behavior} = E \cdot N$$

However, we understand this equation to be valid only for the influence exerted by the neuroticism component. With respect to extraversion, we believe that the equation should be as follows:

$$\text{criminal behavior} = E$$

2.3 Psychoticism versus impulse control

This is Eysenck's third dimension. Psychoticism - the tendency to psychosis - is described by him as: aggressive, cold, egocentric, impersonal, impulsive, antisocial, unempathic, creative, tough-minded.¹⁰

One should not be taken in by the heterogeneity of the descriptions. It has been amply proven that this and the other two Eysenck dimensions are indeed dimensions, i.e. relatively homogeneous characteristics for which individuals have different measurements which are highly reliable and reproducible.

Our attention is caught by the explosive combination of aggressiveness and impulsivity in the description of this dimension. We shall return to it later on.

Despite the conceptual proximity to psychiatry which, especially for criminology, is all but felicitous, one must start from the assumption that the dimension is universal: in every individual a certain amount of psychoticism is inherent.

⁹ See Eysenck 1976, p.120; Eysenck and Eysenck 1985, p.330.

¹⁰ Eysenck and Eysenck 1985, p.14.

The (new) Freiburger Persönlichkeitsinventar FPI-R (Freiburg Personality Inventory) - whose predecessor, the FPI, will be described below - includes one secondary factor (along with two others) which is characterized by aggressiveness, excitability, and openness and which appears to exhibit significant correlations with Eysenck's psychoticism dimension. This emphasizes not only the "normality" of the dimension in principle, but also stresses its possible significance.

Although Eysenck contends that psychoticism supports proclivities to deviant behavior, we have been unable to find any theoretical attempt at substantiating this postulated connection in his work.

In a summary from 1985, Eysenck states that criminal and antisocial behavioral patterns show a tendency to be exhibited by individuals who are high on extraversion, neuroticism and psychoticism.¹¹

2.4 Depressiveness

As we have seen, depressiveness is a component of neuroticism. Correspondingly its correlation with neuroticism is high (and, also, with anxiety).

Predominant in this case is first of all the depressive emotional state. Additional aspects include a self-critical and strict appraisal of the individual's own life (and sometimes even guilt feelings), experienced difficulties in social intercourse, day-dreaming, brooding, worries and - fear. The motivations to act are poorly developed and social behavior limited.

Because of the high correlative proximity to neuroticism, and also to anxiety, it is difficult to imagine that such a theoretically founded relation between neuroticism and anxiety and deviant behavior exists, while none can be found between depressiveness and deviant behavior. Consequently, we think that this is sufficient reason to investigate depressiveness within this topic.

With the aim of analyzing the theoretical basis of a possible connection between depressiveness and deviant behavior, we judge it appropriate at this point in time - this restriction is necessary - to use as our point of departure Seligman's theory of learned helplessness.¹²

This theory also makes important statements about anxiety and aggressiveness which are suitable for integration. We shall refrain, however, from dwelling on this aspect here.

In the main, the theory states that under specific conditions (we shall return to this later) individuals learn that deliberate action is futile. The theory purports that the individual concerned therefore behaves passively (helplessly) even in those sit-

11 See Eysenck 1977; Eysenck and Eysenck 1985, p.330.

12 Seligman 1979.

uations where deliberate action would not be futile. Helplessness as the result of the learning process ensues when an individual learns that his/her own actions and the consequences thereof are independent of each other. This results in depressiveness. The central terms employed by Seligman in this context are "lack of predictability" and "lack of controllability".

We would like to show quite briefly that Seligman's theory could make a productive contribution to our topic: the expectation that the consequences of one's own actions are not predictable or controllable, could mean that:

1. Plans of action very quickly vanish into the realms of the impenetrable.
2. Attention and activities remain restricted to the immediate personal environment. This could also lead, at some point in time, to financial difficulties.
3. Deviant behavior - not unlike other types of behavior - appears as a result of inaccurate calculations.
4. Imprisonment as a possible aversive consequence of deviant behavior has less significance than for other individuals (because of 1. and 2.).
5. Behavioral consistency is reduced. For, if according to the individual's expectations, consequence X will in all probability not supervene as a result of action A, attempts will probably be made to produce it with action B or C. If this trend is followed, there is a possibility that the individual will arrive at D, a form of deviant behavior. This "trial and error" method is not chosen by other individuals who have more fixed habits.

2.5 Anxiety

Anxiety correlates to a high degree with neuroticism and depressiveness. In Eysenck's theory of criminality, it functions as a reinforcer of extravert tendencies to deviant behavior. In addition, Eysenck's psychoticism is described as the absence of anxiety.

Gray has developed an alternative theory to Eysenck's extraversion-neuroticism theory which has received a great deal of attention; in it anxiety is included as a factor.¹³

Gray maintains Eysenck's extraversion and neuroticism coordinates but inverts the system. His anxiety progresses (from low to high values) from stable extravert-emotional to introvert-high on neuroticism. His second factor - impulsivity - progresses (from low to high values) from stable introvert-emotional to extravert-high on neuroticism. He claims that Eysenck's system is not the expression of psychophysiological functional units as should be the case according to Eysenck contentions - an assertion which is, indeed, of major importance for Eysenck's theory of criminality.

¹³ Gray 1981.

According to Gray, there are two neurophysiological systems which are largely independent from each other and should be understood as having a causal effect on his factors. The first system is said to be determined by an individual's receptivity "...to signals of punishment, signals of non-reward and novelty".¹⁴ This increased receptivity (anxiety factor) is to be found in introverted persons. Gray contends that the second system influences receptivity "...to signals of reward and signals of non-punishment".¹⁵ (impulsivity). The system - which is also discussed in depth by Eysenck - has a direct reference to criminology.

Further, anxiety is a secondary factor in Cattell's personality factor system.¹⁶

Three of the single factors which go into Cattell's secondary factor "anxiety", correspond largely to Freud's conception of the origin of fear: ego strength, guilt feelings, drive tensions.¹⁷

The author's work has revealed that personality characteristics which, in selected dark field studies showed significant relations with dark field delinquency, can be divided into two main groups with the aid of the anxiety construct: nervousness, depressiveness, excitability, inhibition (group 1, convergent validity) and aggressiveness and openness (group 2, discriminant validity).¹⁸

These are sufficiently good reasons for anxiety to be taken into account.

Some characteristics of fear (as a state) and/or anxiety (as a trait) are:¹⁹

- The feeling of being threatened and worried
- Nervousness and tension
- Trembling, heart trouble, sleep disturbances
- Avoidance tendencies
- Experienced evidence that no possibilities of reasoning or acting are at one's disposal to cope with a danger or threat
- Confused suspicions of a potential threat to subjective values

In all individuals, fear has a protective function which is essential to survival: it warns of dangerous or potentially dangerous situations and developments, activates the individual and thus triggers off actions in response to the danger signals.

We are of the opinion that this anthropological status attributed to fear (as a state) is sufficient for fear to be stressed in the theoretical context in comparison with neuroticism and depressiveness (which, in addition, correlate to a high degree

14 Gray 1981, p.261.

15 Gray 1981, p.261.

16 On Cattell's personality system, see Cattell and Dreger 1977; Cattell and Scheier 1961; Cattell et al. 1970.

17 See Amelang and Bartussek 1985, p.355.

18 See Furnham 1984; Lösel 1975; Lösel and Wüstendorfer 1976; Villmow and Stephan 1983; Walter et al. 1975.

19 See Fridrich 1987.

with anxiety). Any approach to neuroticism and depressiveness should (also) take place via anxiety. Moreover, in this context it seems important that psychoticism also signifies absence of anxiety.

The activation of an individual through fear-producing signals corresponds to an arousal of the organism. Using this as a starting point, Epstein understood fear as a special form of arousal. Arousal (as a state) and/or excitability (as a trait) are also of significance for other features (such as those briefly outlined above or others yet to be discussed). We shall therefore proceed to outline Epstein's ideas on arousal in the next point.

Via arousal and excitability a theoretical approach to the understanding of possible connections between anxiety and deviant behavior could exist. This approach should - in so far as it may be deemed productive - then be applied likewise to depressiveness (and deviant behavior) as well as to neuroticism (and deviant behavior).

Since with reference to depressiveness (and - even though not dwelt upon here - to anxiety) Seligman's theory of learned helplessness could already serve as a promising approach, systematic efforts should perhaps be undertaken (in the future) to determine the status of excitability in Seligman's theory.

A second theoretical approach to understanding possible relations between anxiety and deviant behavior could be inferred from one aspect of Atkinson's theory of achievement motivation.²⁰

According to this theory, anxious individuals avoid tasks of average difficulty. For fear of failure, they prefer to choose either very easy or very difficult tasks: easy tasks are performed successfully and failure at very difficult tasks does not imply a personal failure; indeed, the task was so difficult that one could not possibly expect it to be solved.²¹

The choice of tasks of an extreme degree of difficulty could - in our opinion - raise the risk of deviant behavior by leading to an increased frequency of failure. Not unlike the choice of very easy tasks, it does not contribute towards coping with typical problems of everyday life.

By means of this general thesis which will not be further explicated here, the following prognosis could be made with respect to anxious persons.

The offence which they prefer is characterized by an extremely high degree of difficulty; they choose either minor, very minor offences or offences at which they cannot but fail. In the first variant, it should be evident that the successful perpetration of the offence (for example, petty theft) only contributes in the short term to the solution of problems of everyday life whereas, in the second variant, it should be

²⁰ Atkinson 1975.

²¹ Atkinson 1975, p.398.

evident that the offence requires a level of planning and implementation skill that only few persons possess.

2.6 Arousal, excitability

In Epstein's work (too) arousal has the function of changing attention.²² A small increase in arousal leads to an improvement in attentiveness, a greater increase leads to its reduction (Epstein). Experienced as unpleasant, severe states of arousal activate defence mechanisms which appear to inhibit the arousal.

One form of inhibition is habituation. Through habituation to new stimuli - and many experts concur with Epstein in this respect - the intensity of the reaction to that of the arousing stimulus (for example the barking of a dog) declines. Instead, the meaning (indicative nature) of the stimulus (hair standing on end) is increasingly recognized. The arousal consequently shifts from the intensity of the signal (barking) to the advance warning signal (hair standing on end) which has developed as a result of expectations.

This creation of expectations has three functions:

1. It advances the arousal reaction in time (the latter takes place much earlier than the reaction originally triggered off by the stimulus intensity).
2. It is responsible for the creation of an association (what happens when).
3. It goes hand in hand with a decline in the increase of arousal.

Advancing the reaction in time enables (because of 3.) modulated action. If no expectations have been built up, the individual is suddenly and unexpectedly confronted with the "situation" and modulated action is thus rendered more difficult.

This means that persons with higher excitability could act nearer and more frequently in response to the primary arousing stimulus (barking of the dog or a situation which is difficult to control) and react less frequently to advance warning signals.

This perspective could be significant for all personality features to which excitability contributes decisively (for example, aggressiveness).

In the case of anxiety, an avoidance tendency supervenes upon the component of arousal. In the light of the above, anxious persons could be expected to develop expectations about the dangerousness of a situation at a particularly early stage. This could also lead to deficient training in those states of arousal which are triggered off by stronger stimuli (poor habituation). Should anxious individuals fail

²² Epstein 1967, 1972, 1976.

in the attempt to evade (through avoidance) the situation which is experienced as menacing, they might be led (because of the lack of habituation) to exhibit an unusually strong intensity of emotion and an uncommonly strong reaction. The "mid-field" of trained behaviors would be missing. Extreme reactions could predominate: avoidance and evasion versus a dramatic emergency reaction.

2.7 Aggressiveness

A theoretical classification of aggressiveness could probably use the two following concepts as points of departure:

- The involvement of arousal or excitability as already became clear in the course of the description of the psychoticism dimension.
- The relative absence of fear and anxiety.

3. Variables, survey instruments, and study design

This report is mainly concerned with features of the personality. All the remaining features simply serve to delineate the area of personality which is relevant to deviant behavior. For easier reading, these features will be described when they become necessary for studying personality features in the evaluation. This applies in particular to the very complex and complicated topic of prisonization.

The personality sphere is represented in this study by the Freiburg Personality Inventory (FPI)²³ a questionnaire which is eminently suited for testing the questions which are of interest to us here. It largely corresponds, in terms of the scope and type of features covered, to Cattell's 16-PF or the California Psychological Inventory.²⁴ Indeed, comparative investigations of FPI and 16-PF, for which there is a standardized version in German, have already been published.

The designers have successfully attempted, like Cattell and Eysenck, to measure relevant personality factors. There is no doubt as to the high quality of the procedure with respect to the research method.

The procedure consists primarily of 9 scales (FPI 1 to FPI 9), which were constructed in the final phase of the designing process both according to item metric and factor analytic criteria. Factor-analytically, 9 factors, each of which are statistically independent from each other (orthogonal factors), were extracted to produce the 9 scales. In practice, however, these scales are no longer independent since

²³ Fahrenberg et al. 1984.

²⁴ Gough 1975. See also footnote 3.

the items are alternatively (1, 0) computed within one scale for "true", "not true", although they in fact correlate with several factors.

Using the items on the 9 scales, 2 additional scales were constructed - extraversion and neuroticism. These additional scales are not secondary factors (the primary factors do not correlate). They correlate - as desired - sufficiently high with Eysenck's extraversion and neuroticism.

The scales themselves will be discussed when the findings are presented.

For the purposes of this study, the FPI had over 400 tests from inmates of the Berlin-Tegel penitentiary at its disposal. These were administered as part of a research project on correctional treatment.

According to the design, three points of measurement were scheduled. The findings presented here refer to the first of these points.

4. Findings

In the following we shall touch upon a number of findings which are appropriate for testing theoretical assumptions about the connection between personality and deviant behavior.

4.1 Factorial structure: anxiety (factor 1) and aggressiveness (factor 2)

We must first examine whether the data structure permits any interpretation at all in terms of anxiety as the first and aggressiveness as the second main direction. An empirical confirmation of this hypothetically postulated structure is indispensable. It makes an appreciable difference whether a data structure only emerges as the result of technical methods and is subsequently - as far as possible - endowed with theoretical meaning or whether given technical methods, as is the case here, are predominantly employed to look into relations indicated beforehand by theory.

The data, collected from at least 400 inmates of the Berlin-Tegel penitentiary with the aid of the Freiburg Personality Inventory (FPI), were subjected to a factor analysis.

The latter analyzes the correlation matrix of the initial variables (in our case: items from the FPI - scales 1 to 9) and produces in each case (independently of the theoretical reasoning behind the calculation) factors which are supposed to reproduce the correlation matrix as "simply" as possible. The factors themselves are constructed from the initial variables. The correlations of the initial variables with these factors define the latter and facilitate their "interpretation".

The factor analysis method chosen by us produces factors which are independent from each other (orthogonal). This, too, has been predetermined by theory.

Table 1 on the next page shows that the factor analysis has worked out the data structure, which theoretical analysis has led us to expect, in a succinct manner. This is a significant, albeit insufficient, confirmation of the theoretical assumptions.

We shall begin with the identification of the first factor (F 1, feature 12). It correlates - and in each case highly - with central components of anxiety. These are, first of all, nervousness (.73), depressiveness (.75) and inhibition (.86). Excitability is, in keeping with the theoretical assumptions, also well represented (.48).

Although the factor correlates highly with depressiveness and neuroticism, it is not identical with them. This finding, too, matches the theoretical assumptions.

In the Eysenck system it can be located more or less where anxiety is to be found: a high positive correlation with neuroticism and a low negative correlation with extraversion. Therefore the construct can readily be described on the extraversion-neuroticism level. However, both theoretically and empirically, it cannot be said to be identical with either of these Eysenck factors.

The second factor (F 2, feature 13) is marked by aggressiveness (.74), excitability (.72), dominance (.76) and openness (.53). The contribution of the feature excitability to this construct is exceptionally high. This emphasizes, beyond the theoretically expected findings, that excitability merits an independent investigation in criminality theory analyses.

The components of the construct produce a highly explosive mixture with an aggressive slant. Let us attempt to imagine an individual with a high value in factor F 2: emotionally, he becomes aroused very quickly and very strongly; the arousal has an aggressive slant directed at the decisive assertion of his own needs and opinions which are frankly or openly indulged in. Such an individual could often and quickly achieve intensities of emotion which neither he nor his social environment are capable of handling in a differentiated and modulated fashion.

Descriptively, this factor reveals strong correlations with Eysenck's psychoticism dimension.

The factor F 2 identified here is not very well described by "aggressiveness". The explosive, forceful and outwardly-directed elements are inadequately expressed by the concept of aggressiveness. Aggressiveness is, in any event, merely one of several features comprising this construct. When the construct aggressiveness is described in this study as a factor, it is qualified by the addition F 2.

Moreover, aggressiveness (F 2) corresponds well (descriptively) with one of three secondary factors computed from the scales of the new Freiburg Personality Inventory (FPI - R). This secondary factor is characterized by aggressiveness (as a single feature), excitability and openness; it provides a further indication of

Table 1:²⁵ Correlations between personality features

	10	11	12	13
1 Nervousness		58	73	
2 Aggressiveness	27	27		74
3 Depressiveness		87	75	35
4 Excitability		52	48	72
5 Sociability	75	-36	-67	25
6 Imperturbability	33	-31	-53	
7 Dominance		31		76
8 Inhibition	-33	56	86	
9 Openness		32		46
10 Extraversion			-48	53
11 Neuroticism			77	35
12 Anxiety (F 1)	-48	77		
13 Aggressiveness (F 2)	53	35		

the meaning of aggressiveness (F 2) since the secondary factors have a very broad scope.

The authors of the FPI-R test, Fahrenberg et al., note that the above-mentioned secondary factor (FPI-R-II) produces "... a picture of aggressive excitability with egocentric traits"²⁶. We would like to go along with this designation of the factor and introduce the abbreviation "aggressive excitability" as a synonym for aggressiveness (F 2).

From Table 1 the relationship between aggressiveness (F 2) and extraversion and neuroticism can also be inferred: F 2 is located partially on the extraversion-neuroticism level. However, it stands out clearly from it and covers proportions of variance which are covered neither by extraversion nor by neuroticism. F 2 thus lies to a great extent beyond Eysenck's original criminality theory.

In the columns of Table 1 we can see that extraversion is primarily defined as sociability. In contrast, there is a clear decrement in the impulsivity component of extraversion. Correspondingly, relations between extraversion and deviant behavior should be theoretically depicted primarily via the sociability component. However, it will most likely be no easy task to put forward reasons why the more

²⁵ The factor analysis was carried out with the items of the FPI. However, these tables illustrate the correlations of the scales (1 to 9) with the factors. This simplifies the illustration of the **meaning** of the factors.

²⁶ Fahrenberg et al. 1984, p.29.

sociable person should exhibit a stronger (or weaker) tendency to deviant behavior than someone who is less sociable. Correspondingly, it will come as no surprise that the relation between extraversion and deviant behavior is, at best, weak.

In Eysenck's system, neuroticism comprises two main components: depressiveness and nervousness. This is well in line with the findings of Table 1. Correspondingly, analyses of the theory of criminality could use both of these individual components, but in particular depressiveness, which is dominant, as a starting point.

According to Table 1, neuroticism differs from anxiety in that the involvement of nervousness and inhibition in the latter is patently higher. All the same, the correlation between both dimensions is very high (.77).

Much lower are the correlations between aggressiveness (F 2) and extraversion and/or neuroticism (.53 and .35 respectively). The two positive correlation coefficients imply that part of the aggressiveness (F 2) variance is accounted for by extraversion and neuroticism. Persons who are high on both the extraversion and neuroticism scales should also be high on the aggressiveness (F 2) scale. Thus, in that proportion which can be depicted on the extraversion-neuroticism level, the factor describes the summary of Eysenck's original theory of criminality: high extraversion and high neuroticism. This also means that the factor is partially suitable for testing Eysenck's prognosis that the tendency to deviant behavior is strongest in the presence of high extraversion and high neuroticism.

However, such a connection - when it occurs empirically - should, in our opinion, be interpreted theoretically as defined by Eysenck, only when extraversion is involved to a sufficiently high degree in the achievement of the results: extraversion must make a contribution to deviant behavior, independently of neuroticism. If this is not the case, then Eysenck's theory of criminality on extraversion and neuroticism collapses.

All in all, with respect to the relation with deviant behavior, the expectation might reasonably be entertained that extraversion would at most be weakly represented. Relations which emerge with respect to neuroticism should show the same trend with respect to anxiety even if they are to be interpreted differently from a theoretical point of view. Conversely, relations which appear for anxiety should also show the same trend with respect to neuroticism. Aggressiveness (F 2) should reveal relations which do not emerge for any of the other three dimensions: the factor should make an independent contribution to an explanation of deviant behavior.

4.2 Relation of anxiety and aggressiveness (F 2) to other features: indications of the validity of the construct

4.2.1 Risk-taking / venturesomeness

This feature²⁷ has a correlation of about .33 with extraversion, -.27 with neuroticism and -.41 with anxiety. In terms of absolute value it correlates with none of the scales constructed of FPI items higher than it does with anxiety. Anxiety here is the most appropriate scale for representing venturesomeness. This is an indicator of the relative validity of anxiety in accounting for deviant behavior.

4.2.2 Delay of gratification

This feature²⁸ has a correlation of the order of -.41 with the second factor - aggressiveness. In terms of absolute value, the correlation is high. Delay of gratification correlates with none of the FPI variables (in terms of absolute value) to a higher extent than it does with aggressiveness (F 2) - a clear indication of the validity of aggressiveness as a factor in accounting for deviant behavior.

The correlation implies that an aggressive component (F 2) is contained in the absence of any delay of gratification and that, conversely, an absence of delay of gratification is contained in the aggressiveness factor. Accordingly, the aggressiveness factor also means that needs are satisfied right away. The time perspective seems to be short and so is the patience. The emotions involved are strong (owing to excitability) and attempts are made to gratify them rapidly (no delay of gratification), frankly and directly (openness) and with the readiness to push obstacles to the side without much ado (aggressiveness).

We can see that, in this context, the factor denotes something totally distinct from the term aggressiveness as used in colloquial language.

4.2.3 Resocialization motivation

In the context of a study about the success of treatment measures in correctional institutions, the willingness of inmates to participate in the prison program is also of theoretical importance. For the topic which is being addressed in this paper, this theoretical aspect is, however, of secondary importance. Of interest

²⁷ This feature was measured with a (slightly modified) scale borrowed from Schwenkmezger (1977). The reliability coefficient of .74 is sufficiently high. On the feature of risk-taking/venturesomeness see, also, Schwenkmezger 1983.

²⁸ This feature was measured with the Utz scale (1979) (reliability .79).

here are primarily the integrative possibilities of the secondary factors for a theoretical analysis of the events. The question is whether one's own opinion of treatment in correctional institutions should be developed and defended on the level of individual features or rather - and this is our opinion - on the level of comprehensive components. If one is of this opinion, it is natural to ask which thematically comprehensive aspects (in this case: secondary factors or features with comparable degrees of abstraction) should be to the fore of the analysis.

The subtopic of resocialization motivation will be addressed here for the personality and achievement spheres. The sphere was covered by some 30 items.²⁹ Two typical items are: "a feeling of being unhappy" and "lack of interest in one's profession". The interviewee rated himself for each of these items according to the extent to which he felt himself deprived (deprivation) in this respect and how strong his desire was to receive help from the prison staff in this context (desire for support). This produces two scales (reliability in each case approximately 0.90).

Table 2 illustrates the correlations of these two scales with the personality features of the FPI. As can be seen:

1. The intensity of the experienced deprivation is best expressed in the anxiety factor. The correlation is very high (.64).
2. Similarly, the desire for support is also manifested above all in the anxiety factor.
3. Neuroticism is - as is to be expected because of points 1 and 2 - prominent, but not as strong as anxiety.
4. Extraversion is of comparatively minor significance.
5. Aggressiveness (F 2) is present but not more so than extraversion.

For the topic of our paper this means that the resocialization motivation sphere is very well and - in our opinion - best discussed using the anxiety factor. The factor is more appropriate for the analysis than Eysenck's extraversion and neuroticism dimensions. Moreover, it is evident that the psychoticism dimension (Eysenck's third analytical category) must be manifestly less explanatory than the anxiety factor.

The relative weight of anxiety (F 1) in comparison with aggressiveness (F 2) also substantiates the theoretical productiveness of the path embarked upon here: inmates with high F 2 values are more difficult to reach via treatment programs in penitentiaries than inmates with high anxiety values. In the context of the aggressiveness factor, this should make us wary of the chances of prison treatment programs. Each theoretically and empirically well-founded correlation coefficient for "deviant behavior" and "aggressiveness (F 2)" is at the same time a theoretically

²⁹ The original design of the Kieler Änderungssensitive Symptomliste (Zielke 1979) (reliability .92), was kept, the contents was slightly modified.

and empirically well-founded reason for skepticism about news of success with regard to prison treatment programs.

Table 2: Personality and resocialization motivation: correlations

		Personality and Achievement Sphere:	
		Deprivation	Desire for Support
1	Nervousness	.54	.29
2	Aggressiveness		
3	Depressiveness	.43	.32
4	Excitability	.40	.35
5	Sociability	-.42	
6	Imperturbability	-.32	
7	Dominance		.22
8	Inhibition	.55	.29
9	Openness		.35
10	Extraversion	-.28	
11	Neuroticism	.53	.31
12	Anxiety	.64	.34
13	Aggressiveness (F 2)		.26

4.2.4 Biography and intelligence

In this section, we shall be referring to correlation coefficients shown in Table 3. To give an idea of the size, the coefficients are based on at least 150 pairs of values and there are over 400 pairs of values for the prior convictions as juveniles, prior convictions as adults, and intelligence.³⁰ The tests were administered to inmates of the Berlin-Tegel penitentiary and the data about prior convictions were extracted from prison records.

The table contains quite a number of coefficients. None of them are particularly impressive, but for theoretically oriented analyses, they are high enough.

If one were to follow this assessment, the first result obtained would be that the variable spheres - personality on the one hand and biography and/or intel-

³⁰ Feature 44: intelligence with subtests from Cattell's CFT-3. Feature 45: Intelligence with subtests from Horn's LPS (German Intelligence Test) (1962).

ligence on the other - exhibit correlations which must be taken into consideration in reflections about deviant behavior.

Extraversion virtually does not stand out. This is presumably a further serious indication that extraversion has no remarkable importance for the emergence of deviant behavior.

Conversely, the remaining integrative factors - neuroticism, anxiety and aggressiveness (F 2) - are represented several times by coefficients.

Aggressiveness (F 2) is in evidence but not especially frequently. Here, there is a small indication of the influence exerted by the pre-institutional biography (home or welfare up-bringing). All in all, the anxiety direction predominates, especially with regard to the main point - neuroticism. This direction goes back, in particular, to the single components depressiveness (feature 3) and inhibition (feature 8).

Some of the origins of the depressive, anxious character which has high values on neuroticism could lie in deficiencies in the achievement sphere. In any event the anxiety direction correlates both with schooling (-.25; for interpretation: low value corresponds to poorer schooling) as well as with intelligence. It is also striking that hardly any connections with the criminal career (features 37 to 39) appear using this approach.

Some personality attributes have entries in almost all of the columns. They are undoubtedly of special significance for theoretical reflections.

The most striking of all is FPI 4 - excitability. Excitability is very strongly involved in the second FPI factor - aggressiveness - and not uninvolved in the first - anxiety.

Neuroticism also is strongly represented. The clearest references to the criminal career are exhibited by FPI 2 - spontaneous aggressiveness.

When we look at the columns, features 43 to 45 (schooling, intelligence) are striking because of the high number of entries. Furthermore, the coming release (feature 41) seems to lead to high values in FPI 4 - excitability -, FPI 7 - reactive aggressiveness -, FPI N - neuroticism -, and the second FPI factor - aggressiveness. Possibly, the increase in excitability has the decisive influence in this case.

By and large, the findings of this subsection speak in favor of ignoring extraversion in theory of criminality analyses but appear to advocate the inclusion of neuroticism, anxiety, and aggressiveness (F 2) along with one of the fundamental individual components of each of the two factors - namely, depressiveness for anxiety and excitability for aggressiveness (F 2).

This concentration on a few features could also speed up progress in the development of theories.

Table 3: Personality, Biography, Intelligence: Significant Correlations

		37	38	39	40	41	42	43	44	45
1	Nervousness		11				-16	-18		
2	Spontaneous aggressiveness	11		21	14					
3	Depressibility						16	-20	-13	-15
4	Excitability		11		16	-15	22	-16	-17	-16
5	Sociability				-17			19	11	
6	Imperturbability									
7	Reactive aggressiveness			18		-18	19	17		
8	Inhibition						-20	-14	-17	
9	Openness		8							
10	Extraversion									
11	Neuroticism				13	-14	17	-24	-10	-15
12	Anxiety (F 1)							-24	-18	-17
13	Aggressiveness (F 2)					-16	20			

37: Number of prior convictions as juveniles; **38:** Number of prior convictions as adults; **39:** Total number of months in prison; **40:** Months of imprisonment in Tegel; **41:** Months until release; **42:** Home or welfare up-bringing; **43:** Educational achievement; **44:** Intelligence according to CFT-3; **45:** Intelligence according to the German Intelligence Test (Leistungs-Prüf-System (LPS))

4.2.5 Prisonization

The topic of prisonization³¹ is addressed here with the sole aim of obtaining further indications of the validity of personality factors with a view to understanding deviant behavior. Limitations of space preclude all but the most condensed account.

4.2.5.1 Theoretical remarks on prisonization

Prisonization is regarded rather vaguely as the inmate's gradual assimilation into the inmate culture. The inmate culture is chiefly seen as a subculture which - viewed from the perspective of the prison - has clearly undesired, negative aspects with regard to the aim of resocialization. Typical terms used in this context are "inmate solidarity" and "hostility of the inmate towards the prison staff". At the very latest when doing a comparative reading of the scales with which the features corresponding to the term are supposed to be measured, it becomes evident that the term "prisonization" designates a very broad and rather heterogeneous field.

However, the feature of inmate solidarity against the institution and its staff belongs to the quite uniform core of empirical studies on prisonization. Two concurrent theories have asserted themselves in the discussion.

According to Sykes³² deprivation theory, the undesired adaptation processes of the inmate to the inmate subculture are a consequence of the conditions of deprivation inherent in imprisonment. He mentions 5 types of deprivation: the loss of freedom, the withdrawal of material and immaterial goods, the denial of heterosexual relationships, the restriction of autonomy and the threat posed by fellow prisoners. These 5 features lead, according to Sykes, to the forging of ties of solidarity among the inmates the aim of which is to render incarceration as bearable as possible.

According to the importation model from Irwin and Cressey,³³ the prisonization of an inmate depends, first and foremost, on his pre-institutional biography. In short, when in prison, the inmate behaves to a large extent in the same way he does and would outside of its walls. In other words, the conditions of imprisonment do not, themselves, contribute fundamentally to inmate solidarity.

31 Clemmer 1958; Cloward 1975; Hephurn and Stratton 1977; Irwin and Cressey 1964; Kassebaum et al. 1971; Klingemann 1975; Ortman 1984, 1985; Ortman and Dinse 1982; Street 1965; Sykes 1958; Thomas 1977; Thomas and Foster 1972.

32 Sykes 1958.

33 Irwin and Cressey 1964.

In the final analysis, the author tends more to the view taken by Sykes. The question arises, however, whether it would not, in the long run, be more fruitful to replace Sykes' theoretical reasoning by the reactance theory and aspects of the theory of social control.

The reactance theory³⁴ purports - simply and convincingly - that people react to restrictions in freedom with motivational states to regain the lost freedom. In prison, this can only be attempted - it might be concluded - against the will of the prison staff.

The aspect of the theory of social control³⁵ takes into account, above all, the fact that individuals are primarily influenced by other persons. Since the great majority of the inmate's time will be spent forcibly with fellow inmates, he will be dependent mainly on them and will be influenced above all by them.

4.2.5.2 Test construction

No inventory which covers the desired sphere of features has been found, either in German or in Anglo-Saxon research. As a result, a questionnaire was developed especially for this purpose.

In doing so, it was possible to borrow from a number of existing scales which will be presented briefly below. Each number corresponds to the table of findings and includes: the name of the scale; the reliability coefficient (Cronbach's Alpha) in brackets; and the typical item (in brackets: correlation of the item with the scale value, item-scale total correlation):

25 Attitude to the law (.87)

The laws of our country are almost impossible to keep. They only see about the interests of the money bags (.63).

26 Attitude to own offence (.75)

My only mistake was to have let myself get caught by the police (.46).

27 Future prospects with respect to legal behavior (.90)

Somebody like me can count himself lucky if he manages not to break the law (.70).

28 Criminal orientation of friends outside of the prison (.85)

My friends outside are hard-boiled criminals. They will never change (.52).

29 Criminal orientation of friends inside the prison (.82)

My friends here will always be in trouble with the law (.61).

³⁴ Brehm 1972. See also Gniech and Grabitz 1978.

³⁵ Hirschi 1969. See also Caplan 1978; Dussich 1985.

30 Attitude to work and education (.81)

My personal rule is: "If you are stupid enough to work, it's your own fault!" (.50).

31 Future job prospects (.82)

I am optimistic that I will find a rather good job when I get out (.64).

The values for this item were inverted for the purposes of computation: high scores correspond to the answer "not true".

32 Friends in prison (.90)

My friends here share their "luxuries" with me (.52).

33 Friends outside of prison (.83)

The people I like most are outside (.65).

34 Fear of fellow inmates (.85)

One only asserts oneself against the other inmates with brutal force (.52).

35 Restriction of autonomy (.83)

Many of the rules here are only there to break the inmates down (.62).

36 Hostile distance to staff and institution (.79)

In my opinion most of the members of the staff are stupid and brutal (.42).

Note: 40% of the 163 inmates interviewed answered: "true".

From the choice of the scales it is obvious that elements have been borrowed from the theory of social control.

The inter-correlation of the scales (without table) gives, without exception, high to very high correlation coefficients. This gives reason to conclude that the 12 features of the test correlate highly with a common factor. This result is not self-evident. It occurs for example through a correlation of .66 between attitude to the law (feature 25) and hostile distance to the staff and the institution (feature 36). This is, in our opinion, a small single indication that the 12 features together should also clearly correlate with a tendency to deviant behavior.

On a more technical level, the "prisonization factor" proves at any rate that the reflections which underlie the combination of these rather heterogeneous features to make up a "prisonization" questionnaire, seem founded.

4.2.5.3 Findings

We shall base our interpretation of the findings on the following assumptions:

1. The features which were discussed in the previous section on test construction all influence deviant behavior. In view of the nature of the subject matter of the scales, this would seem evident.
2. When numerous sufficiently high correlations between the features from the prisonization sphere, as defined in the scales, and a wide range of per-

sonality features emerge, then the personality features in question are also revealed as potentially significant in the incipience of deviant behavior.

3. The fact that coefficients, as in point 2, accumulate preferably around those personality features which, as it is, are theoretically prominent in explaining deviant behavior, should lead to increased confidence in theoretical analysis and its empirical relevance.

The correlations are shown in Table 4. A look at the table shows that point 2 is true: numerous significantly high coefficients are present. In evaluating the magnitude of the coefficients, within a theoretical discussion, it may be taken into consideration that the "real" correlations are even stronger because the scales are not reliable in all aspects.

The condition mentioned in point 3 is also met. On the basis of the three conditions mentioned above, we may note the following:

Extraversion seems not to be a dimension which is of importance for the theory of criminality. The most influential seems to be the factor of aggressiveness (F 2) followed by the still strong neuroticism and the rather weak factor of anxiety.

The observation that neuroticism is clearly present while significant coefficients for extraversion are wholly lacking, places us in a theoretical quandary since, according to Eysenck, neuroticism influences deviant behavior tendencies only via extraversion.

In the separate scales, 1 to 9, the components of the factors aggressiveness (F 2) are particularly striking. They are: aggressiveness (as an separate scale), excitability and dominance (reactive aggressiveness, feature 7). If one also takes into account the reflections and findings from earlier sections of this paper, the hypothesis seems logical that the anxiety factor is more likely to cover socialization deficiencies whereas the aggressiveness factor (F 2) represents the hard-core aspect of the emergence of deviant behavior. Moreover, to a great extent, aggressiveness (F 2), also denotes stable attitudes which most likely foster deviant behavior. Here, criminality is, to a certain degree, legitimate (at high factor values) since the laws are not. The individual's own offence is experienced less in terms of concepts like responsibility and guilt. Labels of this kind are more likely to be rejected. Furthermore, future prospects are in several respects more likely to foster criminality: for example, there is no hope of success and success, it must be added, is seen as a life without subsequent offences after release from prison.

Aggressiveness (F 2) has a correlation of .40 to hostile distance to staff and institution (feature 36). The factor correlates higher with none of the other features from the prisonization sphere. In terms of absolute value, too, the coefficient is substantial. We are at a loss as to how this correlation is to be understood.

Table 4: Personality and Prisonization: Significant Correlations

		1	2	3	4	5	6	7	8	9	10	11	12	13
25	Attitude to the law		30				21	38						37
26	Attitude to own offence		23		22			38						32
27	Future prospects with regard to legal behavior		32		30			37				22		38
28	Criminal orientation of friends outside		32	23	31			31				23		38
29	Criminal orientation of friends inside	21		22								20		
30	Attitude to work and training		22		36			34				22		32
31	Future job prospects													
32	Friends in prison	-21				24							-25	
33	Friends outside		-26					-25						-28
34	Fear of fellow inmates	28		35	33			33	23			38	30	28
35	Restriction of autonomy				29			28				21		32
36	Hostile distance to staff and institution		28		30			32		21				40

1 Nervousness 2 Spontaneous aggressiveness 3 Depressibility 4 Excitability 5 Sociability 6 Imperturbability 7 Dominance, reactive aggressiveness 8 Inhibition 9 Openness 10 Extraversion 11 Neuroticism 12 Anxiety (1. FPI factor); 13 Aggressiveness (2. FPI factor)

Application of the importation model theory does not bring us any further. It is likely to purport that the correlation existed prior to imprisonment. How would Sykes explain the relation? If he were to remain in his system - the theory of deprivation - he would be obliged to contend that the deprivations of imprisonment exert an influence both on the aggressiveness feature (F 2) and on hostile distance. He would have to add that the deprivations either vary from inmate to inmate or that the way in which the same deprivations are experienced vary from one inmate to another.

However, this would mean that persons with high values on the aggressiveness factor (F 2) will be "normally" aggressive (F 2) after release when the imprisonment deprivations are removed.

However, we think this is highly unlikely. Perhaps the reactance theory can, in fact, be of greater assistance to us here: restrictions of freedom are as a rule not accepted passively (the reactance theory also offers other possibilities of reaction). People who rate high on factor 2 could perceive their freedom as threatened - for whatever reasons - earlier than others. This would explain, not only some degree of their aggressiveness (F 2), but also some of their hostile distance and thus account for the correlation of both features.

Obviously, this question - like so many others touched on in this paper - is one that requires further study.

5. Summary

For the personality features discussed, the following basic assertions have been made:

1. Extraversion has, if anything, a very minor influence on deviant behavior - a finding which can also be readily understood from a theoretical point of view.
2. Neuroticism enables sufficiently strong relations to be recognized. These should, however, not be seen as the confirmation of Eysenck's theory of criminality.
3. It could be useful to place greater emphasis on the observation of neuroticism from the perspective of depressiveness, on the one hand, and anxiety on the other.

For depressiveness and deviant behavior, theoretical notions were developed which follow the theory of learned helplessness proposed by Seligman.

For anxiety, theoretical notions were developed which on the one hand are based on the feature of excitability and go on to take up Epstein's reflections on the impact of high states of arousal, and, on the other hand, are based on a statement from the achievement motivation theory postulated by Atkinson: that anxious persons supposedly tend to avoid tasks of average difficulty.

4. Empirically, clear evidence was found to substantiate the utility of the anxiety direction. They point, first and foremost, to deficits in the spheres of socialization and achievement.
5. In addition to the topic of anxiety, a second main direction was theoretically discussed and empirically researched: aggressiveness (F 2: as a factor). Its main components are: aggressiveness, excitability, dominance and openness.
This factor exhibits a clear resemblance to Eysenck's psychoticism dimension. It also corresponds well to a carefully worked out secondary factor from the Freiburg Personality Inventory.
6. A tougher variant of deviant behavior in which criminality is considered legitimate since the law is seen as not being legitimate, could correspond to this second main direction. Moreover, it goes hand in hand with clear references to future prospects according to which the hope of being able to live a life free from subsequent convictions, are slim.
7. Arousal and excitability showed themselves, both from the theoretical and the empirical point of view to be highly significant features in the study of deviant behavior.
8. The study started with the question whether an individual's personality has a causal and relevant effect on his tendency towards deviant behavior. It can henceforth be answered in the affirmative. Apart from the individual points mentioned here, this assertion is primarily based on the findings concerning the relationship between personality features and features of the prisonization sphere. The individual reasons are:
 - The features of the prisonization sphere extend far beyond prisonization itself. They cover several variables which
 - can not only be the result of deprivations inherent in imprisonment. These include, for example, the individual's assessment of the legitimacy of the law.
 - should correlate highly with deviant behavior in the dark field.

- For some of the personality features touched upon, at least one theoretically-founded relation to deviant behavior was established. This also includes aggressiveness (F 2).
- Aggressiveness (F 2) correlates highly and over a broad spectrum of variables with prisonization.

9. The author's theory implies that the high values for the following two dimensions foster deviant behavior:

- Anxiety
- Aggressive excitability

10. This personality theory of deviant behavior is anchored in a number of issues central to discussions on criminal theory since it has (as can be seen both from Tables 3 and 4 and from the description of the prisonization scales in section 4.2.5.2) significant relations with the following theoretical approaches:

- The theory of anomie
- The labeling approach
- The control theory
- Neutralization techniques
- Prisonization theories

This, too, characterizes the potential importance of an approach based on personality theory in general, and on this personal theory in particular.

Finally, it also characterizes a possible research program which could also be of interest to more sociology-oriented criminologists.

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Power Analysis and Effect Size Estimation in Criminal Justice Evaluation

Roland Nemeč

In the 1960's and the early 1970's, evaluation research experienced a considerable upturn in the USA. It came about essentially as a result of numerous initiatives taken by government regarding social reform programs in different fields which brought intensive concurrent research in their wake. Since the end of the 1970's, however, it has been possible to discern a change which has modified the status and orientation of evaluation research.¹ A critical assessment of what research had yielded up to that point in time, triggered off by limitations engendered by the economic recession, also constituted a decisive factor in this change. The results of many evaluation studies very often challenged optimistic expectations that reform programs could exert an influence on compelling social problems.²

"In evaluation research it appears that nothing succeeds like failure. While more and more agencies and policy makers turn to evaluations for information on social programs, evaluation researchers find increasingly less and less about which to be sanguine in our current social programs. In one field after another, evaluation researchers find that the programs in place or contemplated have few or no side effects of the sort intended by their designers. We now know that rehabilitation efforts fail to reform prisoners; that more money and curriculum changes fail to increase the teaching abilities of schools; that poverty is scarcely to be alleviated by counselling the poor; that housing, when improved, leads to no corresponding changes in the quality of lives of residents; and manpower training programs scarcely improve the employment chances of graduates; and so on, through a litany of programs that when tested against fair measures of success were found to be ineffective or failures." (Chen & Rossi, 1981, pp.38-39).

¹ See, for example, Greenberg and Robins 1985; Rossi and Wright 1987.

² See, especially, Ch. Murray's (1984) overview entitled "Losing Ground"; as a contrast "America's Hidden Success" by J. Schwarz (1983), see also Rossi and Wright (1987).

The "nothing-works" thesis which is associated with different strategies aimed at rehabilitating offenders, and the findings yielded in other fields of criminal justice evaluation,³ which to some extent have been less than encouraging, therefore do not stand alone. Of course, sufficient examples can be gleaned from all fields of application of evaluation research to the result that "no-effect" studies are by no means an iron law. However, on the whole, skepticism is in order.

Attempts to implement programs in practice in such a way as to do justice to the intended objectives, have encountered a host of difficulties. But attention has also turned to research itself with the question increasingly being raised as to how sensitive evaluations are in depicting effects which really exist - given the constraints in the field and the many attendant methodological problems - especially when the effects are only modest.⁴ In this context, points of main emphasis relative to the content and methodology of evaluation research have emerged. Worthy of special mention among them are implementation research, the status of experimental vs. quasi-experimental designs, the discussion about the adequate criteria of success and how such criteria should be measured.

The issue of sensitivity to possible treatment effects has also been at the root of objections to the way in which inferential statistics is currently practiced. Criticism is levelled, *inter alia*, at the rigid adherence to conventional significance criteria and at misconceptions of statistical significance (see Section 5) the consequence of which is an often low power in the analysis effects. Moreover, significance tests do not allow statements on the quantitative magnitude and thus on the substantive meaningfulness of sample results.

Although, to our mind, the concept of power could make an essential contribution to clarifying why numerous studies are unable to show effects, they have hitherto found little acceptance. Since they are nonetheless of relevance to evaluation research in general and to basic research too, the following reflections will transcend the field of criminal justice evaluation. However, before going on to discuss the relevance of the concepts, a few basic definitions and statistical relations should be discussed first.

3 See, *inter alia*, the secondary analyses by Lipton, Martinson and Wilks 1975, as well as the overviews by Bennet 1979; Greenberg 1977; Romig 1978; Sechrest, White and Brown 1979.

4 See, especially, Boruch and Gomez 1979; Chen and Rossi 1981, p.39 et seq.; Datta 1980, p.482 et seq.; Gilbert et al. 1976, p.296 et seq.; for further references see the notes on Sections 3, 5 and 6.

1. The concept of statistical power

Tests of significance are known to take place using the sample distribution of a test statistic. This sample distribution depicts all the possible values of a test statistic if an infinite number of replications of the experiment is assumed and presuming that the null-hypothesis (H_0) is "true" (see Diagram 1 in the annex). It is thus essential that a frequentistic and conditional model of probability underlies.

By means of the significance level α , a specific class of empirical values of the sample distribution is defined under the assumption of H_0 . Although these values are possible under H_0 , they are seen as so improbable that it appears justified to reject H_0 in favor of an alternative hypothesis (H_1). However, this decision therefore implies a risk α , that H_0 will be mistakenly rejected, that is, that one will come to the erroneous conclusion that there is a treatment effect (α error or what is known as an error of the first kind). However, such an error risk is generally kept very small because α is fixed at .05.

The current inferential statistics model, which goes back to R.A. Fisher (1921, 1925, 1935, 1956) allows no statements about the degree of probability with which H_0 might be mistakenly assumed, in other words, about the probability that one mistakenly concludes that a treatment is inefficient (β error or error of the second kind). Such statements can be made only in the extended inferential model according to Neyman and Pearson (1928, 1933a, b, 1936 and 1938). The model includes the sample distribution under H_0 along with a corresponding one under a specific alternative hypothesis H_1 (also see Diagram 1 in the annex). With this inferential model, the concept of power can be introduced.

The power ($1-\beta$), as the complement of the β error, is formally defined as the probability of rejecting H_0 , thus the probability of obtaining a statistically significant sample result.⁶ Power is therefore also generally to be understood as the sensitivity⁷ of statistical analyses in "uncovering" existing effects.

Numerically, power is, on the one hand, directly dependent on the significance criterion α , since both error risks α and β , are inversely related to one another. The higher (therefore numerically smaller) the fixed significance level α , the larger the β error, with the result that the power drops.

On the other hand, the power is also determined numerically by the location of the sample distributions with respect to each other and their shapes. It is consequently directly dependent on the size of the population effect (EE), that is, the extent of the deviation between μ_1 and μ_0 . However, all those influences which in some way or other determine the variability of the sample statistics also exert an

5 On this topic, see for example Hager and Westermann 1983, p.74 et seq.; and Wendt 1983, p.476 et seq.

6 See Cohen 1977, p.4.

7 See Henning and Muthig 1979, p.214.

effect on the power. Nevertheless, only the sample size N , which has a clearly defined relationship with the variability of the sample statistics is included in the concept of power in the narrow sense of the term.⁸

It becomes clear that the concept of power, too, is based on a conditional and frequentistic probability model. The power always refers to an assumed specific population effect as well as a concrete N and α .

For three of these quantities specified in each case, a statistical power of .60, for example, means that in 6 out of 10 surveys carried out under the same conditions, a statistically significant sample result will appear. Consequently, there is a close connection to the significance concept; moreover, effect sizes are also included.

It would seem appropriate to comment on this in greater detail since misconceptions abound in this domain. For example, power is understood as the probability that a statistical association "really" exists or that the rejection of H_0 is indeed valid.⁹ It must also be deduced that the concept is of importance primarily in the planning of studies or in evaluating the "properties" of experiments, because population parameters are underlying. Strictly seen, in judging concrete study findings, no formal statistical justification can be said to exist unless the sample result can be considered as an approximate estimation of the population effect.¹⁰

As a result of the monotonic relationship between power, treatment effect (EE), N and α , at least one of these quantities can be ascertained in designing studies, insofar as the other three are specified. In doing so it is of prime practical importance, apart from examining the sensitivity, to determine the necessary sample size for detecting effects.

It should be mentioned that the concept of power is also being extended to the properties of procedures of statistical analysis. In this context, it is the robustness of the methods despite departure from the assumptions on which they depend, also known as "relative efficiency" or "power efficiency",¹¹ which is meant.

2. Extended concepts of power

Alongside those determinants (α , N , EE) which are directly related to power, all those factors which influence the variability of sample statistics, can also have

8 On this point, see Cohen 1977, p.6 et seq.

9 See in particular Cohen 1973 as well as Brewer 1972, 1974 and Fricke 1977, p.5.

10 When estimated by confidence intervals, sample measures can serve as more appropriate indications of the population parameter than give theoretical assumptions about its expected magnitude; also see Cohen 1973, p.227 on this point.

11 See especially Marascuilo and Mc Sweeney 1977.

an effect. This is why, here and there, extended algebraic models of statistical power are presented. Cleary, Linn and Walster (1970) contend that effect size and thus power, is monotonically related to the reliability and the validity of the criterion measure (see Formula 1 annexed). The "theory of measurement" developed by Boruch and Gomez (1979), which also includes the treatment implementation, follows this model (see Formula 2 annexed). According to Boruch and Gomez (1979) one of the most decisive reasons for the multitude of "no-effect" studies in evaluation research is the fact that measuring instruments are subjected to a considerable degree of measurement error under field conditions. They also often prove to be quite invalid; in other words, they measure variability which only partially corresponds to the target criteria. Moreover, in practice, treatments always exhibit some degree of "infidelity", that is, they correspond only to a limited extent to their original conception and often vary strongly within the survey groups.

Using an example, Boruch and Gomez (1979) illustrate that under such influences, statistical power diminishes considerably. They start from the assumption of a reliability of .80 and a validity of .75 which is by no means pessimistic in applied research. Even assuming that the degree to which the treatment can be carried out as planned is 75%, the power still drops, compared with the originally estimated value of .92 to only .28.

Of course, these extended concepts of power are based on simplified algebraic relations. This is especially true of treatment implementation which, in any event, can hardly be couched in a numerical index. Even the relationship between reliability and power is not necessarily a monotonic one unless additional assumptions are presumed.¹² In any event, these concepts make it clear that, given the measurement conditions existing in the field, statistical power can be drastically reduced - no doubt an essential reason behind many a "no-effect" study. In order to achieve statistical power to the desired extent, we need larger sample sizes than is to be assumed when starting from the purely inferential statistic model which does not take these factors into account. Moreover, the test statistical criteria of quality of survey instruments should be aspired to and examined as far as possible so as to give a realistic notion of the sensitivity of evaluation studies.

12 See the controversy between Fleiss 1976; Nicewander and Price 1978; Overall and Woodward 1975, 1976; Bredenkemp 1980, p.54 et seq. and Cleary and Linn 1969; Cleary, Linn and Walster 1970; Levin and Subkoviak 1977, 1978; Sutcliffe 1980. For more details see Nemeč 1988.

3. Measures of effect size

In designing experiments, both the determination of the statistical power and the "qualification" of sample results¹³ require a formal definition and statistical measures of the magnitude of experimental effects. A series of earlier articles, which had already introduced such measures of effect size,¹⁴ did not succeed in becoming very widespread. Although many indices exist in the meantime, we only can present the basic principles of determination and classification as well as a few select examples.

Essential in this context is the differentiation between measures of non-centrality and association on the one hand, and between measures of population and samples on the other. What is known as the "non-centrality parameters" (NCP) goes back to the fact that test statistics which exist under the assumption of the alternative hypothesis H_1 , deviate from those which exist under the null hypothesis and result in so-called "non-central" distributions. The extent of the deviation can be specified using non-centrality parameters.¹⁵ These measures are generally defined using the squared difference between the k treatment means μ_k and their overall mean μ . Furthermore, what is common to these measures is that they are standardized by the population error variance (see Formula 3 of the annex) and thus reflect the "signal" to "noise" ratio. This standardization endeavours to achieve the comparability of the indices across different experiments. The diverse NCPs differ from one another essentially in the size of the c constant and the majority of them can be deduced from one another. Examples of NCPs are for instance λ , φ^2 or f^2 .¹⁶

Measures of statistical association are more common. In the case of these indices, the variance which is attributed to the different treatments is no longer related to the error variance, but instead to the total variance in the dependent variable. Corresponding to the general linear model of analysis of variance, the total variance is yielded by summing up the other two terms of variance. These coefficients can therefore be referred to as measures of the variance "accounted for".

¹³ This expression was marked by Witte 1980 and will be used in the rest of this paper when dealing with the evaluation of the effect sizes of empirical findings.

¹⁴ See, for example, Bolles and Messick 1958; Cohen 1965, 1969; Gaito 1958; Friedman 1968, 1969; Hays 1963; Levy 1967; Tang 1938.

¹⁵ These distributions were deduced for the common test statistics F , t and χ^2 . See Cohen 1965, 1977; Hager and Westermann 1983, p. 159 et seq.; Winer 1971, p. 826 et seq.

¹⁶ This parameter λ is sometimes also called δ^2 . Cohen (1977) also uses f and δ as measures of effect. See, inter alia, Hager and Westermann 1983, p. 160.

Population or sample measures result according to the underlying variances. One of the most common of the foregoing is η^2 which is also known as the "correlation ratio", as the "correlation index", the "correlation quotient" or as the "eta-quotient".¹⁷ η^2 is an index of any functional relation between any independent variable and a continuous, dependent variable. In contrast to the well-known product-moment-correlation coefficient r , it thus expresses the linear and also any curvilinear relations. More well-known is, however, the related measure ω^2 .¹⁸

If we leave the model of analysis of variance and pass on to the general and more comprehensive model of multiple regression analysis, the squared multiple correlation coefficient $R^2_{y,x}$ can also be used.¹⁹ For the population, $R^2_{y,x}$, η^2 and ω^2 are numerically equivalent. Furthermore these measures can be deduced from the above-mentioned non-centrality parameters.²⁰

If sample variances enter into the measures of association, the corresponding standardized sample equivalents are generated. They are used under different symbols and terms such as U ("Utility Index", Bolles and Messick, 1958) or E^2 (Kerlinger, 1964). These indices all correspond to the squared multiple correlation in the sample $R^2_{y,x}$ which is nothing more than a monotonic transformation of the usual test statistics F and t . If only $K = 2$ treatments are present, $R^2_{y,x}$ corresponds to the squared point biserial coefficient of correlation r^2_{pbis} .

Beyond the effect measures described above, many others exist, some of which are closely related to the ones mentioned here. Cohen (1962, 1965, 1977), in particular, has presented a whole series of indices and corresponding tables for determining power. For multivariate and non-parametric analyses, too, measures of effect size can be used.²¹

Just as numerous are the terms which are connected with effect measures. They range from "statistical utility", "practical significance", "substantive significance" to simply "effect size".²² However, since these indices express purely statistical associations, it is recommendable to speak only of "effect size". To what extent they are "practically" or "substantively" significant, can only be determined in the context of a specific study.

17 See Kerlinger 1978, p.336; Lienert and Raatz 1971; Cohen 1965, pp.104-105.

18 See Hays 1977, p.414.

19 See Cohen and Cohen 1983.

20 For details, see Hager 1983.

21 See Cohen and Cohen 1983; Cooley and Lohnes 1977, p.227 et seq.; for non-parametric measures, see Acock and Stavig 1979; Cohen 1977; Lienert and Raatz 1977; Stavig and Acock 1980.

22 See, for details, Hager and Westermann 1983, p.158 et seq.

4. The criticisms levelled at current practices of statistical inference

Objections to the widespread practice of inferential statistics are by no means new. As early as the end of the 1950's and in the 1960's, numerous articles have been published sometimes under the headword "the significance controversy". Many of these articles are concerned with the erroneous interpretation of tests of significance and their uncritical application.²³ Although at the time they found little resonance, they have been taken up again in recent years, especially in evaluation research.²⁴ In the following pages we shall discuss those of the manifold reservations which lead to the concept of statistical power and effect size.²⁵

One essential objection affects statistical inference insofar as it is usually rigidly oriented towards a significance level of $\alpha = .05$. This criterium is not inherent in the test; it is a mere convention and is therefore challenged as being arbitrary and not really founded. Furthermore, the standard which it imposes is very high indeed, insofar as one is only willing to accept an α error when the odds are 1 in 20. The inverse relationship between both error risks α and β is often tantamount to an asymmetrical test of hypothesis to the detriment of the statistical power and, consequently, to the detriment of a probable treatment effect.

Criticism is also levelled at the widespread, implicit assumption that statistical significance per se means the same as the size of an effect. However, as mentioned previously, alongside the magnitude of a sample statistic, the sample size also exerts an influence. It is common knowledge that even considerable effects turn out not to be significant when the number of subjects is small and that, conversely, trivial effects are significant when the samples are very large. It is therefore not possible to deduce the quantitative magnitude of effects and thus their "substantive" and "practical" meaningfulness on the basis of significance criteria. This is frequently the question of primary interest and it can only be answered with the aid of the measures of effect size.

It is precisely for this reason that the rigid dichotomization on the basis of the significance level, which renders an α of .05 a criteria of what is "random" as opposed to "real" or what is "significant" as opposed to "irrelevant", encounters a great

²³ See, for example, Bakan 1966; Gold 1970; Labovitz 1968; Rozeboom 1960; Selvin 1957; for a comprehensive view, see Morrison and Henkel 1970.

²⁴ See, inter alia, Berk and Brewer 1978; Cohen 1982; Lipsey et al. 1987; Sawyer and Peter 1984; Schneider and Darcy 1984; among the German-speaking authors, see for example: Bredenkamp 1972, 1980; Hager and Westermann 1982a, b; and Witte 1980.

²⁵ For a more detailed description of the discussion and further references see Nemeč 1988.

deal of justified criticism. We find ourselves confronted with this dilemma especially when an associated probability p of .06 emerges.

Statistical significance is often also understood as a criterion of the "validity" of the hypotheses under test. As a result of the premises contained in the conditional model, statistics are tested, however, precisely using sample distributions which occur under the assumption of specific hypotheses. Conclusions as to the plausibility of hypotheses in the light of data, that is, with respect to what is known as "inverse" probability, are therefore not possible and can only be found within the framework of likelihood statistics.²⁶

Inaccurate and widespread are also interpretations which, merely on the basis of the statistical significance of the study findings, assume that an effect is reliable or replicable. Insofar as a population effect really exists, the possibility of replicating a study's findings, is contingent precisely upon statistical power.

Such incorrect conclusions from tests of significance contribute appreciably to the fact that statistical power and effect size receive little attention although only they are able to substantiate statements on quantitative magnitudes of statistical associations and their replicability. A further consequence is that the current practice of inferential statistics using comparatively high significance hurdles generally enable only a minor sensitivity for treatment effects which is not taken into account. However, in many evaluation studies which fail to show statistically meaningful results and therefore lead to the conclusion that the treatment is ineffective, it can be assumed that relevant effects are in fact present.

5. Statistical power in current evaluation research

There is much evidence to support the assertion that a large number of the empirical studies in the different fields of social science research actually exhibit insufficient power and that consideration of this fact is more than pure academic exercise. In his classical review of 70 published studies from this field, Cohen (1962)²⁷ already observed that only when large population effects are assumed power is sufficient with an average of .83. For medium statistical associations, it is on average only .48, for small ones, it drops drastically to .18.²⁸ Other more recent

²⁶ For details, see Wendt 1983; Witte 1980.

²⁷ This review encompasses all the publications of the *Journal of Abnormal and Social Psychology* for the year 1960.

²⁸ For different statistical values, large, medium and small effects correspond unanimously to proportions of approximately 20%, 6% and 1.5% variance accounted for.

reviews of this kind, which refer to the most varied fields of applied and basic research in social science, come to the same results.²⁹

Worthy of special mention is a meta-analysis conducted by Lipsey et al. (1985), which is concerned with recent practice in evaluation research practice. On the basis of 175 representative evaluation studies from 1978 to 1980,³⁰ which also include the field of criminology, the analysis tackles, inter alia, the question of the extent to which statistical power is taken into consideration in evaluation research at all and whether it exists to a sufficient extent. The meta-analysis shows that only 9 of the 122 studies which conducted quantitative comparative analyses, give any indication that considerations to statistical power were taken into account in designing the studies. Consequently, it can scarcely be surprising that, by and large, the coefficients ascertained by Lipsey et al. (1985) arouse doubts about the sensitivity of the statistical analysis and are hardly different from those of other reviews. Only if one starts from the assumption that large effects³¹ are achieved by the treatment, does the power amount (with an α of .05), on the average, to .81; for medium or small parameters, it is still only .63 or even .28. Even assuming large effects, not even 70% of all the statistical comparisons undertaken attain the minimum power of .80 suggested by Cohen (1977); less than 40% do so in the case of medium effects and not even 10% in that of small associations. The results are even more sobering when, like Lipsey et al. (1985), .95 is called for as the criterion to appropriately reduce the usually serious risk of errors of the second kind in evaluation research.

A contribution to the authors' conclusion that evaluation research as a whole is in a deplorable state, is made by the fact that additional methodological constraints are widespread. Such constraints considerably limit the sensitivity of studies. In the overwhelming majority only weak study designs are implemented. Information on treatment implementation are rare and empirical data are very seldom included. The statistical properties of criteria measures receive little attention. Only in 27% of the studies undertaken, is the reliability of the criterion measures mentioned and only in 19% its validity. Even more seldom are these properties examined - a situation which gives reason for misgivings insofar as 40% of the studies employ criterion measures which are developed in an ad hoc manner and not tested beforehand.

Under such premises, it is hardly surprising that countless evaluation studies show no significant results. In the meta-analysis conducted by Lipsey et al. (1985),

29 See Brewer 1972; Chase and Chase 1976; Chase and Tucker 1975; Crane 1978.

30 The individual studies constitute a representative selection of a total of 617 published articles contained in the Psychological Abstracts, the Sociological Abstracts and the Current Index to Journals in Education.

31 14%, 6% and 1% variance accounted for are defined as large, medium and small effects.

only 63% of the studies observed show a majority of statistically significant results for each of the statistical analyses carried out. This proportion is most likely distorted by a "publication bias" and is most probably quite inflated with respect to the real power.³²

Although no separate studies dedicated to statistical power exist in criminal justice evaluation, there is, however, no reason to assume that research in this field is more sensitive to possible treatment effects. Here, the very same methodological difficulties and constraints arise, be it the properties of survey instruments, the insufficient controllability of experimental conditions, the implementation of a treatment, or a limited sample size.³³ This is why the above-mentioned considerations can undoubtedly be transmitted to the field of criminal justice evaluation research.³⁴ Power and effect sizes have also received little notice in the pertinent literature. Practical examples, such as the National Juvenile Restitution Evaluation, can be found, at best, only on selected points.³⁵

Worthy of special mention is that reduced recidivism rates constitute a frequently used measure of success, but one which has not proved to be very sensitive. Sechrest, White and Brown (1979) use an example to illustrate this point in their comprehensive review of the state of research on the rehabilitation of offenders. Assuming a recidivism rate which has really diminished by 10% (for example in the 55% to 45% range) there is only a .40 probability that this by no means meaningless effect can be detected, even with 100 subjects in the experimental and the same number in the control group.³⁶ Although effects of this magnitude can be expected in many evaluation studies on the rehabilitation of delinquents, samples of this size are often not to be found. The implications of this calculation model arise from the fact that even comparatively small changes in crime or recidivism rates are quite likely to be of social relevance and yet the latter is not reflected in criteria of significance.

³² It cannot be denied that studies with significant results might have a better chance of being published. See Cohen 1972, p.151; Greenwald 1975; Witte 1980, p.57 et seq.

³³ See, for example, Cook and Scioli 1975, p.17; Hudson 1977; Rezmovic 1979; Sechrest, White and Brown 1979; Sechrest and Redner 1979; Slaiken 1973, p.89; Waldo 1983.

³⁴ See Kluegel 1983; Rezmovic 1979; Scheirer and Rezmovic 1983, pp.603-611; Wolfgang 1981, pp.309-310 as well as Boruch and Gomez 1979.

³⁵ See Medler et al. 1981; Schneider and Schneider 1979, 1982; worthy of special mention is the Measurement Sensitivity Assessment Study carried out by Lipsey 1983 on a prevention program among juvenile delinquents.

³⁶ Power depends both on the difference and on the order of the percentages; see Cohen 1977, p.180 et seq.

Schneider and Darcy (1985) conclude that in the well-known Kansas City Preventive Patrol Experiment the methodological constraints of the study design would render even a reduction in the victimization rate to 0% statistically insignificant. This would also apply to the aims of the Law Enforcement Assistance Administration (LEAA) to reduce the crime rate in two years by 5%.³⁷

Hardly any other example is able to illustrate better the possible consequences of methodological difficulties as well as an uncritical use of inferential statistics, than the global "nothing works" thesis used to characterize programs to rehabilitate delinquents. Very many studies exhibit considerable methodological shortcomings, and often too small samples for even considerable effects could be detected,³⁸ especially when such effects are expected to occur only in differential sub-groups of offenders. As a result of the priority accorded to guarding against an error of the first kind to the detriment of the possible effectiveness of interventions, inferential statistics are most often tantamount to an a priori decision in the direction of conservatism.³⁹ There is no doubt that this has led numerous promising treatments to be abandoned prematurely and without justification as supposedly ineffective. Apart from its direct social and ethical consequences, the unjustly sweeping thesis of failure has not remained without repercussions on the development of criminal policy in many countries. Although conversely, reflections on power and effect size do not provide sufficient grounds for placing high expectations in offender rehabilitation programs, they nevertheless show up the "nothing works" thesis in a different light.

6. Alternative statistical procedures

The criticisms levelled against classical inferential statistics come up against numerous suggestions which imply some modification of procedures. For example, it has been recommended that other statistical models, the Bayesian model or likelihood-statistics, for instance, be employed or integrated,⁴⁰ or that estimations of parameters be carried out using confidence intervals.⁴¹ According to the study's

37 This is to be expected because of the temporal and geographical variability of the data; see Schneider and Darcy 1985, p. 602.

38 On the criticism of the "nothing works" thesis from the perspective of insufficient statistical power, see, for example, Rezmovic 1979, p. 181 et seq.; Reiss 1980, p. 359-360.

39 See Kluegel 1983.

40 Rieken and Boruch 1974, p. 82 et seq.; Wendt 1983 and Witte 1980.

41 See Cook and Campbell 1979, pp. 40-41; Hays 1977, Chapter 9; Witte 1980, p. 54 et seq.

purposes and the context in which it is carried out, such methods can be quite fruitful though sometimes practicable only to a limited extent in evaluation research.⁴² Independently of alternative approaches, demands are occasionally made, in particular cases, that conventional tests of significance be foregone as far as possible or even totally.⁴³ To our mind, however, this is unwarranted since the criticisms mentioned refer mainly to the issue of appropriate application and interpretation. Significance tests are imperative insofar as they provide an adequate safeguard against random effects. However, it is indispensable that both error risks and thus the statistical power are always taken into account. As far as this is concerned, there are differing recommendations as to how α and β errors are to be weighed. Whereas some authors suggest that a "fair" test must always be performed, that is, that the same risks of error must be taken as the basis,⁴⁴ other authors use the guidelines suggested by Cohen (1965, 1977), according to which the power should be at least .80 (in the case of $\alpha = .05$).⁴⁵

Inevitably, however, strategies of this kind hinge upon the researcher's willingness to do away with conventional significance constraints. It is considered defensible to fix the significance level beforehand at an α of .10, .20 or even higher, if sufficiently large samples are not available to ensure a power which is adequate to serve the intended purpose.⁴⁶

This position is defended above all by representatives of a decision theoretic perspective. They demand that the error risks be further specified from a cost-benefit viewpoint, and that they be oriented, for example, on the potential financial expenditure for a program, its possible disadvantages for the clientele, available alternatives, and the like. Such approaches could probably be quite appropriate, for example, in exploratory or formative evaluation studies. However, they should also do justice to the issues and aims of an investigation and the weighing of the error risks should be sufficiently transparent and justified.⁴⁷

Such considerations are of pertinence to the planning of a study. In evaluating study results, demands are increasingly being made that sample measures of the effect size be specified. Such a "qualification of effect" should provide clues about the latter's quantitative substance, independently of the sample size, and is seen as being an imperative and complementary step to significance tests.⁴⁸ At

42 See, for example, Westermann and Hager 1982.

43 See Carver 1978; Derrick 1976; Guttman 1977; Harnatt 1979.

44 See, for example, Bredenkamp 1969, p.283.

45 See Schneider and Darcy 1984, p.604; Brewer 1972, p.395; on the arguments for this rule of thumb, see Cohen 1965.

46 See, for example, Crane 1978, p.237; Hager and Westermann 1983, p.187; Rezmovic 1979, p.182; Winer 1962, p.13.

47 See, especially Berk and Rossi 1976; Blalock 1972, p.160; Crane 1978; Nagel and Neef 1977; Rossi and Freeman 1982, p.363 et seq.

48 See Kluegel 1983; Cohen 1965, 1977; see the references in Section 5.

least this double-tracked approach always opens an additional and occasionally, depending on the purpose, an necessary decisional aid.

7. Problems related to the practical application of power and effect size analyses

In practice, the analysis of power and effect size poses a series of difficulties which are at the root of controversies over the usefulness of these particular procedures.⁴⁹ We consider it useful to take a brief look at the essential positions held on this issue.

The importance of power analysis lies, as mentioned above, primarily in study planning. Ascertaining the power requires that prior assumptions are formulated about the treatment effect which is to be expected. In addition, here, the error risks α and β , as well as the sample size, must be weighed against each other. This has generated reservations that this procedure implies decisions which are difficult to substantiate and which are thus arbitrary. This assertion is countered by the contention that, in normal practice of inference, whatever the sample size which the research conditions allow, specific pairs of values of the power and effect size are fixed. These pairs of values always implicitly and therefore totally unfounded result with the corresponding N and with the conventional significance level α . This is why, a transparent research planning is precisely what is needed to furnish greater justification.

Of essential importance is, however, that realistic notions about the treatment effects which can be expected are used as the basis; otherwise, the determination of statistical power is not very useful, and might even be misleading. Incorrectly assuming high population parameters, a correspondingly high statistical sensitivity can be postulated even under unfavourable research conditions. It would be just as questionable to challenge non-significant results in retrospect, alone in the case of a power which is assumed to be insufficient.

However, which treatment parameters may or should be appropriately expected is not an easy question to answer, especially in evaluation research; it is, however, a question which equally affects the qualification of study effects. Neither the pertinent literature nor reflections related to theory are very helpful in this respect. Cohen (1965, 1977) has proposed guidelines for different measures of statistical effect size which could generally be considered as small, medium or large

⁴⁹ See Dooling and Danks 1982; Sechrest and Yeaton 1982; O'Grady 1982; Strack and Rehm 1984. The criticism has been countered chiefly by Fleishman 1980; Halderson and Giasnapp 1972; Soderquist and Hussian 1978; Westermann and Hager 1984.

values. He attempts to substantiate these criteria, which correspond to 1%, 6% and 14% of variance accounted for, with the aid of many examples from empirical research. Their intention is for them to serve, however to serve, only as guidelines and to facilitate the practical execution of power analyses; as such, they have found a certain degree of acceptance (see in Section 5). On the other hand, these criteria are criticized for being unfounded, new conventions which, in addition, apply too modest standards to study effects.⁵⁰ The fact that a general consensus in the valuation of effect sizes is not to be expected in any case, is demonstrated for example by meta-analyses in the field of psychotherapy research.

Here, studies are most often integrated and appraised by determining indices of effect sizes which are independent of the sample size. One of the first meta-analyses, undertaken by Smith and Glass (1977), covered over 400 studies from the entire field of therapy research. This meta-analysis yielded, for example, an average effect size of .68 of a standard deviation, which corresponds to about 10% of the variance in the criterion variables accounted for by the treatments. This gave reason to speak of the death knell of all therapeutic intervention while on the other side it was seen as a confirmation of the general efficiency of such interventions. In the course of this debate we find a series of endeavours to clarify the practical and hence the social relevance of this effect in one or the other direction. Rosenthal and Rubin (1982) show, with the aid of the "Binomial Effect Size Display" (BESD), that this 10% of overall variance accounted for which gives the impression of being irrelevant is still equivalent to a success rate of 66% in an experimental group compared with 34% in a control group. Gallo (1978) calculates that any treatment which would increase an average life expectancy of 70 years by 6.8 years, also only accounts for 10% of the variance of this criteria; however, it is unlikely that the social relevance of such a treatment would be called into question. Nevertheless, it is by no means difficult to imagine less impressive examples. Algebraic calculations of this kind are not very helpful since, for instance, the association between membership in a specific treatment group and a criterion variable is not to be interpreted in the same manner as a difference in success rates ascertained using the same data.

From the debate in connection with meta-evaluations it becomes clear that, with the conventional significance criteria, not only are decisions about the practical importance of treatment effects omitted, at the same time, unrealistically high expectations are being implicitly placed in their quantitative magnitude. For example, in comparing two treatments, it is hardly likely to be suggested, without further ado, that a result which is statistically significant at $\alpha = .001$ might be irrelevant; assuming in each case only $N = 53$ subjects in both sub-samples and applying the same effect measure as Smith and Glass (1977), just that seemingly small effect size of .68 of a standard deviation or 10% of variance accounted for is necessary, and the figure even decreases with increasing sample size.⁵¹

50 Of special interest is Sechrest and Yeaton 1982.

51 For this example, the same effect measure was applied as in Smith and Glass 1977.

The question of the practical relevance of effect sizes should include the purposes and the content of the study. Should no such criteria be available for determining or evaluating effect sizes in individual cases, then the guidelines suggested by Cohen (1965, 1977) are by no means unrealistic, as can be seen from numerous examples.⁵² This holds true especially for evaluation research since far more interferences than in other fields can cause considerable reductions in the proportion of variance accounted for. Another possibility consists of fixing minimum values which are still considered relevant and using them as the starting point for the power and effect size analysis. Regardless of which effect criteria are applied, transparency is always assured in the discussion of diverging standards.

As previously mentioned, measures of effect size are defined as standardized quantities using either error or the total variance. The former are therefore influenced by those factors which determine, on the one hand, the overall variance and, on the other, that variability which can be accounted for at all, in other words, the "reliable" variance. Some factors which could exert an influence in this context are, for example, the heterogeneity of the samples, the number and variability of the treatment modalities, the reliability and validity of the criterion variables or the precision of the experiment. Criticism is thus directed to the fact that measures of effect are only comparable to a limited extent between experiments. Furthermore, it is common knowledge that they exhibit a comparatively high standard error when sample sizes are small and that they are therefore subject to considerable fluctuation. However, leaving aside the fact that a comparison with other studies seldom is the intention in evaluation research, and also leaving aside the fact that all other test statistics (and the *p* values) are also influenced by the above-mentioned study factors, confidence intervals can be ascertained for some of the effect indices, so as to examine possible consequences of the standard error.⁵³ If, in addition, information is available on the specific variance terms, an informative evaluation of effect sizes is indeed possible. And, in the final analysis, effect measures are necessary in order to be able to determine the statistical power.

In practice, power and effect size analyses surely imply a series of difficulties; however, as the possible solutions presented demonstrate, these fail to constitute sufficient grounds for foregoing these approaches totally. Some of the problems, especially the valuation of the quantitative and thus the practical significance of empirical findings are generally inherent in inferential statistics, but they have just become a topic of discussion in the field of effect and power analysis. Finally, both

⁵² Comparable criteria of the proportions of variance accounted for which can be expected in evaluation as well as in basic research, are supported for example by Brewer 1972, p.394; Henning and Muthig 1979; Rossi and Freeman 1985, p.383; Schubö et al. 1983, p.262; Witte 1980, p.105.

⁵³ See Fleishman 1980; Hedges 1981; Venables 1975.

strategies allow a more appropriate and efficient exploitation of the meaningfulness of empirical data.

8. An empirical example of power and effect size analyses

Since the pertinent research literature contains almost no practical applications of analyses of power and effect sizes, we shall proceed to present an empirical example which will show the advantages of this procedure and will demonstrate further statistical relations.

The example is taken from a comprehensive evaluation study to a social therapy confinement. Research focuses in the main on the development of an organizational structure which does justice to the therapeutic objectives, the implementation of interventions and the assessment of improvement in different success criteria. The study based on a quasi-experimental design,⁵⁴ uses a multi-modal and multi-method sampling approach. It includes, alongside 70 scales of different inventories, a wealth of qualitative data from several interviews, institutional records and also tape analyses as a method of participant observation. Moreover, Goal Attainment Scaling is applied;⁵⁵ it serves to analyze individual therapeutic objectives, on the one hand, and improvement in these objectives on the basis of behavior-related ratings, on the other.⁵⁶

The following study findings refer to the Freiburger Persönlichkeitsinventar (Freiburg Personality Inventory (FPI)), a trait-oriented personality questionnaire containing 12 scales. This inventory has found wide spread not only in correctional research, especially since it has at its disposal statistical "norms of comparison" for an extensive sample of the common population (standard sample). In the criminological field 19 studies with the FPI have been carried out so far. These compare different populations of offenders, whether subjects in the dark field, prison inmates, already released offenders or clients of social therapy units, using the FPI norms. As expected, the findings are very inconsistent which can be traced back inter alia to the heterogeneity of the samples, the varying study conditions and the different sample sizes. Despite the dissimilarity of the studies, it is surprising, however, that in all of them delinquents had higher scores in depressiveness than the comparison group. To what extent this justifies assuming a generalizable deviation in this trait is a question not answered, since these effects are confounded not only with variables of the delinquency biography, institutionalization, class membership and

54 For a number of reasons a true experimental design was foregone, the main reason being that precisely indication and selection processes were supposed to be investigated.

55 For information referring to Goal Attainment Scaling, see Kiresuk and Lund 1978 for a comprehensive overview.

56 On the research conception and results of the study, see Nemeč 1988.

others, but also with differing statistical power. Data on power and effect sizes, which could be more informative, cannot be found in any of the studies. However, the concurrent results lead us to assume that the trait "depressiveness" is of special importance for the description of offenders and for the explanation of delinquent behavior.⁵⁷

Subsequently, we shall run norm comparisons on two samples of incarcerated offenders. The experimental sample includes clients of the social therapy confinement (N = 48) who are at the beginning of treatment and volunteered to participate in it. The control group comprises inmates from regular prisons (N = 193) who correspond to the formal prerequisites for admission to the social therapy institution. Although the latter can be seen as representative of the potential clientele of this facility, it was not possible to win them for participation in treatment.

Since the FPI scales are correlated with age, education and class membership, these two sub-samples are compared to a sub-group of the FPI standard sample (N = 107) which was matched to them with respect to these criteria.

The aim of this sub-study was to estimate the proportion of delinquents in both groups who can be assumed to have considerable psychological disorders and to be in need of therapy. Since the norm comparisons can only provide preliminary clues about this, they were supplemented by additional analyses. At this point, we shall deal only with the norm comparisons in an exemplary manner since they compare samples of varying sizes in different variables.⁵⁸ As a result, relations between statistical significance and effect sizes become very conspicuous, even though the determination of power becomes more difficult.

8.1 Procedures of statistical analysis

The comparison of the three sub-samples takes place first of all by one-way analysis of variance. Only when substantial effects result from the analysis of variance, multiple comparisons of means on the pertinent scales are subsequently carried out among the three groups. For these comparisons, the Duncan Test is used; it is based on adjusted error probabilities and possesses the greatest degree of statistical sensitivity compared with other procedures.

⁵⁷ See, *inter alia*, the hidden crime studies conducted by Lösel and Wüstendörfer 1976 and Villmow-Feldkamp and Kury 1983; for detailed discussion see, in particular, Ortmann 1988, p. 159 et seq.

⁵⁸ Power and effect sizes were also determined for the subsequent statistical analyses (see Nemeč 1988).

In a preliminary step, the test statistical properties of the FPI scales were examined in all sub-samples. This procedure was supposed to control the extent to which they might affect the power and effect sizes as well as the extent to which they might contribute to group differences. However, all in all, these analyses show at least satisfactory most of the time good coefficients also in reliability; furthermore, no decisive differences between the sub-samples can be observed.

The homogeneity in variance was also examined to preclude an invalidation of the F-test and to control the comparability of the effect sizes because these are related to the variances in the samples. Only on the scale FPI 1 heterogenous variances come to light among the groups; however, they cannot cast doubt on possible effects.⁵⁹

It is essential that the effect sizes for the groups can be compared without appreciable limitations as to the properties of the scales and the homogeneity of the variances.⁶⁰

As effect measures, two non-centrality parameters suggested by Cohen (1977) were applied, the measure *f_s* for the analyses of variance and *d* for the comparisons of means.⁶¹ Cohen (1977) also proposed guidelines for small, medium and large effects (*f*: .10/.25/.40; *d*: .20/.50/.80) for these measures.⁶² They will be used in the following to determine the statistical power and to qualify the effect.

8.2 The power of statistical procedures

Considerations regarding power in the planning stage of the study came up against the already mentioned difficulties. On the one hand theoretically founded assumptions, as to the magnitude of the population effects which could be expected, could be formulated neither for the individual sub-groups nor for the different scales. Moreover as a result of research conditions, only limited samples could be expected.

In keeping with the aims of the study, the power analysis could therefore only be directed at weighing the two error risks against each other and determining the power resulting in each case for specific effect sizes and the given samples. In this context, various criteria played a decisive role. With regard to fixing the significance

⁵⁹ Since the large samples also showed the larger variances, the F-test is connected with an error of the first kind which is smaller than α ; see, for example, Diehl 1983, p.19.

⁶⁰ A comparison of the effect sizes to the different scales is also possible without major constraints since differences of these variances go back in the main to the diverging number of items and the construction of the scales, that is, reflect artificial variability.

⁶¹ These two measures *f_s* and *d* were used since they yield solid estimates of the population parameters *f* and δ (see, for example, Hager 1983) and thus facilitated recourse to Cohen's (1977) Power Charts. On the determination of the effect measures, see Formulae 4 and 5 annexed (Cohen 1977, p.20 et seq. and p.274 et seq.).

⁶² These values correspond to approximately 1%, 6% and 14% variance accounted for.

level, an adequate safeguard against random effects was sought as to ensure reliable conclusions about existing deviations. Furthermore, the same standards were to be applied in all sub-samples. At the same time, however, it was important to avoid discriminating against effects resulting from the comparisons made of the two smaller samples and to ensure sufficient power even for these. These considerations led us to fix a uniform significance criterion of $\alpha = .10$ for the analyses of variance as well as for the multiple comparisons of means. With an α of .10 a good power of .80 is exhibited in the analyses of variance with as little as $f = .15$, that is, rather small overall effects in the population. Moreover, even in the multiple comparisons of the smaller groups a power of .80 is achieved already with nearly medium values of $d = .45$.⁶³ Overall, the statistical analyses can be said to exhibit at least a satisfactory, if not a high degree of sensitivity.

8.3 Effect qualification

Provided that the significance level of $\alpha = .10$ is given, interpretation of the findings is based mainly on the effect sizes. For, depending on the questions of the study, just the quantitative deviations among the groups are of interest and effect measures constitute the only unbiased basis for comparison since they are independent of sample size.

Effect qualification is also oriented along Cohen's (1977) guidelines. For analyses of variance, even small f values of .10 are seen as interpretable quantities⁶⁴ in order to prevent the effects from the small samples, which have less impact in the analysis of variance than the large one, from getting lost from the very outset. By contrast, in the comparisons of means among the samples, with $d = .35$, a uniform and at least approximate medium effect is assumed to be substantive.⁶⁵ Here it seemed justified to apply a more strict standard since smaller deviations with regard to the question of therapy indication do not appear sufficiently meaningful.

63 In comparing the sub-samples from social therapy and regular prison, as well as the comparison of the matched standard sample and that of the regular prison, a power of .80 already resulted for $d = .40$ respectively $d = .30$. (These values refer to a two-tailed test. For the calculation see Cohen's Power Charts, Cohen 1977, p.27 et seq.) For these comparisons of the large samples, the values of the statistical power for $d = .45$ are already .86 and .97.

64 As an illustration it should be pointed out that an f value of .10 corresponds to the sample statistic F at $\alpha = .10$ for the existing sample size.

65 An effect size of $d = .35$ represents 3% variance accounted for.

8.4 The results of statistical analysis

The study's results are on display in Table 1.⁶⁶ The following depiction must remain to a great extent limited to the statistical relations. The relevance of the results with regard to a therapy indication can, at best, be discussed only for specific points.

In the one-way analyses of variance we don't find interpretable values only on two of the scales (FPI 5 and 9). As the following multiple group comparisons show, the two sub-samples of offenders differ little from one another. Only in the scales "nervousness" and "reactive aggressiveness" medium deviations can be observed and, on the scale "spontaneous aggressiveness", a deviation which can be seen as an approximate medium effect. These differences imply that the therapeutic clients have somewhat less serious psychic disorders with respect to the way in which they portray themselves but this result is not confirmed by the other data.

However, as to the comparison group (matched standard sample), both samples of convicts showed considerable deviations in several scales. Very marked differences can be observed in each case especially in an increased depressiveness, as well as a lesser degree of masculinity. Also a markedly increased nervousness and emotional lability among the inmates of the regular prisons can be found and a markedly less reactive aggressiveness among the clients of the social therapy institution. On other scales we find medium sized effects, for example in a less pronounced imperturbability and greater lability among the subjects of the experimental group and increased spontaneous aggressiveness and extraversion within the control group. Moreover among the subjects of the social therapy unit, towards medium values in an increased extraversion, inhibition and nervousness can be observed.

Especially striking is the greatly increased depressiveness among the delinquents in both groups. As a consequence of these high effect scores, supplementary profile analyses were undertaken simultaneously across all scales, especially since some of them correlate highly with each other. In these analyses, we see that almost all the deviations in both samples of inmates can be ascribed to a syndrome of depressive-neurotic disturbance. For about one-third of the subjects in both samples, a therapeutic assistance for resocialization therefore seems indicated if the other results are also taken into account.

This example was presented in the hope that it would demonstrate that power analysis and effect estimation can be helpful, and are at times also an indispensable aid to interpretation. This is so not only because in this case measures of effect

⁶⁶ To contribute to greater transparency, the *p* values are given in Table 1, too; the values for the multiple mean comparison are adjusted corresponding to the DUNCAN Test.

Table 1: Comparison of the matched standard sample (N = 107), and the samples from social therapy (N = 48) and regular prisons (N = 193):
 Analysis of variance: F-values and significance $p_{(F)}$; effect size f_s ; multiple comparison of means (Duncan Test): effect size d and statistical significance p

	F	P (F)	f _s	Multiple comparisons of means (Duncan Test)		
				Social therapy vs. m. stand. sample*	Regular prisons vs. m. stand. sample	Social therapy vs. regular prisons
FP11 Nervousness	23.5	.000	.36	S↑; p = .10; d = .35	R↑; p = .001; d = .84	S↓; p = .01; d = -.47
FP12 Spontaneous aggressiveness	12.5	.000	.27	S↑; p > .10; d = .20	R↑; p = .001; d = .60	S↓; p = .05; d = -.36
FP13 Depressiveness	48.8	.000	.52	S↑; p = .001; d = 1.01	R↑; p = .001; d = 1.15	-
FP14 Excitability	3.2	.04	.11	S↑; p > .10; d = .28	R↑; p = .05; d = .31	-
FP15 Sociability	.7	.51	.06	-	-	-
FP16 Imperturbability	4.1	.01	.13	S↓; p = .01; d = -.50	R↓; p = .10; d = -.25	S↓; p = .10; d = -.29
FP17 Reactive aggressiveness (Dominance)	8.0	.000	.21	S↓; p = .001; d = -.74	-	S↓; p = .001; d = -.57
FP18 Inhibition	2.8	.07	.10	S↑; p = .05; d = .39	-	S↑; p = .10; d = .30
FP19 Openness	2.0	.13	.08	-	-	-
FP1E Extraversion	7.6	.001	.20	S↑; p = .05; d = .39	R↑; p = .001; d = .48	-
FP1N Emotional Lability	18.1	.000	.31	S↑; p = .01; d = .59	R↑; p = .001; d = .71	-
FP1M Masculinity	18.4	.000	.31	S↓; p = .001; d = -.86	R↓; p = .001; d = -.68	-

S↑ or S↓ = increased or diminished trait values in the subsample of inmates from the social therapy prison

R↑ or R↓ = increased or diminished trait values in the subsample of inmates from regular prisons

* = matched standard sample

size constitute the only basis for a direct comparison of deviations between the subsamples, independent of their size. Interest here focuses also on the magnitude of the differences. The fact that essential information were dropped is obvious furthermore from the direct comparison of statistical significance (expressed here by the more precise p values) and the effect sizes. On the scale FPI E for example, a comparison of inmates from social therapy confinement and regular prisons shows an α of .001 for a $d = .48$, that is a difference which is not even half as large as on scale FPI 3. The effect size of $d = .48$ on scale FPI E, corresponds to a comparatively small proportion of 5.5% of variance accounted for, compared with 25% for $d = 1.15$ on scale FPI 3. This shows that a "ceiling effect" is linked to the criterion $\alpha = .001$; it is not possible to know about the magnitude of effects which transcend this criterion and valuable information would be lost without measures of effect size.

Moreover, a strong asymptotic relationship exists between statistical significance and the magnitude of effects. This can be seen to some extent from scales FPI 6, 4 and E. The p values of .10, .05 and .001, correspond to effect criteria of .25, .31 and .48. Thus, regardless of the sample size, the significance level therefore always increases disproportionately to the underlying effects. For this reason, we are frequently inclined to attribute an inappropriate high status to an α of .001 compared with one of .10, which is hardly in line with the proportion of variance accounted for.

We don't want to deny that difficulties are associated with the practical application of power and effect size analyses. However, it should have become clear that both procedures constitute a helpful and, in many cases, a necessary aid to interpretation of empirical findings.

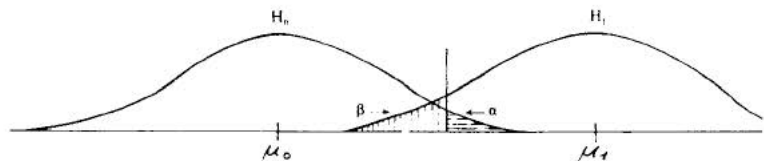
9. Summary

Studies which find no effects are a widespread phenomenon in evaluation research and the field of criminal justice is no exception in this respect. Although, in practice, treatments often do not meet the expectations placed in them, all too often it can be found that the research methods employed are not sensitive enough to detect existing effects. An essential reason for this lies in the rigid application of statistical significance tests. Here, the criticism is justified insofar as, on the one hand, they are frequently associated with insufficient statistical power and, on the other, do not appropriately express the magnitude of effects. It is precisely in evaluation research that sensitivity often is drastically reduced since the manifold constraints in the field contribute appreciably to unsystematic variance. The concept of statistical power as well as measures of effect size have hitherto been accorded

little attention. Difficulties, when applying both in practice, should not cause these procedures to be rejected out of hand since these difficulties are inherent in inferential statistics anyway. The determination of both statistical power and effect size permits a more efficient and appropriate evaluation of research findings. They contribute to more transparency and meaningfulness especially when evaluation studies can only be performed in the presence of considerable methodological constraints and they prevent promising treatments from being abandoned without good reason.

Annex

Diagram 1:



Formula 1:

$$\delta_y^2 = \rho_{xy}^2 \cdot \delta_T^2 / P_{xx'}$$

δ_y^2 = observed-score noncentrality parameter

δ_T^2 = true noncentrality parameter

ρ_{xy}^2 = reliability

$P_{xx'}$ = validity

Formula 2:

$$\lambda'_{y} = \frac{NK^2\gamma^2\Sigma\tau^2}{K^2\sigma^2 + K^2\sigma_{\delta}^2 + \sigma_{\phi}^2 + \sigma_{\xi}^2}$$

λ'_{y} = noncentrality parameter under field conditions

K = validity of the response variable

γ = fidelity of treatment

τ = treatment variable

σ^2 = variance of the response variable

σ_{δ}^2 = variance of the treatment

σ_{ϕ}^2 = irrelevant variability of the response variable

σ_{ξ}^2 = random error of measurement

N = sample size

Formula 3:

$$\text{noncentrality} = c \cdot \frac{\Sigma (\mu_k - \mu)^2 / K}{\sigma_e^2}$$

c = constant

K = number of treatments

σ_e^2 = population error variance

Formula 4:

$$f_s = \sqrt{\frac{(J-1) \cdot (F-1)}{n \cdot J}}$$

J = number of treatments

n = (average) sample size of the treatment groups

F = F-statistic of analysis of variance

Formula 5:

$$d = (\bar{x}_A - \bar{x}_B) / s_e \quad s_e = \sqrt{\frac{\sum (x_A - \bar{x}_A)^2 + \sum (x_B - \bar{x}_B)^2}{n_A + n_B - 2}}$$

\bar{x}_A / \bar{x}_B = means of the treatment groups

s_e = pooled within sampled estimate of the population standard deviation

n_A / n_B = sample sizes

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Subcultural Integration and Prisonization

Structures and Stability of Prisonization Determinants in Regard to Inmates of Juvenile Correctional Facilities

Raimund Tauss

In the past few years, the criminological discussion on the causes and conditions of the prisonization phenomenon has subsided noticeably and penology has turned to new topics such as, e.g., comparative studies of correctional measures. In spite of this, the subject of negative detentive effects is still as actual as ever and should, in view of the rather disappointing findings established by treatment research, be kept track of.

The development of models of prisonization processes seems to have come to an end. Whereas, originally, two contradictory models explaining prisonization were discussed, a rather more comprehensive perspective, integrating hypotheses derived from both, seems to be employed at present.

The deprivation model, based essentially on early prison-sociological studies carried out by Clemmer (1958) and Sykes (1958), regards the formation of deviant inmate groups and processes of adapting to these subcultural systems¹ as reactions to the depriving conditions of confinement, strictly oppositional attitudes toward the institution being characteristic of this informal inmate organization. This assumption has been verified particularly by comparative organizational studies which were able to posit a relation between the degree of prisonization and the prevalent organization, i.e., the degree of depriving coercion exerted;² nevertheless, this "closed-system" approach was criticized increasingly.

In 1964, the classical essay written by Irwin & Cressey was published, serving as a point of reference for many papers to come which dealt with the importa-

1 Regarding the term "subculture", see Brake 1980; Cremer 1984; Klingemann 1983.

2 See Akers et al. 1977; Thomas et al. 1981.

tion model. The authors do not question the fact that the inmate subculture is a reaction to prison-specific influences, rather, they reject the assertion that the possibilities of solving the problems of confinement can be developed solely within prison. They assume that a high proportion of inmate behavior is "imported" from outside, it is hence not to be considered prison-specific.

In the literature on imprisonment we find empirical evidence for both models.³ This supports the application of an integrative model, which considers both preinstitutional inmate experiences and prison-specific aspects important conditional factors of prisonization.⁴

It is indeed astonishing that, in spite of close to 50 years of research, no binding definition and operationalization of the theoretical construct named "prisonization" has emerged. Merely the fact that prisonization has an unfavorable effect on inmate resocialization, thus constituting a factor which impedes the efforts of correctional treatment, has been unanimously recognized.

Clemmer defined prisonization rather vaguely as "the taking on in greater or less degree of the folkways, mores and the general culture of the penitentiary".⁵ Most studies adopt this definition, applying, however, numerous operational definitions of the degree of assimilation into the inmate system. While some authors concentrate upon **manifest behavior** such as illegal gambling, drug abuse or even homosexuality,⁶ others focus on **attitude variables** such as oppositional inmate attitudes toward the law, the prison staff and institutional goals or on the **degree of embracement** of a delinquent inmate code. Others, in turn, assess subcultural integration in terms of level of integration into the institutional social system such as social role assumed or degree of emotional orientation to fellow-inmates.⁷

The above-cited multifariousness of variables with regard to their contents gives rise to doubts as to the homogeneity of data collected. This, in turn, gives rise to the question whether the prisonization factor represented by these various (presumed) facets of prisonization is really of a comprehensive nature. Speaking in terms of test methodology: the scale labelled "prisonization" ought to be sufficiently stable within itself, i.e., adequate levels of both correlations and selectivity between the variables (in this context, operational definitions used by literature) are essential prerequisites. If these premises are not guaranteed, the inconsistency of term usage would surely be partially responsible for the resulting inconsistency of the empirical findings.

3 See Klingemann 1975, regarding a general survey; Jacobs 1974, Thomas 1972.

4 See Wellford 1967; Cline & Wheeler 1968; Schwartz 1971; Akers et al. 1977.

5 Clemmer 1958, p.299.

6 See Akers et al. 1974; Thomas 1977.

7 See Ortmann 1985.

In sum, we should demand that the development of prisonization models should rather focus on rendering the implications of the construct labelled "prisonization" more precise. This would enable us to examine the conditions and effects of different prisonization dimensions by determining the relative explanatory power of each model taken separately and of an approach combining both these contradictory perspectives.

1. Statement of the problem

This study is intended to examine the correlations between various variables regarded by literature, *inter alia*, as possible dimensions of prisonization, as well as variations in the structures of determinants of prisonization which have occurred in the course of juvenile confinement. An analysis of these correlations at different intervals would render indications as to the mechanisms underlying the development of delinquent behavior.

These discussions, focusing on different indicators of subcultural integration, will also enter into the question whether we may regard emotional assimilation into the inmate subculture as an important determinant of prisonization.

1.1 Theoretical considerations

Most studies of prisonization focus on the inmates' assimilation into the subculture. Hence, our theoretical reflections hereupon will have to take into account juvenile peer groups as a factor of basic importance.

The status of peer groups as an important factor of socialization and the relevance of integration into these "cliques" as an important determinant of the self-concepts, norm perceptions and attitudes toward other social groups is generally recognized.

Focusing on those functions of peer groups which are of significance for the study reported here,⁸ we can state that peers contribute considerably to socialization especially during the phase of making the transition to adult roles. Peer groups, social systems quite beyond the influence and control of adults, constitute "training grounds", enabling their members to develop behavioral patterns of their own, a high level of autonomy rendering possible involvements in deviant activities without directly effecting sanctions and feelings of insecurity. Peer groups contribute es-

⁸ See, e.g., Neidhard 1970; Baacke 1976; Seitz & Götz 1979; Krappmann 1980; Schäfers 1982; Stenger 1984.

entially to personality and identity development as they render possible experiences of being accepted, which, in turn, promote feelings of self-esteem. Apart from the fact that the juveniles are given the opportunity to practice and become acquainted with various forms of social relations, the process of accepting and assimilating the socio-cultural values governing within a particular group exerts an influence on personality development. Peergroups therefore play an important role in the process of **adaptation and integration**, both of which effect certain behavioral patterns, notions and norm orientations.

Moreover, peer groups have both a **protective and a compensatory function**.⁹ Adolescents have a need for relations which guarantee behavioral stability. Peer groups are the main source of security and status both of which they are deprived of by the larger modern society strongly governed by adult principles. Here they are assisted in withstanding society's pressure of having to adapt, the day-to-day strain is reduced and they meet with sympathy for the great many problems typical of their age, caused by such factors as sexuality and development.

It is only fair to assume that the specifics of peer relations create the conditions of deviant behavior and attitudes with regard to causes, development and stability. Indeed, the fact that delinquent acts are for the most part committed in the company of peers is a common observation in delinquency research.¹⁰ Most theories of juvenile delinquency therefore focus also on peer groups, attaching the same degree of importance to age-specific group phenomena as to the influence exerted by both family and socializing authorities.¹¹ There is, however, some fundamental disagreement regarding the formation and consequences of adolescent peer group relations. At present, there are numerous theoretical approaches to these questions, all of which exhibit little agreement as to the extent to which attachment to peers promotes delinquent behavior. There is considerable controversy concerning the motives for joining delinquent groups and the assumption that emotional integration into peergroups inevitably results in an assimilation of prevalent delinquent orientations and activities. Moreover, there are various models explaining the underlying mechanisms. Criminologists are no better off in this context than those psychologists studying the correlations between attitude variables and behavior.¹²

9 Machwirth 1980, p.252 et seq.

10 Lamnek (1985, p.193) reports that the proportion of all offenses committed within a group context equals 1/3, whereas, introducing age as variable, the proportion obtained for adolescents amounts to 2/3 which is disproportionately high.

11 See Schafers 1982, regarding an outline.

12 See Mummendey 1979, 1982.

Criminological research findings in this context are often contradictory. Yet, we are able to describe different approaches to **linkages** between and **development processes** of the variables "delinquent attitudes", "delinquent behavior" and "delinquent peer group".

Hanssell and Wiatrowski classified existing theories of juvenile delinquency according to the underlying hypotheses dealing with structures, contents and functions of peer relations, even at the risk of not being able to do justice to the complexity of these theories.¹³

The first group of delinquency theories, classed under the general term "social disability model", assumes that juvenile delinquents lack "normal" social skills. Unfavorable familial socialization is regarded as the main cause of this social ineptitude; as a result, experiences of failure are made, arising out of unsatisfactory contacts to conventional social groups and institutions, leading, in turn, to an ever increasing degree of social disintegration.¹⁴ The juvenile develops a delinquent self-concept, which, in turn, leads to a changed social self-concept. Delinquent attitudes and involvements can be regarded as an attempt to "settle" problems which have emerged.¹⁵ The fact that the adolescent now turns to subcultural and delinquent groups (whose members are possibly in the same position) which differ from "normal" groups in that they are unorganized and unstable, their shared standards lacking in complexity, is only secondary.¹⁶ Several case studies have documented these deficiencies in social skills.¹⁷ Social control theories,¹⁸ above all, are based on these assumptions.

Theories of delinquency which can be collectively labelled "social ability model" are based on quite differential assumptions. Differential association theory,¹⁹ and subcultural theory,²⁰ two theories appointed to this model, assume that the basic social skills of both delinquents and nondelinquents match. Moreover, they hypothesize that delinquents share norms which may be as complex as the norms governing within "normal" peer groups, but which are quite different in con-

13 Hanssell and Wiatrowski (1981) point out that their model is limited to a comparison of the implicit hypotheses proposed by various theories of delinquent peer relations.

14 See Stenger 1984, regarding the term "social disintegration".

15 See the career model developed by Quensel, which also takes into account society's reactions (Quensel 1970).

16 See Chapman 1986

17 Most studies were conducted in the USA in the fifties and sixties. The question as to the degree of influence exerted by this fact on theory development is beyond the scope of this study. However, an uncritical, unlimited application to the living conditions in the Federal Republic of Germany is questionable. See Lamnek 1985, p. 270. Regarding recent subcultural research, see Homans 1974; Seitz & Götz 1979; Kersten & v. Wolffersdorf 1980; Gold & Petronio 1980; Biath, Dillig & Frey 1980; Stenger 1984; Chapman 1986.

18 See Glueck & Glueck 1950; Hirschi 1969.

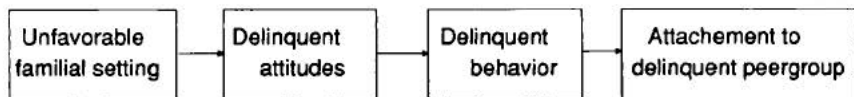
19 Sellin 1970; Sutherland & Cressey 1974.

20 Cohen 1955; Cloward & Ohlin 1960; Spergel 1964; Lerman 1967.

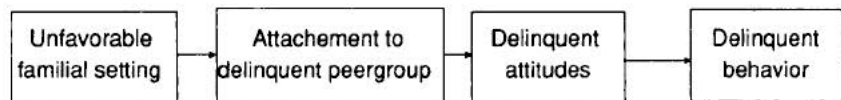
tent. This model, too, suggests that disturbed familial socialization processes result in an attachment to delinquent peer groups, as contacts to adapted persons and institutions (parents, friends, school) lack completely or fail, creating a need for compensating these deficiencies.

In sum, the statements delinquency theories make regarding the conditions which induce adolescents to join delinquent peer groups are but little differential. However, the development process of a delinquent self-concept is viewed differentially.²¹ The following diagrams illustrate the differential hypotheses of both models with regard to cause and effect of the relevant determinants:

Social disability model:



Social ability model:



In sum, both models differ with regard to the chronological sequence and underlying mechanisms of the transmission of delinquent attitudes, a controversy corresponding with the contrary positions of both prisonization models to a high degree. This is no surprise, as adolescent subcultures in juvenile prisons can be considered extreme forms of juvenile peer groups. Numerous mechanisms underlying both these types of integration processes may be quite similar.

The intent of the study reported here is, for one, to discuss the relations between emotional attachment to the inmate group and deviant juvenile attitudes; moreover, the variations of these determinants in the course of confinement will be dealt with.

²¹ See Hepburn 1977.

1.2 Hypotheses

In sum, both research on peer groups and research on prisonization (in this context referring above all to those theories to be appointed either to the deprivation or to the subcultural model) examine the correlations between the adolescents' emotional orientations to other groups and orientations in terms of attitudes and values. Fundamental differences refer to the chronological sequence of the underlying factors, which, in turn, pertains to the question as to the dependence and independence of variables.

One possible methodical approach to this matter could be an analysis of chronological processes. The fact that most studies conducted to date are cross-sectional studies limits their explanatory power considerably. A longitudinal design would enable us to make hypothetical statements with regard to correlations obtained. We have chosen the latter approach, as the implicit hypotheses of both models differentiate particularly with regard to chronological development processes of deviant attitudes.

By using appropriate statistical methods, we are able to categorize the chronological variations of prisonization determinants, as follows:

- **Time effect:** This effect refers to changes to be observed for practically all respondents. Theoretically, by applying the deprivation model, we might interpret these changes as consequences of imprisonment or as maturation processes.
- **Selection effect:** This effect refers to basic differences, viz., differences both preexisting and persisting throughout confinement. This would correspond to hypotheses proposed by the importation model.
- **Interaction effect:** Effect of the independent variables such as, e.g., emotional integration. The variations obtained are sample-specific, a fact to be explained by a combined model.

The relative explanatory power of both models and a combined perspective can be assessed on the basis of the intensity of these effects.

The study reported here is intended to determine just these impacts by examining a number of dependent variables regarded by previous research as determinants of prisonization. We shall examine the extent to which normative attitudes, value orientations and social distance have changed in the course of correction, employing as dependent variable the adolescents' integration into the inmate subculture, operationalized as emotional integration into group of fellow-inmates.

To illustrate this important aspect of prisonization theories, we can raise the following questions:

- Which predominant orientations most likely lead to an attachment to adolescent inmate groups upon commitment to prison? The answer is found in an examination of the relations between general attitude variables and indicators of the

inmate's emotional assimilation into the subculture at the time of commitment, as well as in a determination of the underlying selection effects.²²

- What is the consequence of this attachment for the inmate's attitudes? To answer this question, we will examine the changes in the dependent determinants which have occurred in the course of confinement, using as independent variable the emotional orientation to fellow-inmates.
- Which variations can be interpreted as general consequences of imprisonment?

Hypotheses:

- If essential hypotheses proposed by the importation model were to apply, the variables delinquent attitudes and subcultural integration into inmate subculture at the time of commitment would have to correlate significantly. We would expect that no distinct variations have occurred in the course of imprisonment. The selection effect obtained here would be considerable.
- If essential statements made by the deprivation model were to apply, we would have to establish the fact that the attitude patterns of practically all inmates have been subject to changes, as the restrictive conditions of confinement would affect each one of them. In this context, the time effect observed would have to be distinct.
- A significant interaction effect, obtained in case the subsamples develop in differential, specific manners, would favor the approach by means of an integrative model.

2. Project design and operational definitions

The following is based on a longitudinal study conducted with 96 inmates of a juvenile prison. The data are part of a larger research project carried out by the Max Planck Institute for Foreign and International Penal Law, dealing with the impact of social-therapeutic treatment efforts on both inmates and prison officials of the juvenile facility Berlin-Plötzensee.

Inmates were given questionnaires twice at an interval of about 7 months, the first having been completed shortly after commitment to this institution. To meet the objective of a large-scale evaluation process, a rather extensive test battery was employed, dealing with dimensions covering the three realms personality, attitudes and motivation. Moreover, the inmate files were evaluated with regard to biographical determinants and factual conditions of confinement.²³ However, the study reported here is intended to merely enter into the particulars of probable determinants of prisonization.

²² The question as to the connection with personality characteristics in the classical sense is beyond the scope of this study. See the essay by Ortmann in this volume.

²³ See Tauss 1987, regarding a detailed description of research design, instruments and findings.

To measure these determinants, we employed an instrument developed by Ortmann which unites the operational definitions of the above-described theoretical approaches for the first time, thus covering a wide range of prisonization determinants. Apart from addressing attitudes toward delinquency and legal behavior, it examines the aspects value orientation, integration into delinquent groups both within and outside of the institution, and oppositional attitudes toward prison officials.²⁴ This "Fragebogen zur Prisonisierung" (Questionnaire on Prisonization), adapted by the author for the purpose of being employed in juvenile correction, exhibits a satisfactory degree of internal scale consistency. The coefficients obtained ranged at about .80, the average number of items per scale equalling 10.

3. Findings

3.1 Correlations between determinants of prisonization

To obtain further indications as to the structure of prisonization and to assess the validity of theoretical hypotheses we intend to focus first on the statistical correlations between the variables at the time of admission. Moreover, we might reach a better understanding of the implications of prisonization determinants.

The relations posited between the scales are illustrated by Table 1. The values listed here describe the correlations obtained for the first series of interviews. To arrange this table more clearly we listed only values $r > .20$. Correlations which are highly significant are typed bold-faced.

Focusing first on the respondents' normative attitudes we find that, with regard to scale PRIS-1 "Attitudes toward the law", referring to statements on the reasonableness of both laws and state bodies, inmates guided by rather aggressive, anti-conventional attitudes obtain the highest values. The two scales PRIS-1 and PRIS-2 correlate positively to an extent which is clearly significant. Adolescents exhibiting rather negative attitudes toward the law were more inclined to consider themselves wrongfully convicted and imprisoned than conformable inmates. The variables rejection of both institution and prison representatives (PRIS-10) and sense of organizational powerlessness with regard to self-determination (PRIS-11) are valued accordingly. Apparently, those rejecting present laws also reject other social standards and are lacking in appreciation of regular vocational training or occupation.

²⁴ Regarding a description of scales, see Ortmann in this volume. For further detailed information and findings concerning this instrument, see Tauss 1987, p.69 et seq. and Ortmann 1987, p.302 et seq.

Table 1: Correlations between prisonization determinants ($r > .20$)

Determinant of prisonization	1	2	3	4	5	6	7	8	9	10	11	12
PRIS-1: Attitudes toward the law	-	.38	.71	.43	-.48	.38		.28		.54	.43	.38
PRIS-2: Attitudes toward current offense	.38	-	.40	.34	-.32			.34		.30	.27	.26
PRIS-3: Postrelease expectations: legal behavior	.71	.40	-	.53	-.55	.48		.50		.42	.40	.40
PRIS-4: Value orientations school/occupation	.43	.34	.53	-	-.58	.46		.35		.42	.39	.40
PRIS-5: Postrelease expectations: occupation	-.48	-.32	-.55	-.58	-	-.38	.23	-.36		-.50	-.48	-.50
PRIS-6: Contacts with persons outside: criminal orientations	.38		.48	.46	-.38	-		.55		.21	.27	.28
PRIS-7: Contacts with persons outside: emotional integration					.23		-					
PRIS-8: Integration into inmate groups: criminal orientation	.28	.34	.50	.35	-.36	.55		-	.33	.36	.31	.44
PRIS-9: Emotional integration into inmate groups								.33	-	.25		.21
PRIS-10: Oppositional attitudes toward institution	.54	.30	.42	.42	-.50	.21		.36	.25	-	.74	.53
PRIS-11: Restrictions on self-determination	.43	.27	.40	.39	-.48	.27		.31		.74	-	.56
PRIS-12: Threat through fellow-inmates	.38	.26	.40	.40	-.50	.28		.43	.21	.53	.56	-

Such oppositional-aggressive attitudes are also partially of a resigned nature. Postrelease chances of getting a satisfactory job (PRIS-5) are considered quite low, the risk of being imprisoned anew (PRIS-3), however, being regarded as rather high.

One might now expect a rather plausible, though heterogeneous factor of prisonization behind all these aspects, which can be considered polarized - one extreme to be labelled "oppositional-resigned", the other "conformable optimistic". The fact that, in this context, various evaluating attitudes, relevant within the meaning of delinquency theories, included highly emotional elements deserves notice. The pole characterized as oppositional, protesting aggressive and rejective corresponds to individual traits such as "timid", "resigned" and "apathetic", whereas orientations which are rather conformable, positive and self-critical seem to be closely linked with an optimistic and even-tempered nature. Using these traits as indicators of the degree of "delinquency risk" enables us to fit the above-cited determinants into the instrument developed by Ortmann,²⁷ as they can now be appointed to those central dimensions of personality regarded by Ortmann as crime-relevant. E.g., the item "resignation" can be considered a component of "depressivity"; moreover, the reports given by prison-insiders and the typology of various forms of adaptation to prison-life suggest this linkage.²⁸ In sum, instead of representing a self-contained subculture (at least at the outset of confinement), the inmate population has proved to be a rather heterogeneous group of juveniles, its members exhibiting quite differential levels of embracement of society's normative system, these orientations, in turn, for some parts being linked with certain elements of a highly emotional nature.

We shall now proceed to determine both the adolescents' attitudes toward their fellow-inmates and the correlations between these relations and the above-cited determinants, focusing first on inmate orientations to peer groups.

The "Fragebogen zur Prisonisierung" (Questionnaire on Prisonization) differentiates between orientations to peers within and to peers outside of the institution, two aspects of assimilation into peer groups being simultaneously addressed - while scales PRIS-7 and PRIS-9 assess the emotional attachment to peers regardless of the latter's orientation, PRIS-6 and PRIS-8 focus on integration into groups explicitly labelled "delinquent".

Apparently, emotional attachment to groups outside of the institution (PRIS7) does not depend on the inmates' orientations, values or postrelease expectations, for we were not able to establish any significant correlations with other determinants; in this context, the fact that no correlation with PRIS-6 was obtained is par-

²⁷ See Ortmann in this volume and Ortmann 1987.

²⁸ See v. Trotha 1983, p.47 et seq.

ticularly striking. It seems that emotional orientation to peer groups outside of the institution does not correspond to the factual or presumed level of delinquency involvements of these peers.

The case is quite different with regard to the prison setting. Those inmates experiencing a strong sense of inclusion (in an inmate group), simultaneously drawing trust and feelings of security from this integration, more readily label these fellow-inmates "criminals" than, e.g., their friends outside. However, as mentioned above, orientations to fellow-inmates do not exert any influence on general orientations such as, e.g., attitudes toward the law, which gives rise to the assumption that the correlation between PRIS-8 and PRIS-9 merely reflects self-images deeply wounded by legal procedures and by recent, degrading experiences of being committed to prison, both of which have led to frustrations. The impact of these experiences, a detailed account of which has been given by Sykes,²⁹ is undoubtedly much stronger for adolescents than for adults with a longer criminal "career".³⁰ In my opinion, the fact that adolescents who have made such experiences more readily label both themselves and their friends "criminals" as compared to inexperienced inmates seems plausible.

Another variable considered important by most prisonization models is oppositional attitudes toward the institution, manifest through hostile behavior toward prison officials (PRIS-10). The correlation pattern of this determinant shows a high level of agreement with patterns of basic attitudes toward both the law and other social standards. The correlations with the other scales are significant and also similar both in nature and implication. This gives rise to the conclusion that a vague non-acceptance of the larger society and its standards is extended both to the institution and its representatives, with, however, one exception: while the correlations shown by inmates' attachment to the law (PRIS-1) and emotional integration into fellow-inmate group (PRIS-9) were but insignificant, the latter correlate highly positive with oppositional attitudes toward the institution (PRIS-10), a fact which might be proof of a polarization between both groups. In sum, inmates rejecting the institution tend to turn toward fellow-inmates, whereas those getting along well with the prison officials exhibit a lower degree of integration into the inmate group.

²⁹ See "the pains of imprisonment", Sykes 1958.

³⁰ As to the inmate sample examined here, the proportion of adolescents being imprisoned for the first time amounts to two thirds.

3.2 Impact of emotional integration into inmate group on prisonization determinants

So far, we have only discussed the correlations between prisonization determinants at the outset of correction. Now we shall focus on the impact of inmate integration into the institutional subculture.

To be able to identify such effects we need to determine whether the two groups "poorly integrated" and "highly integrated" exhibit basic differences, viz., differences which preexisted confinement, for if this were the case, we would need to interpret variations which have possibly occurred in the course of correction quite differently.³¹ In this context, the importation model would have the higher explanatory power.

Moreover, we intend to determine general time effects (see above), changes which are to be explained in terms of either processes of maturation or general effects of prison-life, the latter of which seems to be the more plausible explanation.

To determine the above-described effects we chose a multivariate analysis for repetitive-measurement designs as statistical procedure,³² based essentially on a simultaneous comparison of 4 values (2 samples, 2 chronological measuring points). To obtain samples of a sufficiently contrasting nature the median value distribution of variable PRIS-9 served as cut-off value; respondents with a minor scale score were labelled "poor emotional integration", the remaining high-score respondents being classified in terms of "high emotional integration". The analysis to follow is based on values depicted by Table 2.

3.2.1 Selection effects

Selection effects describe basic differences between both samples which persist throughout the period of confinement and are hence obtained by both measurements. These differences, to be explained neither in terms of chronological changes nor by the impact of prison conditions, has to be linked to the variable emotional integration.

An extremely strong selection effect is obtained for scale PRIS-9, a fact which is no surprise, as this scale was used to dichotomize the total sample into the groups examined here.

Moreover, variable PRIS-8 shows a rather strong selection effect. Those stating that they feel a strong sense of belonging to the inmate group are more apt to

31 See also reports on treatment research.

32 A guideline for the analysis reported here was Ortmann's statistical mode of operation for the analysis of correctional treatment effects. The statistical package chosen was SPSS9 (Hull et al. 1981), statistical procedure MANOVA.

Table 2: Transformation analysis (MANOVA) of determinants of prisonization;
Contrasting samples: poor vs. high emotional integration into inmate groups

Determinant of prisonization	Poor integration					High integration					Effects		
	N	X ₁	S ₁	X ₂	S ₂	N	X ₁	S ₁	X ₂	S ₂	SEL	TIME	INT
PRIS-1: Attitudes toward the law	47	.50	.30	.49	.25	49	.42	.23	.47	.20	.25	.42	.27
PRIS-2: Attitudes toward current offense	46	.41	.24	.42	.25	48	.44	.24	.47	.23	.31	.53	.61
PRIS-3: Postrelease expectations: legal behavior	46	.37	.25	.34	.24	46	.38	.21	.39	.19	.49	.86	.42
PRIS-4: Value orientations school/occupation	47	.21	.25	.31	.30	47	.34	.25	.40	.25	.012	.012	.47
PRIS-5: Postrelease expectations: occupation	47	.74	.25	.69	.24	50	.71	.21	.64	.25	.23	.029	.74
PRIS-6: Contacts with persons outside: criminal orientations	43	.20	.31	.27	.30	44	.24	.27	.35	.32	.29	.009	.45
PRIS-7: Contacts with persons outside: emotional integration	48	.81	.18	.75	.26	52	.85	.17	.72	.25	.94	.000	.16
PRIS-8: Integration into inmate groups: criminal orientation	46	.28	.29	.32	.24	49	.45	.30	.46	.31	.002	.58	.60
PRIS-9: Emotional integration into inmate groups	46	.24	.15	.40	.22	49	.68	.15	.52	.22	.000	.72	.000
PRIS-10: Oppositional attitudes toward institution	46	.41	.30	.44	.27	47	.52	.28	.51	.24	.056	.78	.53
PRIS-11: Restrictions on self-determination	45	.60	.29	.61	.28	46	.65	.25	.64	.28	.38	.98	.70
PRIS-12: Threat through fellow-inmates	46	.56	.28	.57	.29	50	.69	.23	.62	.27	.049	.22	.21

N sample size; X₁, X₂ sample mean at 1st or 2nd interview; S₁, S₂ standard deviation at 1st or 2nd interview
SEL selection effect; TIME time effect; INT interaction effect (significance)

label these fellow-inmates "criminals", a finding matching the significant correlations established between these determinants.

However, it is to be doubted that this implies that delinquent attitudes are automatically transmitted, as no selection effects are obtained for the variables attitudes toward the law, attitudes toward (own) current offense and postrelease expectations with regard to legal behavior and occupation. While the samples do not differ significantly in their criminal orientations to the outside world, they are quite differential with regard to PRIS-4 "value orientation school/occupation". Those highly integrated into the inmate subculture obtain scale-scores, the average level of which is higher as compared to the scores established for poorly integrated adolescents, a finding implying a higher degree of doubt on the part of the former as to the sense of vocational training and honest work.

A selection effect is also obtained for PRIS-10 (attitudes toward the institution), a fact which seems to be linked to rejections of school and occupation reported by this subsample, as the institution pursues the aim of resocializing the adolescents by providing the possibilities of both educational and vocational qualifications and by habituating them to regular work.

The selection effect established for PRIS-12 "threat through fellow-inmates" is at first surprising. On the average, highly integrated adolescents obtain higher scores, indicating that they are more afraid of their fellow-inmates. However, the scale goes beyond this in substance, for high-score respondents react to this sense of being threatened with an "ideology of toughness" which also includes the possibility of pushing through their interests by acts of violence. One item, e.g., reads as follows: "The only way to hold one's own against the other inmates is to apply brute force", another running: "I can only survive this by being tough". The scale's labelling hence only represents one aspect of this variable. Inmates which are highly oriented to the institutional subculture have probably adopted the code of "tough jailbirds" into their self-concept, a finding also indicating that they have assimilated into the prison-specific deviant normative system to a certain extent.

In sum, a higher degree of integration into the inmate group does lead to deviant orientations, yet, the fact that no selection effects were established for the scales dealing with general normative orientations such as attitudes to the law gives rise to the assumption that these orientations are only developed within the institutional context and are not necessarily carried over into the postrelease situation.

3.2.2 Time effects

Time effects enable us to draw conclusions as to the chronological stability of determinant scores. As shown by Table 2, some attitudes hardly change at all, while

others vary considerably, both of which are findings also indicating that the dimensions dealt with are heterogeneous.

Focusing on emotional integration into reference groups outside of the institution (PRIS-7), illustrating relations to former peers in consideration of two aspects, we note that a high time effect shows. High-score respondents characterize these relations in terms of mutual understanding, reliability and trust, stating, moreover, that they were suffering greatly from being parted from their friends. In the course of confinement, these scores decrease noticeably. Proceeding from the hypothesis that an initial shock of being admitted to prison (one aspect being just this forced separation from one's friends) gives way to an adaptive process, this finding seems plausible. On the other hand, the emotional attachment to groups outside also decreases, a fact possibly to be interpreted as social disintegration in light of the heavy restrictions imposed on contacts and communication during confinement. In spite of this, the extent of this loss of attachment is surprisingly high, a phenomenon possibly not very beneficial to postrelease reintegration into society.

Starting from the fact that all human beings have a basic need for human relations, one might hypothesize that the degree of inward (i.e., oriented to institution, prison officials or inmate subculture) emotional integration increases. This, however, has not proven true.

However, criminal orientations of both groups to the outside increase instead. This can not be explained in terms of general increase in delinquent orientations, for the variations obtained for PRIS-1, 2, and 3 are but small. Moreover, the degree of criminal orientation to inmate groups (PRIS-8) remains quite stable. Therefore, the only possible explanation left is that this development reflects relations to fellow-inmates whom the adolescents have become acquainted with during confinement and who have been released in the meantime. Possibly, these relations persist even after these fellow-inmates have been released.

A third time effect is obtained for PRIS-4 and PRIS-5. Both groups' postrelease expectations of getting a job become more pessimistic in the course of confinement, value orientations to schooling/occupation decreasing also. These negative perspectives are probably linked to the fact that release is slowly approaching, forcing the adolescents to make concrete plans for the future. In this context, pessimism only reflects a realistic judgement of the job situation. It is only natural that this assessment would affect the values linked with it, and, to speak in terms of social psychology, can be interpreted as an "attempt to reduce dissonances".³¹

31 See Festinger 1957; Frey and Benning 1983.

3.2.3 Interaction effects

These effects describe the most interesting variations of scale scores - the interaction between subsample (degree of peer group orientation) and score changes in the course of confinement. This interaction would be the only effect which could be rated as a result of subcultural integration.

The only interaction effect was established for scale PRIS-9 itself. For this scale we have already determined a high selection effect, caused, however, by the method we chose for obtaining two subsamples in order to achieve a high degree of contrast between both these groups. Variations occurring in the course of imprisonment depend on the respective values obtained at the initial measurement. It stands to reason that one would rather expect the trend of high-score respondents to be downwards toward lower scores than vice versa. Imagining ourselves in the position of inmates, we will start from the fact that the inmate group has an important protective and compensatory function especially for those adolescents which are very much affected and shaken by confinement. The selection effect obtained for PRIS-10 shows that adolescents who are highly integrated into the subculture simultaneously exhibit oppositional attitudes toward the institution which can be interpreted as aggressive reactions to imprisonment. Attachment to fellow-inmates provides feelings of security on the one hand, constituting, however, a perpetual source of conflicts with the institution on the other hand. However, owing to the shifting of scores which has been observed, this ambivalence is reduced in the course of time.³²

Focusing on the remaining determinants of prisonization we find that no further interaction effects can be determined with peer group orientations. Theoretical considerations, based on the assumption that the degree of emotional integration into the inmate group exerts an impact on attitudes and value orientations which are relevant to resocialization are hence not confirmed.

³² It might be interesting to examine the reason that, while emotional attachment decreases, oppositional attitudes toward the institution remain quite constant, for a reduction of rejective attitudes would reduce the discrepancies between both determinants. This phenomenon possibly reflects the rough interpersonal climate within these groups.

4. Summary and conclusions

This essay deals with various attitudes, orientations and values described by literature as determinants of prisonization.

As the various theoretical perspectives consider inmate integration into inmate subcultures an important variable of prisonization, the study reported here was focused on emotional orientations to peer groups. Apart from discussing the general structure of prisonization, we entered into the question as to the linkage between these relations and other determinants. Moreover, we attempted to determine the impact of subcultural integration on variations which have occurred in the course of detention.

Upon having analyzed the correlation pattern of our determinants, we obtained an enormous prisonization factor, composed of differential deviant attitudes. These delinquent attitudes, important within the meaning of delinquency theories, correspond with pessimistic, resigned perspectives, a fact matching hypotheses proposed by research on delinquency; it hence seems justified to class these heterogeneous operational definitions under the general term "prisonization".

These variables of prisonization, however, are hardly linked to emotional inmate orientations, leading to the conclusion that emotional integration into the inmate subculture is not to be put on a level with embracement of a deviant inmate code, rather, it constitutes a relatively independent factor within the plurality of prisonization determinants. Assimilation into the institutional subculture is linked with oppositional attitudes merely with regard to both institution and prison officials.

One might now reflect upon the relevance of this finding to postrelease resocialization. Prisonization is unanimously regarded as a factor impeding resocialization, as it is assumed that those exhibiting hostile attitudes toward the institution also do not accept any treatment measures offered by this authority, and are hence to be labelled "unresocializable".

However, the reasons that adolescents behave in a hostile manner toward the institutions are manifold, for in prison they are confronted with heavy restrictions, humiliations and a rough atmosphere. The fact that no correlations were obtained between this variable and the determinant dealing with standards governing "outside" gives rise to the assumption that these oppositional attitudes are prison-specific and do not necessarily outlive the period of confinement.

We checked this hypothesis by analyzing the variations exhibited by our determinants of prisonization in the course of confinement. Without exception, differences existing between both groups after about 7 months of confinement were able to be attributed to basic differences which had preexisted detention. However, this selection effect was only obtained for determinants which could be interpreted as prison-specific maladjustment such as oppositional attitudes toward the institution

and assimilation of aggressive behavioral patterns. However, more general attitudes such as orientation toward the law are not influenced by subcultural integration. This finding also supports the hypothesis that adolescents who are highly integrated into the inmate subculture do not necessarily fail after release.

The time-variations obtained were quite differential. A general time effect was shown by those determinants dealing with adolescent integration into groups outside of the institution, which could be considered a result of restrictions on contacts within prison. As there are fewer chances of communicating with one's former peers, these relations peter out and lead to an ever increasing degree of social disintegration. It stands to reason that this counteracts resocialization.

Further time effects were established for those determinants dealing with attitudes toward vocational training and postrelease expectations regarding employment, both of which probably reflect a resigned attitude, which, in light of the job situation, is quite realistic.

While the above-described variations were exhibited by practically all inmates (deprivation model), no correlations were established between emotional orientations to peer groups and variations exhibited by prisonization determinants. As such an interaction would be the only effect which could be considered a result of subcultural integration, we can conclude that assimilation into an inmate subculture per se does not impede resocialization. It is true that this integration and deviant attitudes within the prison context are connected to some extent, but selection effects of this kind should not be considered to be connected causally, they are rather linked to hypotheses proposed by the importation model.

There is proof that some determinants variate in the course of confinement regardless of subsample; one might hence assume that these determinants are only subject to prison-specific influences (deprivation model). Others, in turn, while being connected with subcultural integration, are not determined by this variable, as such differences are imported into the prison setting. This concerns for the most part general attitudes and orientations. On the whole, the findings of this study do not favor the approach by means of an integrative model. Rather, the determinants of prisonization seem to be heterogeneous.

However, further research on prisonization should follow. A verification of findings established here by conducting an analysis of correlations between subcultural integration and other determinants relevant to resocialization would be advisable. The wide realms of both dimensions of personality and behavior, in particular, are still to be studied.

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Deviant Inmate Behavior and Recidivism

An Empirical Study on Juvenile Prison

Isolde Geissler

1. Introduction

After commitment to juvenile correctional facilities, juvenile offenders, for a greater part not having led an "orderly" life before, are suddenly confronted with a stringent regimentation covering all aspects of a day spent in prison between rise in the morning and lock-up at night. The possibilities of violating institutional norms are therefore manifold. Due to the density of institutional controls, rule infractions are detected for the most part and, as a consequence, often sanctioned.¹

The **essence of sanctions** is that either existing liberties (e.g., of structuring one's leisure time, financial possibilities) are reduced or that privileges, which otherwise could have been granted, are withheld. **Effects of sanctioning** can be both an aggravation of custodial effects of confinement and an impairment of resocializing efforts.² Rule infractions in juvenile correction pertain to "order", named first and foremost in § 91.2 Jugendgerichtsgesetz (Juvenile Court Law) as one of the principles on which education is to be based. Sanctions for rule breaking act restrictive upon the principles named subsequently, these being "work", "schooling", "physical education", and "sensible leisure time occupation". These principles are supposed to further if not guarantee postrelease legal behavior. In other words, the need to sanction unwelcome behavior clashes with the intent of educational meas-

¹ This is especially the case with juvenile detention, where, as compared to adult correction, more rule infractions are reported and, accordingly, more sanctions imposed, see Dünkel 1985, pp. 114-116 and Table p.245.

² One particular effect of sanctioning can be that, instead of changing his conduct, the inmate affected circumvents the situation resulting in punishment. Regarding the problems of sanctioning in juvenile correction, see Claßen 1984.

ures, viz., to achieve resocialization. The primary purpose of institutional sanctioning in juvenile correction is to achieve special prevention, this aim being based on the primacy of education.³ Sanctions of special prevention can aim at avoiding further involvement in deviant activities both during detention (concept of order!) and, in consideration of the postrelease situation, also after release, the implication of the latter being a more comprehensive "improvement" (concept of resocialization!).

Whether a sanction is functional depends, on the one hand, on these mandatory objectives, and, on the other hand, on the question whether the factors causing deviant inmate behavior can be influenced at all.

This and the above outlined risk of negative effects of confinement amassing on those inmates involved repeatedly in institutional rule breaking (this involvement possibly signaling a need for education) underline the necessity of examining the causes of deviant behavior more intensely.

2. Theoretical implications

Traditionally, models of prisonization processes constitute the theoretical frame for the study of deviant inmate behavior. Deviant behavior, like oppositional attitudes toward the institutional organization and the valuation of refusals to cooperate with the prison staff, is also considered an indicator of **prisonization processes**.⁴ The degree of prisonization refers to the inmate's level of adjustment to the normative system and the values of the inmate subculture, both of which are suspected of running contrary to the norms and values of the institution as a resocializing organization.⁵

Basically, three models are to be named in this context: the **deprivation model**, the **importation model**, and a **model integrating these two contrary points of view**. The deprivation model emphasizes different sources of deprivation such as loss of freedom, withdrawal of material and immaterial assets, loss of heterosexual relationships, restrictions on the inmate's self-determination and lack of protection against criminal fellow-inmates, all of which result both in frustrations owing to an inadequate satisfaction of needs and in an injury of the inmate's self-

3 See the report by Grosch in this volume.

4 Ortmann 1985, p.342, Ortmann 1987.

5 See Thomas and Foster 1972, p.232 et seq.; Thomas, Peterson and Zingraff 1978, p.387; Zingraff 1980, p.277.

esteem.⁶ Prisonization refers to the inmate's integration into the inmate subculture, which is supposed to lessen these effects of deprivation.⁷ As a consequence of this integration, deviant values and norms of the subculture are adopted, impeding successful resocialization. Irwin and Cressey (importation model) regard preinstitutional socialization as the key factor of prisonization. Confinement does not elicit new behavior patterns, rather, preinstitutional behavioral structures are "imported".⁸ Lately, the fact that **combing both models** has a higher explanative power than any one of the two taken separately has been recognized.⁹

Recent studies, dealing only with one aspect of the prisonization process, namely, **deviant behavior**, focus mainly on **preinstitutional** and **detention-related criteria** in the analysis. The findings obtained by these studies are very differential for some variables.

The two variables age and time served concur. Age (at commitment or at the time of the infraction) and deviant inmate behavior correlate inversely, i.e., the older the inmate, the lower the frequency of deviant institutional behavior.¹⁰ Length of time imprisoned and time-adjusted report rate also correlate inversely. This finding implicates that short-term inmates are involved in a higher number of disciplinary infractions than those serving long sentences.¹¹

To the extent that the correlation between socio- and legalbiographical variables and deviant institutional behavior has been studied, highly differential findings have been obtained. No and thus no positive correlations were found between deviant institutional behavior and the frequency of contacts with formal social control agencies, the number of offenses committed during adolescence, the number of prior sentences and rule breaking during prior periods of confinement.¹² Correlations established between deviant inmate behavior and marital status, educational achievement, vocational development before commitment, and both drug and alcohol abuse are controversial to a similar degree.¹³

A quasi-experimental study examining the effect the elimination of good-time credit (the reduction of sentence-length) has on inmate behavior is also worth mentioning. Inmates who were no more able to be given this credit committed more rule

6 See Sykes 1958; Sykes and Messinger 1960.

7 See Sykes and Messinger 1960, p.17.

8 See Irwin and Cressey 1962, regarding a differentiated typification, oriented on the criminal and social background (square-John, right-guy, con-politician and trouble-maker); Schrag 1961, pp.346-356.

9 See Zingraff 1980.

10 See Myers and Levy 1978; Flanagan 1980, 1983a; Petersilia and Honig 1980; Goetting and Howsen 1986.

11 See Flanagan 1980, p.361.

12 See Goetting and Howsen 1986, p. 54.

13 For a summarizing description, see Goetting and Howsen 1986, p.53.

infractions and participated to a higher proportion in a prison riot which took place during the survey period.¹⁴

Regarded on the whole, those studies intended to explain deviant inmate behavior neglect prisonization variables which assess the degree of assimilation into the inmate subculture. The choice of variables is focused on the sociobiography and the preinstitutional criminal career. Correlations within the plurality of observations made could mainly only be established between the two variables **age** and **time served**. The question arises whether the impact of these variables, possibly indicating processes of learning and adjustment, can be replicated for juvenile correction,¹⁵ as the maximum age difference here is smaller and the average period of detention shorter.

Moreover, the impact of **sociobiographical criteria** on the inmates' report rates will be determined. In this context, those incidents rendered by the sociobiographies will be considered essential which could possibly be fundamental for specific behavior patterns, e.g., experiences with institutions noted for stringent directives of conduct. Furthermore, the number of prior convictions will be taken into account as a possible factor for determining the willingness to behave in a deviant manner.

Following an integrative model, we will assume that behavioral concepts which are imported into correction are subsequently acceded by certain **prison-specific incidents** and **aspects**, both, moreover, influencing institutional behavior. One aspect being the current offence, namely, the nature of the felony which resulted in confinement. Furthermore, we will examine both the impact exerted by social contacts: relationships to persons both within and outside of the facilities and the acceptance of correctional measures. Also, we will analyze whether the probability of being detected and, as a consequence, sanctioned contributes to inmate behavior. The multivariate analysis is preceded by a description of deviant inmate behavior and sanctioning.

3. Sources of data and research methods

This study is based on data from a research project on processes of juvenile correction conducted in 1981 in both the juvenile correctional institutions in the federal state of Baden-Württemberg,¹⁶ namely, in Adelsheim and Schwäbisch-Hall.¹⁷

¹⁴ See Emshoff and Davidson 1987.

¹⁵ The above-mentioned studies were conducted mainly in adult correctional facilities.

¹⁶ A State (Bundesland) within the Federal Republic of Germany.

¹⁷ Regarding the description of the studie, see Grosch in this volume.

As to the sociobiographical and official data of correction, these were taken from a record analysis of the inmates' personal files. Interviews (open and standardized) conducted with these inmates constitute the basis of data dealing with the remaining variables. Three interviews were conducted at certain intervals (panel-design); for the purpose of this study, we have chosen the second interview, as some of the questions had not yet been included in the first interview, and, had the third interview been selected, the random sample would have been heavily reduced.

The record analysis was conducted on 227 inmate files. Respondents which had been transferred to an adult prison¹⁸ or to juvenile correctional facilities of another federal state were not included. The sample consists of a total of 196 respondents.

4. Description of deviant inmate behavior and sanctioning

4.1 Report rate

Infractions of institutional norms are common among inmates. Only 30 (15%) of the respondents exhibited conformable behavior throughout the entire period of confinement, i.e., there were no reports of deviant behavior for this subgroup. The group affected highly (5 reports or more) comprises 54 inmates (27.6%), the group affected moderately (2 to 4 reports) including 66 inmates (33.7%), the group affected little (reported only once) comprising 46 respondents (23.5%). Disregard of orders constitutes the most common type of rule-breaking behavior, refusals to work ranking second. The highest number of reports received equalled 13 (1 respondent). A total of 11 respondents had been reported 6 times or more.

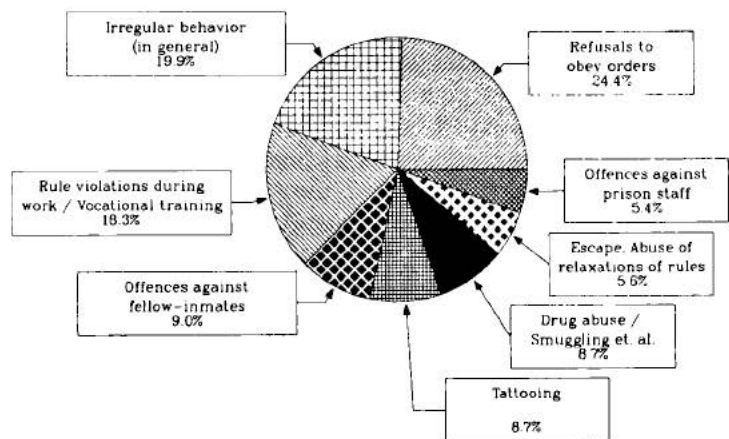
Upon categorizing rule-breaking behavior, we obtained the following figure:¹⁹

¹⁸ According to § 92.2 Jugendgerichtsgesetz (Juvenile Court Law), those having completed their 18th year do not have to serve their sentence in a juvenile correctional institution, if not appropriate for this facility, whereas those having completed their 24th year must serve their juvenile sentence according to the regulations of adult correction.

¹⁹ For a detailed description of each individual category, see Lambropoulou 1987, p. 195.

Diagram 1

Nature of reports



4.2 Assessment of severity of reports

The reaction following a duty infraction is a criterion in the assessment of its seriousness.²⁰ Infractions which are rather severe entail either one or more disciplinary measures (nos. 86.2 and .3 in conjunction with no. 87 VVJug ("Federal Uniform Administrative Regulations for Juvenile Correction")), violations of a less severe nature being punished by an imposition according to no. 86.1 VVJug. 408 (close to 60%) out of 696 reports entailed an imposition of disciplinary measures.

²⁰ Concerning the severity of duty infractions as perceived by the prison staff, see Ritz 1984.

Table 1: Assessment of severity of reports

	Total group n=196	Group 1 n=97	Group 2 n=99
Total number of reports =	695	106	589
Disciplinary measures	408 (58.7)	70 (66.0)	338 (57.4)
No disciplinary measures	287 (41.3)	36 (34.0)	251 (42.6)

The percentages refer to the total number of reports per group

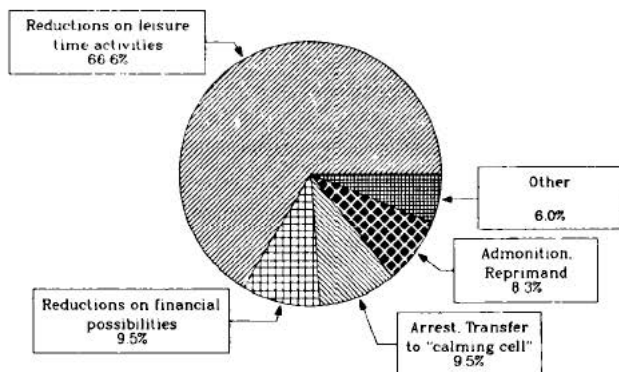
Upon dividing the total number of reports at the median standardized report rate (2.8), we note that the unaffected group is affected by disciplinary measures more frequently, this, however, being of minor importance compared to the total number of reports (106).

4.3 Sanction profile

Most sanctions affect the inmates' leisure time. Bans on leisure time and other measures reducing leisure time activities already account for two thirds (463) of the total number of sanctions imposed. Arrest and transfer to a calming cell, in addition to restrictions on financial possibilities (e.g., ban on prison-allowance) rank second with close to 10% each (66) within the order of sanctions, measures such as admonition, reprimand and being summoned to the director's office (58) ranking third. There had been no withdrawals of work and occupation (no. 87.1.6 VVJug). Merely 6 transfers to another place of occupation have been registered. Other types of sanctions such as transfer to another ward, filing a complaint at the public prosecutor's office, letter censoring and other controls (36) are imposed quite rarely, amounting to a mere 5%.

Diagram 2

Nature of sanctions



4.4 Summary

The description of rule-breaking behavior shows that only a small portion of inmates gets over detention without being sanctioned for rule infractions. As mentioned above, these findings agree with our expectations, as a high degree of regimentation and a high probability of deviant behavior being detected are characteristics of institutional correction. Sanctions mainly affect the inmates' leisure time activities and, as a consequence, their possibilities of contacting and communicating with fellow-inmates. The occupational and training sector is hardly touched directly, the assumption that resocializing efforts are impeded by sanctions has therefore not been given support.

5. Correlates of deviant inmate behavior

In an attempt to explain deviant inmate behavior, we will employ an integrative model, taking into consideration both pre- and intrainstitutional factors.

5.1 Choice and description of variables

Deviant inmate behavior, the dependent variable, is operationalized as report rate. This variable takes into account all of the rule infractions detected by the prison staff which were considered deviant and in need of being both reported and sanctioned.

A standardized report rate (SRR) is computed for the evaluation:

$$\text{SRR} = (\text{number of reports/Days served}) \cdot 365$$

The independent variables can be appointed to the following sectors: **sociobiographical development** up to commitment (preinstitutional aspects), **detention-related factors**, and **prison-specific data**.

Social- and sociobiographical data:

Elements of the individual history which possibly influence institutional conduct:

- educational achievement (completion of schooling yes/no),
- number of experiences with institutions known to exert stringent controls (time spent in homes, prior periods of confinement),
- and criminal career (number of prior convictions).

The status of age as an indirect variable is one of exception, indirectly implying that age is possibly an indicator of other factors such as the individual history of both learning and experiences, and the degree of maturity. These factors hiding behind the term "age" were not explored. Yet age can be an indicator of such elements.

Detention-related criteria:

Two criteria related to correction are current offence and time served. The current offenses were put into three categories, as follows:

- violent offences
- property offenses and offenses causing financial damage (e.g. fraud, breach of fiduciary duty)
- drug abuse, traffic offences and others

Two groups, one short-term and one long-term, were formed by dichotomizing the sample at the median time served (= 302.5 days).

Prison-specific variables:

The following aspects of institutional life were chosen as variables:

- Contact with fellow-inmates:
operationalized as frequency of joint activities.
- Interaction with persons outside:
operationalized as (standardized) frequency of visits.
- Acceptance of institutional measures:
operationalized as acceptance of educational and vocational training, work.
- Probability of deviant behavior being detected and sanctioned:
operationalized as perceived probability of deviant behavior being detected.

5.2 Methodology and findings

In order to examine the impact of the independent variables on the relative report rate, a stepwise regression analysis was selected as statistical procedure.²¹ The dependent variable is scaled metrically. To the extent that this was necessary, the independent variables were transformed into binary variables.²² First, the entire report rate was entered into the regression analysis as dependent variable. Following this, the reports were differentiated on the basis of degree of severity, i.e., whether they resulted in sanctioning. Since the variations of findings obtained by this differentiation were unimportant, the following shall only report on the first step of the evaluation.

²¹ We would like to express our gratitude to Michael Würger for his advice and support for the statistical analyses.

²² See Backhaus et al. 1987, p.3.

Table 2: Findings of the regression analysis

Variable	beta	Mult. R	P.e.v.
Age	-.301283***		
Acceptance of detentional measures	-.184197*		
Prior prison experience	.180291*		
Time served	-.178686*	.42206	.17814

Significance: * $p < .05$; ** $p < .01$; *** $p < .001$

P.v.a.: Proportion of explained variance

The variables "number of offences prior to commitment", "type of current offence", "contact with persons within and outside of the facilities", and "probability of detection and sanctioning" were not entered into the regression equation.

5.3 Interpretation of findings

The variable **age** is the best predictor of deviant institutional behavior ($R^2 = .06235$). The older the respondents, the lower the number of institutional rule violations. This linkage is also confirmed by studies on adult correction.²³

Although the maximum age difference is smaller in juvenile correction, the development rate during adolescence is higher, a fact which is also illustrated by development processes of criminal careers. These processes can result in a wider range of possible reactions, or else the inmates learn to circumvent situations which are apt to be reported the more prison experience they gather.

The fact that respondents with **prior prison experience** - the third variable entered into the regression equation ($R^2 = .03542$) - are more prone to rule breaking than respondents without prior commitments argues against this interpretation. If age is the correlate of maturation and of the ability to settle conflicts in a manner conformable to institutional norms, then deviant behavior is also caused by a lack of maturity, a factor which can, as it seems, hardly be influenced by sanctions. So much the more so, as these inmates, were they not imprisoned, would probably exhibit a similar kind of deviant and rule-breaking behavior within their respective context (school, place of work, leisure time). Owing to a lower density of supervision here, this deviant behavior, however, would not be noted to the same extent.

The second variable within the order of variables entered into the regression is **acceptance of institutional measures**. As expected, a higher degree of accep-

²³ See Note 10.

tance results in a lower infraction rate ($R^2 = .04964$). A favorable attitude towards institutional offers is generalized and extended to the institutional order on the whole. Inmates who are more attached to their respective occupation possibly fear sanctions which might reduce or put a ban on the latter.

However, the findings of this study indicate that the probability of deviant behavior being detected and, as a consequence, sanctioned does not contribute to explaining this behavior. Sanctions for rule breaking reduce freedom or hold back privileges which might have been granted otherwise. Since the range of action is heavily reduced anyhow, an increase in the number of sanctions will hardly have a deterrent effect.

The fourth variable entered into the regression equation is **time served** (short-term/long-term, $R^2 = .03073$). Adjustment to prison structures or learning processes might constitute the reasons that the time-adjusted report rates of long-term inmates are lower. Moreover, the prison staff is possibly highly interested in accomplishing particularly long-term sentences smoothly, this perhaps resulting in a reserved report policy.

On the whole, one finding frequently established by research projects on adult correction is also supported by the regression analysis on juvenile correction reported here: the inverse relationship between age and the number of involvements in deviant activities. Simultaneously, the higher potentiality of conflicts in juvenile correction can be partly explained, measured by both the number of sanctions imposed and the report rate. Furthermore, the inverse relationship between length of time imprisoned and report rate has also been confirmed for juvenile correction.

The dimension represented directly by the two variables age and time served (time) cannot be influenced by sanctions at all, the factors represented indirectly by these variables (processes of adjustment and learning) being able to be influenced only with difficulty. Hence, the effectiveness of institutional sanctioning is to be regarded critically. The possibility of determining the impact of both correctional and sociobiographical factors on inmate behavior is beyond the scope of these findings.

6. Inmate conduct and recidivism

An examination of recidivism might render further indications regarding the causes of deviant inmate behavior. If respondents with contrary report rates exhibit similar kinds of legal behavior, this would favor the hypothesis that rule breaking roots within correction itself. If we find that recidivism rates differ, this would indicate that behavior patterns and concepts are ex- and imported into and out of the correctional setting.

Both hypotheses are based on the premise that other causes of recidivism occurring in the postrelease situation are spread on the respondents at random, i.e., both groups do not differ in this respect.

Those studies of recidivism entering deviant institutional behavior into the analysis as a variable which influences legal behavior hardly base this proceeding on facts of theoretical deduction. Höfer starts from the fact that the number of institutional punishments is a consequence of correctional determinants, stating, however, that the higher the frequency of punishments, the higher the probability that this increase not only reflects factors inherent in correction itself. He has posited a slightly positive relation between the number of institutional punishments and postrelease recidivism.²⁴

A study of recidivism by Liebe and Meyer revealed findings contrary to the above-mentioned. Here, each postrelease felony entered into the criminal records is considered a relapse. The group punished repeatedly for institutional rule breaking did better by 1% (82.3%) than the group without any reports.²⁵

A study conducted by Dolde and Grübl, also dealing with recidivism subsequent to release from juvenile correctional facilities, reveals that the recidivism rate of respondents sanctioned at least once amounted to 60%, the rate of those unaffected by sanctions equalling 48%. This study, however, is based on a different definition of "recidivism". It refers to those who returned to correctional facilities, namely, those who had to serve a new (possibly juvenile) sentence.²⁶

The intent of the following is to illustrate the recidivism of those interviewed on the whole and for each individual group separately. Group 1 consists of the respondents with a low, Group 2 including those with a high (standardized) report rate. Moreover, we will examine whether both groups differ with regard to request approval and release on parole, both of which might also influence recidivism.

6.1 Sources of data

We indented on the "**Bundeszentralregister**" (Federal register for judicial records) for **extracts**. All offences which were detected and brought to trial are registered here. The dark figure is therefore not included. Furthermore, we have not been able to examine social behavior, i.e. the respondents' degree of social integration and adjustment.

²⁴ See Höfer 1977, p.84; the proportion of unsanctioned inmates relapsing heavily (= reconvicted within 44 months after release, having been awarded an adult or juvenile sentence of 3-29 months) equalled 24.5%, the percentage of inmates sanctioned once or more amounting to 42.4% (n=104).

²⁵ Liebe and Meyer 1981, pp.41 and 109.

²⁶ Dolde and Grübl 1988, p.31.

A span of 4 years is the shortest period of legal behavior entered into the survey reported here, defined as the space of time between the release date of the respondent released last and the date of our inquiry into the extracts. In order to avoid distortions caused by different periods of legal behavior, we included only reconvictions which had been registered within 4 years after release.²⁷

The classification of the respondents as "low rate" (Group 1) and "high rate" (Group 2) was retained. In order to demonstrate the course taken by legal behavior within the respective space of time, we will illustrate recidivism stepwise: for each of the first four postrelease years separately (only for Rdef1).

The first step of the evaluation takes into account all reconvictions within the respective period of legal behavior (=rdef1). The second step, as it includes all offences committed by the respondents during the respective period for which they were sentenced to a (juvenile) prison term and not placed on probation, takes into account the seriousness of recidivism (=rdef2). Moreover, we will illustrate the space of time between release and the first relapse into crime.

6.2 Description of recidivism

Counting each postrelease reconviction (see Table A of the Appendix), we find that close to 50% of the respondents relapse within one year after release, the proportion of those having relapsed within two years amounting to about 70%, increasing further by 3% between the 3rd and 4th postrelease year (from 74% to 77%).

Within Group 1 (less than 2.8 reports), the proportion of respondents having relapsed within each individual year was about 20% lower than for Group 2 (more than 2.8 reports).

Focusing on the severity of recidivism (rdef2) we find that this difference remains constant, though to a slightly stronger degree. Within Groups 1 and 2, the percentages of respondents not having relapsed heavily into crime amounted to about 60% and 40%, respectively (see Table B of the Appendix).

²⁷ Numerous studies of recidivism are based on a maximum period of legal behavior, a proceeding which causes distortions, as the different release dates are hence not taken into consideration.

Diagram 3

Recidivism (Rdef 1)

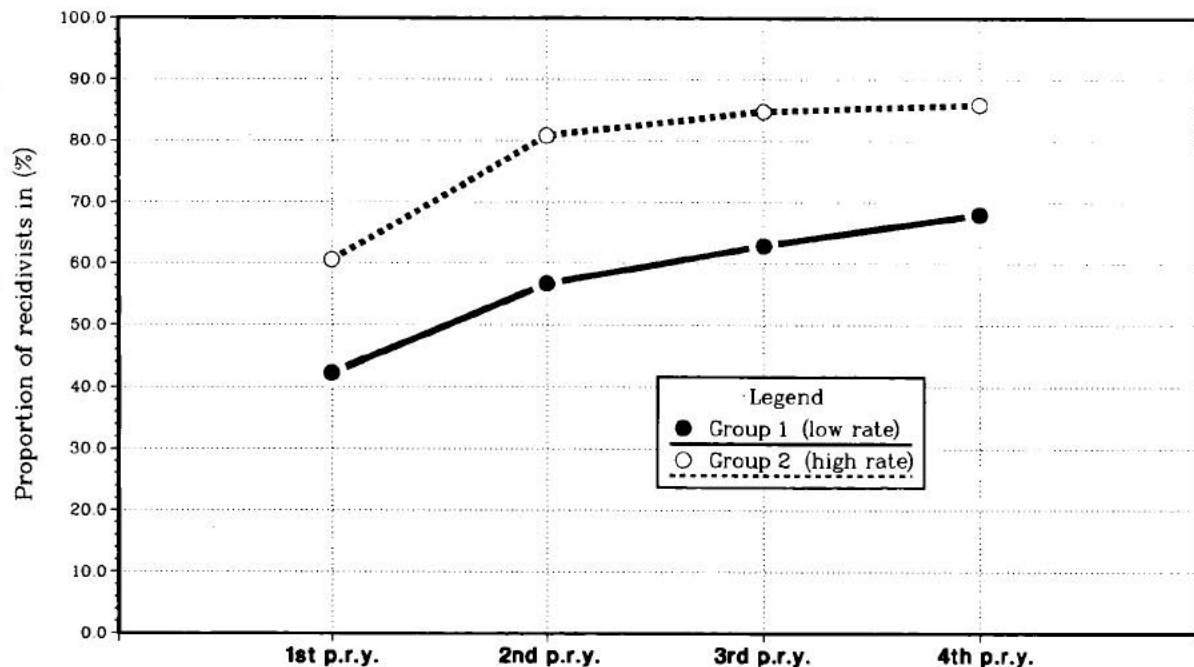
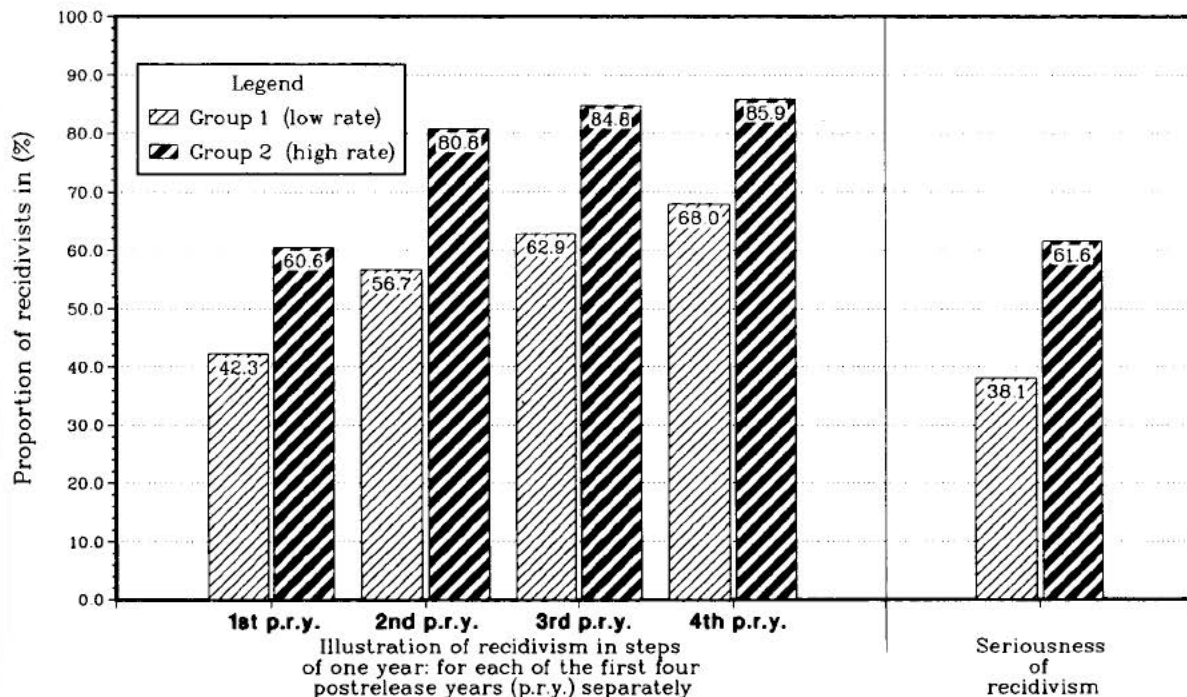


Illustration of recidivism in steps of one year: for each of the first four postrelease years (p.r.y.) separately = cumulated recidivism

Diagram 4

Recidivism:
Rdef 1 (in steps of one year)
Rdef 2



We conducted a Chi-Square-Test and computed the contingency coefficient for both rdef1 and rdef2. In order to obtain an adequate degree of cell occupancy, we grouped the respondents into three categories according to their standardized report rates and coded the recidivism rates ("yes" = one or more reconviCTION ; "no" = no reconviCTIONS).

Employing the Chi-Square-Test, we were able to determine a **significant linkage** between report rate and recidivism. The following contingency coefficients were obtained:

- rdef1: 0.207
- rdef2: 0.179

Moreover, both groups differ with regard to length of the first relapse interval. Within one month after release, 11 respondents (Group 1: 2; Group 2: 9) have already committed a new felony. Regarded on the whole, the average interval between release and the first postrelease offence is shorter for Group 2, as compared to Group 1. In sum, high report rate inmates relapse more quickly into crime after release.

Table 3: Period of recidivism

Space of time between release and first offence	Total group n=146	Group 1 n=64	Group 2 n=82
2 days - 6 months	51 (34.9)	20 (31.3)	31 (37.8)
6 months - 1 year	43 (29.5)	17 (26.6)	26 (31.7)
1 year - 2 years	36 (24.7)	12 (18.8)	20 (24.4)
more than 2 years	16 (11.0)	11 (17.2)	5 (6.1)
Mean	464.3	471.0	459.4
Median	388.0	398.0	386.5

6.3 Attempt at interpretation of findings

The recidivism quota of our sample is comparable to the quota of other studies.²⁸ Taking into account each reconviCTION, we find that 77% of the respondents have relapsed. Counting only those relapses defined as "serious" (rdef2), the total

²⁸ See Klapdor 1967, p.78; Liebe and Meyer 1981, p.51; Dolde and Grübl 1988.

group is split into halves - one half having relapsed, the other half not having relapsed into crime.

Groups 1 and 2 differ with regard to recidivism. High report rate respondents relapse more frequently, more heavily and sooner. This finding gives rise to the interpretation that the causes of deviant institutional behavior outlive time of imprisonment. Therefore, one should rather focus on preinstitutional events than on prison-specific influences. As a consequence of this interpretation, those sanctions would be legitimized which are not only intended to avoid further deviant inmate behavior, but also focus on "bettering" the inmate on the whole.

The following, however, should be taken into consideration:

According to the findings of the first part of this study, **age** is an important factor of deviant inmate behavior. Age also plays an important role in the development of criminal careers.²⁹ Younger inmates are involved in more rule breaking and are therefore overrepresented by Group 2 (= high report rate). As age is a variable exerting influence on recidivism, the recidivism quota is, as expected, higher for Group 2.

Sanctioning and deviant inmate behavior constitute a unit. Each report entered into the analysis entailed a sanction. Dividing the group according to its report rate also means dividing it according to its sanction rate. As a consequence, Group 2, being involved in more rule and duty infractions, is also sanctioned more frequently. Hence, we are not able to discern whether those causes partially responsible for deviant inmate behavior also influence recidivism, or whether the degree of sanctioning is responsible for poor legal behavior. An examination of undetected and therefore unsanctioned deviant inmate behavior, i.e., the dark figure, might answer these questions. The survey reported here, however, did not render possible such an examination. Moreover, to our knowledge, no such studies have been conducted.

Furthermore, our hypothesis that inmates involved more frequently in institutional norm infractions are granted fewer **privileges** has been verified with regard to granting of applications (in general) and release on parole.

²⁹ See Kaiser 1980, p.158; moreover, the statistical returns on recidivism based on data furnished by the "Bundeszentralregister" (Federal register for judicial records) ; Uhlig 1987, p.300.

Table 4: Granting of applications, release on parole

	Group 1 n=97	Group 2 n=99
Total number of applications filed	1,756	1,537
Applications declined	171 (10.8%)	290 (18.8%)
Proportion of respondents released on parole	71 (73.2%)*	50 (50.5%)*

* The percentages refer to the number of respondents within each group.

Focusing on both granting of applications in general and release on parole we find that the group affected little by reports obtained better results.³⁰ Both variables are linked with recidivism.³¹

To deduce from the higher recidivism rate exhibited by Group 2 an overall lower level of norm acceptance would hence be premature. Either the causes of deviant inmate behavior outlive the period of confinement or deviant inmate behavior creates conditions which effect a higher rate of recidivism.

6.4 Summary and conclusions

The study reported here is an attempt to explain **deviant inmate behavior in juvenile correction**.

At first we described deviant inmate behavior and its sanctioning. Rule-breaking behavior in prison is common. Only about 15% of the respondents had not been reported for rule infractions. Disregard of orders ranks first within the order of rule infractions, followed by refusals to work. Offenses against the prison staff or against fellow-inmates play a rather minor role. Leisure time is heavily affected by sanctions. Sanctions withdrawing "freedom" such as arrest and transfer to a calming cell rank second within the hierarchy of sanctions.

In an attempt to explain deviant inmate behavior, four variables out of the total number of sanctions describing social, sociobiographical and prison-specific criteria and events were entered into the regression equation:

³⁰ These applications concern mainly purchase and personal supplies, communication and contacts with the outside world. Applications for relaxations of rules or furlough could not be taken into account.

³¹ See Berckhauer and Hasenpusch 1980, p.302. We are, however, not able to discern clearly whether release on probation is a cause of successful legal behavior, or whether successful legal behavior merely confirms this prospective decision, see Klotz 1980, p.80.

- age,
- time served,
- acceptance of correctional measures and
- prior periods of confinement.

Younger respondents are involved in more rule infractions than older respondents, long-term inmates less than those serving a shorter sentence (standardized report rate!), and returnees more than inmates without prior prison experiences. Inmates with a positive attitude toward their respective occupation behave in a more conformable manner than inmates with a negative attitude. Sociobiographical criteria such as educational achievement, number of institutionalizations (homes) and number of prior convictions are not linked with the report rates. This also applies to current offence, frequency of contacts with fellow-inmates, number of visits and the perceived probability that rule-breaking behavior will be detected and sanctioned.

The findings of the regression analysis indicate that an **integrative model**, taking into consideration both **preinstitutional** and **prison-specific criteria**, is more adequate for explaining inmate behavior. Yet we were able to account for only a relatively small proportion of variance.

In order to determine the degree of importance of both aspects, we examined the respondents' **recidivism**: the two groups (high and low report rate) differ significantly. Inmates with a more deviant type of conduct relapse sooner, more frequently and more seriously.

Basically, this would favor the hypothesis that the causes of deviant inmate behavior outlive confinement, i.e., they are determined less by detention-specific than by preinstitutional events. Low report rate respondents are, however, older and therefore less prone to recidivism. Moreover, we are at this point no longer able to determine whether the causes of deviant inmate behavior exert an influence on legal behavior.

Furthermore, inmate behavior seems to play an important role in **correctional decision making**. Applications submitted by highly affected inmates are approved less often, the number of those released on parole being also lower. These are factors which possibly **influence the postrelease situation** as well.

From the higher recidivism rates of those having been frequently involved in institutional rule breaking one should therefore not deduce that causes unrelated to imprisonment and missing norm acceptance are responsible for correctional deviances.

Inmates with a more adverse conduct during confinement are hence not necessarily in need of being "bettered" to an extent going beyond the avoidance of future rule breaking. Forms of sanctioning and of institutional decision-making which

interfere with resocializing efforts and which, in addition, take into consideration the inmate's degree of conformity might impede the actual goal of correction, namely, the inmate's legal behavior.

In the eyes of the institution sanctioning is indispensable, since otherwise an orderly correctional process could possibly be guaranteed no longer. One might hold against this argument the fact that, as the findings of the first part of this study show, the threat of institutional sanctioning hardly has a deterrent effect. However, it seems inappropriate to dispense with sanctions, since a lack of negative reactions to norm-breaking behavior might also have an intensifying effect on the latter.

One should therefore rather begin by reducing the possibilities of behaving in a deviant manner, i.e., by structuring day-to-day prison life more generously.

Appendix

Table 1 : Cumulated recidivism rate (rdef1)

Number of reconviictions	Total group n=196	Group 1 n=97	Group 2 n=99
1st p.r. year			
0	95 (48.5)	56 (57.7)	39 (39.4)
1	59 (30.1)	26 (26.8)	33 (33.3)
2	31 (15.8)	10 (10.3)	21 (21.2)
3	10 (5.1)	5 (5.2)	5 (5.1)
4	1 (0.5)	-	1 (1.0)
2nd p.r. year			
0	61 (31.1)	42 (43.3)	19 (19.2)
1	60 (30.6)	26 (26.3)	34 (34.3)
2	45 (23.0)	15 (15.5)	30 (30.3)
3	20 (10.2)	8 (8.2)	12 (12.1)
4	10 (5.1)	6 (6.2)	4 (4.0)
3rd p.r. year			
0	51 (26.0)	36 (37.1)	15 (15.2)
1	44 (22.4)	22 (22.7)	22 (22.2)
2	47 (24.0)	19 (19.6)	28 (28.3)
3	28 (14.3)	7 (7.2)	21 (21.2)
4	19 (9.7)	10 (10.3)	9 (9.1)
5	5 (2.6)	3 (3.1)	2 (2.0)
6	1 (0.5)	-	1 (1.0)
7	1 (0.5)	-	1 (1.0)
4th p.r. year			
0	45 (23.0)	31 (32.0)	14 (14.1)
1	36 (18.4)	23 (23.7)	13 (13.1)
2	44 (22.4)	20 (20.6)	24 (24.2)
3	30 (15.3)	6 (6.2)	24 (24.2)
4	23 (11.7)	11 (11.3)	12 (12.1)
5	12 (6.1)	5 (5.2)	7 (7.1)
6	2 (1.0)	-	2 (2.0)
7	2 (1.0)	1 (1.0)	1 (1.0)
8	2 (1.0)	-	2 (2.0)

The total group was divided at the median of the standardized report rate:

Group 1 = low report rate; **Group 2** = high report rate

Number in brackets = percentages; **100%**=n of the respective group; **p.r.** = postrelease

Table 2: Recidivism rate (rdef2)

Number of reconvictions resulting in a (juvenile) prison sentence*	Total group n=196	Group 1 n=97	Group 2 n=99
0	98 (50.0)	60 (61.9)	38 (38.4)
1	49 (25.0)	22 (22.7)	27 (27.3)
2	33 (16.8)	10 (10.3)	23 (23.2)
3	13 (6.6)	4 (4.1)	9 (9.1)
4	-	-	-
5	1 (0.5)	-	1 (1.0)
6	2 (1.0)	1 (1.0)	1 (1.0)

* Each reconviction resulting in imprisonment, not probation.
 Number in brackets = percentages 100% = n of the respective group

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Disciplinary Measures in Juvenile Prisons

Inmates' Perception of Severity

Olaf Grosch

Like adult prisons, juvenile correctional institutions are "total institutions",¹ norms, infractions of which are defined as "deviant behavior", governing within as in the whole society. This applies to the inmates as well as to the prison staff. The following is intended to deal solely with reactions of prison managements and prison staff, who react to deviant inmate behavior in a more or less predetermined manner. These reactions can be informal, but can also take on a formal character, the latter having to recur both to statutory rules of conduct for inmates and to measures provided for particular forms of misconduct. The law of the Federal Republic of Germany includes a number of directives of conduct for inmates, to some extent formulated rather vaguely. In addition, various types of formal reactions, not undisputed as to their legal and actual significance, are placed at the disposal of the prison staff.² Custodially oriented detention can offer primarily only measures which reduce freedom - already reduced by imprisonment - even further. Since a number of relaxations of rules and privileges have been introduced to the program in recent years, restrictions on both can also be used as sanctions to punish abuses. Thus the number of disciplinary measures available both legally and factually has increased. The following shall closely examine the severity of sanctions as perceived by those affected - the inmates - taking into consideration both the formal possibilities available and the aims of these sanctions.

1 The term "total institution" originates from Goffman, see e.g., Goffman 1973, p.17 et seq.

2 See Brühl, in: AK StVollzG § 103, no. 2 et seq. In particular, there are doubts regarding the constitutionality of certain sanctions, see e.g., *ibid.*, no. 3a. For concepts concerning the reform of disciplinary measures, see Lambropoulou 1987, p.24 et seq.

1. Formal measures for institutional rule breaking

1.1 Disciplinary measures

The "Federal Uniform Administrative Regulations for Juvenile Correction" (VVJug) are an indispensable supplement to the Juvenile Court Law (JGG), the latter containing only rudimentary regulations governing juvenile detention. They contain among other requirements a large number of duties, specified more or less detailed, which juvenile prisoners are required to perform during detention. For example the general clause: "The prisoner shall not upset the orderly social life within the institution by his conduct toward the personnel, toward his fellow-inmates or toward any other persons",³ or, furthermore, more specific requirements such as minding the agenda of the facility (working hours, leisure time, time of rest), complying with orders given by the prison staff, etc.⁴ The regulations provide possible means of reacting in the event duties aren't performed: "If a prisoner violates duties he is obliged to perform while detained, measures suited to make him realize his misconduct can be taken."⁵ Directives and obligations, e.g., to do or to refrain from doing certain things or limitations of leisure time activities up to one week can be imposed in case slight infringements occur. In the case of severe infractions, special disciplinary measures can be imposed by the director of the institution:⁶

1. reprimand,
2. restrictions or withdrawal of allowance and purchase in prison,
3. restrictions or withdrawal of reading material and of the radio and TV reception,
4. restrictions or withdrawal of objects needed for leisure time activities or for participation in joint arrangements,
5. separate accomodation during leisure time,
6. withdrawal of assigned work or occupation under stoppage of earnings, the latter being regulated by the German Penitentiary Law,
7. limiting contacts to the outside world to urgent cases,
8. arrest.

The institutional management has therefore a number of formal means of reacting at its disposal, this catalogue of disciplinary measures being conclusive.⁷ In addition, the duration of these measures has been limited to a maximum.

3 No. 73.1.2 VVJug.

4 No. 73.1.1.2 VVJug. For a detailed list of duties to be performed by inmates see, e.g., Lampropoulou 1987, p.20 et seq.

5 No. 86.1.1 VVJug.

6 No. 87.1 VVJug.

7 Brühl, in: AK StVollzG § 103, no. 4a.

1.2 Safety measures

Deviant behavior during detention can also entail other consequences. Special safety measures can be imposed if there is "an increased danger of escape or of violence against other persons or objects, or danger of suicide or of self-inflicted injuries",⁸ but also in case "there are no other means to maintain or restore order within the facilities".⁹ The measures available reduce whatever liberty and privacy is left to the inmate even further in order to avoid any danger to security and order within the institution or to the inmate himself. The primary objective of security measures is to prevent, as opposed to disciplinary measures which serve to repress. It is, for example, possible to withdraw objects from the inmate or to keep him under observation during the night. Furthermore, it is possible to isolate him from his fellow-inmates or to "place him in a special prison cell devoid of dangerous objects".¹⁰ The calming cell, called "bunker" by the inmates, differs from the separate cell in which disciplinary arrest is carried out in that it is secured even further. This cell is meant for prisoners in danger of committing suicide or of inflicting injuries upon themselves. All safety measures are not permitted to last longer than is necessary, and should only serve as emergency measures.¹¹

1.3 Restrictions on relaxations of rules

So-called relaxations of rules¹² are of special importance in the day-to-day life of a prisoner. There is, e.g., the possibility of leaving the facilities for hours or days unguarded (for example short prison leave, i.e., prison leave up to one day, and furlough). Measures - even for a limited time - obstructing prospects for the future or withdrawing existing relaxations are not provided by the law and would therefore be illegal.¹³ Nevertheless, measures of this kind can be factually induced by misconduct. The inmate's eligibility is to be assessed prior to granting a relaxation of rules. This includes taking into consideration "whether his conduct exhibits a willingness to cooperate in attaining the objective of education".¹⁴ Misconduct can

8 No. 79.1 VVJug.

9 The latter applying only to particular security measures, see no. 79.2 VVJug.

10 No. 79.2.5 VVJug.

11 Spittler, in: AK StVollzG § 88, no.3, in this context speaking of "methods of intervention which are at least suspect".

12 These relaxations of rules concern the conditions of confinement within the institution as well as the possibility of leaving the institution both guarded or unguarded such as short prison leave/furlough, work release and others.

13 Brühl, in: AK StVollzG § 103, No. 4a etc.

14 No. 6.10.2 VVJug.

therefore be of importance when it comes to granting relaxations or maintaining relaxations which have already been granted.

1.4 Aims of disciplinary measures

Sanctions imposed for institutional rule breaking are based on a bundle of intentions. These can be classified according to general theories of punishment as aims of retaliation, of general and of special prevention. Sanctions are supposed to effect prevention both within the microcosmos called "institution" and in future life "outside".¹⁵ They therefore include a short-term as well as a long-term aspect.

Sanctions, on the one hand, aim both at maintaining "law and order" within the institution¹⁶ and at upholding the authority of its personnel and management. On the other hand, there is the notion of "bettering" the inmate, viz., inducing him to change his conduct, his attitudes and his personality.¹⁷ Disciplinary measures are based on these goals, but further consequences of misconduct such as security measures or a (temporary) withdrawal of relaxations of rules are also imposed on these grounds. For although they serve to avoid any danger to the safety within the institution, to that of its inmates or of the general public (thus serving primarily as preventive measures), they may be characterized as sanctions to a certain extent. All measures described above primarily act in a repressive manner upon the inmate affected. In his opinion, harm has been inflicted upon him as a reaction to his (mis-)conduct, while, at the same time, those having imposed this harm generally hope to bring about an effect of special prevention: the inmate concerned shall not only repent, but is also meant to be warned and to be deterred from any further misconduct. Besides, there is an effect of general prevention: imposing a sanction on a prisoner has a deterrent effect on his fellow-inmates in that it demonstrates possible consequences of a particular kind of misconduct.

Juvenile detention, as opposed to adult correction which is programmatically based on these objectives to the full,¹⁸ is carried out on the primacy of "educating": as a result, special prevention has priority even in the event of institutional rule breaking. This priority, however, concerns only the considerations to be taken prior to imposing disciplinary measures. These have to be based both on pedagogical intentions and on aims of special prevention. Yet, the measure selected more or

¹⁵ For critiques in this context see Neuland 1988, p.271 et seq.; Böhm 1986, p.200 et seq.

¹⁶ According to Callies and Müller-Dietz 1986, 102.1, this means securing the "minimum prerequisites" which serve as a basis for successful correctional treatment.

¹⁷ Neuland 1988, p.271.

¹⁸ See Böhm, in: Schwind and Böhm 1983, § 102, no.1.

less entails those other effects which have also been depicted above. Disciplinary measures are therefore not only controversial on the whole but especially with respect to juvenile correction. The assessment of disciplinary measures is being restricted considerably by present-day reformatory drafts.¹⁹

Those intending to sanction or to avoid future misconduct base their reactions on the premise that those affected (and, in addition, other potential offenders) consider the sanctions imposed to be grave. If custodially oriented measures are set back in favor of measures of correctional treatment, this does not necessarily imply an increased liberality,²⁰ but can also imply that more effective methods of disciplining are thought to have been found.²¹ More effective in that they are supposed to touch a higher sensitivity of those affected.

1.5 Severity of measures

Literature on imprisonment generally refers to arrest as to the most grave kind of disciplinary measure possible.²² Regarding in the abstract those personal values touched by arrest such as freedom, the possibility of communicating, inter alia, this rating seems plausible, whereas measures such as withdrawal of prison allowance, restrictions on the possibility of purchase in prison and on leisure time activities or withdrawal of the opportunity to work gainfully seem to be less drastic. This point of view, however, is questionable and should therefore not be generalized. One should rather take into account the subjective perceptibility of those affected, the most important factor indicating the perceived severity of different types of sanctions. This approach is favored by the fact that sanctions are supposed to impose a more or less severe harm. Apart from the fact that retaliation is intended, this imposition of harm might be based on considerations of theories of learning. Negative stimuli are employed in order to avoid unwelcome behavior in the future.²³ A stimulus has to have an appropriate impact if it is to be effective within the meaning of theories of learning. Hence, misconduct should entail only measures, i.e., negative stimuli, the severity of which (influenced by their duration) matches the seriousness of the infraction in question. Thus, both the kind of sanction to be chosen and its anticipated severity are of paramount importance.

19 See Lambropoulou 1987, p.23 et seq.; Böhm 1978, p.94 et seq.; Dünkel and Meyer 1985, p.10. concerning reformatory efforts and criticisms of the existing regulations.

20 Neuland 1976, p.293, regards a decline of arrest under such conditions as "problematic".

21 Kneip and Schaffner 1985, p.54, reject the criticism that relaxations are simultaneously a tool for disciplining and manipulating.

22 E.g., Böhm 1986, p.200; Dünkel 1985, p.130.

23 See e.g., Breland 1975, p.75 et seq.; Claßen 1984, p.86 et seq.

2. The implementation of disciplinary measures

Studies made by Dünkel²⁴ show that juvenile correctional centers are more inclined to impose formal measures than adult prisons, arrest being particularly favored. In 1986, the number of disciplinary measures imposed nationwide in the Federal Republic of Germany amounted to 151.5 per 100 juvenile prisoners,²⁵ those imposed in adult prisons totaling 51.5 - one third. This possibly indicates that juveniles experience more conflicts than adults, but might also imply that these measures are regarded as "educational" measures.

As to the implementation of disciplinary measures, each of the West German Federal States reacts differently. As mentioned above, in 1986, the total number of disciplinary measures imposed nationwide amounted to 151.5 per 100 juvenile prisoners, the highest rate of 260 having been found in the state of Saarland, followed by Baden-Württemberg with 242.4, down to 52.4 in Niedersachsen. This demonstrates a wide range regarding the relative frequency of sanctioning. Individual types of sanctions vary accordingly. In 1986, the sum of arrests imposed nationwide amounted to 34.1 per 100 juvenile prisoners (1982: still 37.5), ranging from 71.5 in Schleswig-Holstein and 68.7 in Hamburg to 0 in Rheinland-Pfalz and Saarland. The frequency of arrests imposed has decreased slightly between 1982 and 1986 in all but two federal states, these being Hessen (1982:32.7; 1986:54.8) and Schleswig-Holstein (1982:60.3; 1986:71.5). In 1986, participation in joint arrangements was reduced or withdrawn 70.3 times per 100 juvenile prisoners, ranging from 10.7 in Hessen to 162.7 in Saarland, the over-all rate having increased between 1982 (58.9) and 1986. In 1986, the number of restrictions or withdrawals of prison allowance ranked at about the same level as the number of arrests imposed, this level being clearly lower than the frequency of other sanctions: 30.0 per 100 juvenile inmates nationwide, ranging from 87.3 in Saarland to 0.5 in Schleswig-Holstein. Nationwide, a decline in the number of impositions of restrictions on prison allowance of 10.5 has occurred between 1982 (40.5) and 1986.

In sum, we note that the frequency of sanctions imposed in the Federal Republic of Germany has increased slightly on the whole, the number of both arrests and restrictions on prison allowance having declined, the number of reductions on joint arrangements having increased. Each individual federal state, however, and, accordingly, each juvenile correctional facility²⁶ exhibits different manners of sanctioning.

24 Dünkel and Rosner 1982, p.188 et seq.; Dünkel 1985, p.114 et seq.; Dünkel 1988, Tab. 40.

25 For these values and those to follow in this passage see Dünkel 1988, Tab. 40. Here, the number of inmates referred to is defined as the average prison population of the year in question.

26 Both institutions examined here differ clearly regarding their habits of sanctioning, see Lambropoulou 1987, p.257 et seq.

3. Severity of consequences as perceived by inmates

The extent to which juvenile prisoners consider sanctions severe is, as made evident by the foregoing, of paramount importance. Lacking reliable information on this question, the following chapter is meant to assess the perceived subjective importance of each individual reactive measure. As a follow-up to this general assessment, we will attempt to determine some of the factors possibly exerting an influence on this evaluation due to pre-prison or detention-related experiences.²⁷

3.1 Sources of data

The following analyses are based on data collected in 1981 in the course of a research project on confinement processes, carried out in both the juvenile correctional institutions in Baden-Württemberg - Adelsheim and Schwäbisch-Hall. The data were collected from the case records of the inmates concerned (= data dealing with certain events during correction) as well as by interviews conducted with these inmates. The interviews, based on a panel-design, were conducted in three phases: at the outset, in the middle and near the completion of correction,²⁸ the first and second having been conducted at an interval of 126 days on the average, the second and third at an average interval of 132 days. The length of sentences served averaged 8% at the time of the first interview, 45% at the time of the second, and 67 % at the time of the third interview.²⁹ The sample consisted of 276 inmates who had all been committed to the central department of admissions of both institutions between March 10, 1981 and July 10, 1981, i.e., within a quarter of a year. This study is limited to those prisoners who have already been released, whose case files were able to provide data and who, at the same time, had participated in the interviews. As a result, the number of inmates questioned totaled 161 for the first, 149 for the second and 109 for the third interview.

Part of these standardized interviews were questions concerning the conformance and nonconformance of behavior such as "How much or how little do certain types of sanctions bother you?". The following "sanctions" were named: 1. restrictions on leisure time activities, 2. transfer to a closed ward, 3. transfer to an arrest cell, 4. transfer to a calming cell, 5. restrictions on visits, 6. restrictions on short prison leave, 7. restrictions on furlough, 8. withdrawal of prison allowance, 9. restrictions on purchase in prison, 10. work without pay, 11. withdrawal of work, 12.

27 Experiences possibly reported by acquaintances of inmates imprisoned for the first time could not be taken into account here.

28 Lamp 1984, p.287 et seq.

29 Lamp 1984, p.291.

reprimand, 13. complaint. The respondents were asked to give each sanction a value within a five-graded rating scale, signifying its subjective severity: 1: "it doesn't bother me at all", 2: "it bothers me little", 3: "it bothers me to some extent", 4: "it bothers me quite a lot", 5: "it bothers me a lot". These items were answered by almost all respondents, only a minimal number not having stated an opinion.

Not all of the above-mentioned sanctions are, as indicated in Chapter 1, disciplinary measures within the meaning of the law. Nevertheless, in the eyes of those affected they do acquire a sanctionary character, and are hence primarily perceived as sanctions. Whether certain measures are technically sanctions of a preventive nature is of little interest to the prisoner.

An examination of the perception of severity within two dimensions (cross-sectional and longitudinal) is rendered possible by the panel-design: the sanctions named above can for each interview be ranked on a scale according to the degree of severity they represent to the inmates. On the other hand, changes in the degree of importance attached to these sanctions which have possibly taken place during the process of correction can be established.

3.2 Degree of importance attached to particular types of measures

The following table illustrates, on the one hand, the rank ordering of certain types of measures within each phase, taking into account the highest value of the five-level scale "it bothers me a lot". On the other hand, the extent to which these orders vary from interview to interview (these variations being illustrated by Table 3 of the Appendix) is shown here.

Table 1: Percentages of respondents "bothered a lot**" by each sanction and the rank ordering of sanctions for the three interviews

1st interview (n=161)		2nd interview (n=149)		3rd interview (n=109)	
complaint	80%	complaint	78%	complaint	83%
restrictions on furlough	74%	restrictions on furlough	63%	restrictions on furlough	57%
ban on short prison leave	68%	withdrawal of prison allowance	59%	restrictions on visits	52%
restrictions on visits	63%	ban on short prison leave	59%	ban on short prison leave	50%
withdrawal of prison allowance	58%	restrictions on visits	58%	calming-cell	47%
calming-cell	54%	work without pay	55%	restrictions on purchase in prison	47%
work without pay	51%	calming-cell	54%	withdrawal of prison allowance	46%
arrest	48%	restrictions on purchase in prison	54%	work without pay	44%
restrictions on purchase in prison	48%	arrest	44%	arrest	40%
transfer back to closed ward	40%	transfer back to closed ward	32%	transfer back to closed ward	35%
ban on leisure time activities	28%	ban on leisure time activities	31%	ban on leisure time activities	22%
withdrawal of work	24%	withdrawal of work	25%	reprimand	19%
reprimand	18%	reprimand	18%	withdrawal of work	17%

* highest value within a five-graded rating scale

Filing a complaint due to a breach of discipline (Table 1) is, as can be noted, considered the most severe means of reacting throughout the entire period of correction. There is only little evidence of any dynamics over all three phases concerning the significance of this measure. A finding which hardly surprises, since additional criminal proceedings would bear the risk of either a prolongation of confinement or of a new sentence following conviction for a new felony. Restrictions on furlough, viz., the possibility of leaving the facilities for days unguarded, rank second in all three interviews, the proportion of inmates considering this measure to be very severe decreasing towards the completion of detention, i.e., the nearer the end of confinement, the lesser the relative significance of this sanction. A similar effect can be noted regarding those two measures dealing with contacts to the outside world - the withdrawal of short prison leave and restrictions on visits. Two

types of reactions dealing with material aspects of prison life are also quite significant: the withdrawal of prison allowance ranks both at the beginning and at the end of correction in the middle section, its significance increasing considerably towards the completion of detention. The degree of importance attached to restrictions on purchase in prison is subject to similar dynamics, whereas arrest, viz., the reduction of liberty during detention is of average significance within the rating-scale of sanctions. Less than half of those interviewed consider this sanction very severe over all three interviews, the proportion decreasing even further in the course of detention, qualified "arrest" (= calming cell), on the contrary, being dreaded increasingly. Other measures affecting freedom within the facilities such as restrictions on leisure time activities and transfer to a closed ward appear to be of rather minor importance. The reprimand, intended rather as a warning which doesn't effect direct consequences, ranks at the bottom of the scale. The reason little importance is also attached to the withdrawal of work in prison might be that the more comfortable aspect of this measure, i.e., being released from the compulsion to work, is considered to be more significant than the financial consequences, namely, the stoppage of earnings. Otherwise this finding would contrast sharply with the importance attached to the loss of prison allowance or with restrictions imposed on purchase in prison.

An analysis of those sanctions examined above proves that inmates most fear being awarded a prolongation of detention or a new sentence due to a filing of complaints. Measures resulting either in a loss of chances to leave the facilities for some time during correction or in a loss of contacts to the outside world range next. In addition, a high degree of importance is attached to material privileges such as being able to supply oneself with provisions, e.g., tobacco, coffee, and so forth. The perceived severity of arrest, the importance of which being stressed heavily by literature on juvenile correction, is rather low with regard to sanctions on the whole.

3.3 Perceived severity according to the number of sanctions awarded during the actual period of Correction

3.3.1 General sanction rate

As mentioned in 1.5, the degree of seriousness formal impositions represent is, according to theories of learning, essential for their effectiveness (the objective intended being prevention) in that these formal measures are supposed to have a deterrent effect evoked by the anticipation of an unpleasant reaction. Whether this deterrent effect already exists or is now evoked depends on the degree of discomfort the addressee attaches to the sanction anticipated. If this were the case, one

would expect that inmates who have been sanctioned repeatedly for deviant behavior consider these measures inadequate, i.e., too lenient. We might therefore assume that these inmates, in comparison with their fellow-inmates unaffected by sanctions, hadn't attached the same degree of importance from the outset, or that their assessment has "worn out" due to experiences with sanctions.

Since 82.6% of the inmates questioned were experiencing confinement for the first time, we have selected actual prison experiences as our starting point. According to Lambropoulou,³⁰ the greater part of those inmates sanctioned repeatedly had experienced their first sanction quite early. About half of them had been reported at least once for institutional rule breaking or a breach of discipline within 120 days. Hence, we can start out from the fact that at least 50% of those interviewed had been sanctioned at least once by the time the second interview was conducted. The inmates' perceptions were grouped according to the number of sanctions imposed,³¹ the first group consisting of respondents who had been affected by sanctions either little or not at all during the entire period of detention (0-1 sanction), the second group consisting of those considered to be affected moderately (2-5 sanctions), followed by the third group considered to be highly affected (6 sanctions or more).

Comparing all three phases, we note that none of the rating values varied to an extent which can be considered statistically significant. Several types of sanctions, however, display interesting trends. For example, Diagram 1, depicting restrictions on short prison leave, shows a high level of consistency for the group unaffected by sanctions. Within this group, the proportion of those stating to be "bothered a lot" by this sanction remains quite constant over all three phases, whereas, by way of comparison, a higher percentage of inmates within the second and third group considers this measure very severe only within the first phase (73% and 72%, respectively), this percentage, however, decreasing rapidly during the remaining phases (49% and 54%, respectively). Focusing on the withdrawal of prison allowance (Diagram 2), we note that the percentages of inmates within the first two groups considering this sanction to be especially severe (57% and 52%, respectively) increase slightly towards the second phase, declining again heavily towards the third phase (from 60% to 47% and from 59% to 38%, respectively). By way of comparison, the group affected highly initially includes a higher proportion of inmates considering this measure especially severe (69%), this percentage, however, decreasing towards the second phase, remaining quite stable thereafter

30 See Lambropoulou 1987, p.208, whose survey is based on the same data as this article.

31 This concerns mainly disciplinary measures within the meaning of the law, since those security measures and restrictions on relaxations of rules recorded in the case files cannot be clearly appointed as sanctions to particular kinds of misconduct.

Diagram 1: BAN ON SHORT PRISON LEAVE "bothers me a lot"

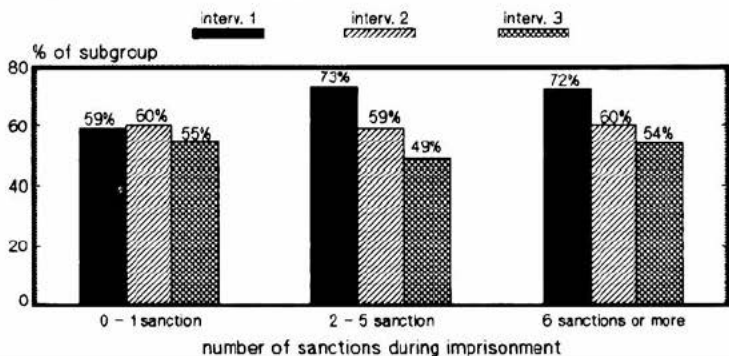


Diagram 2: WITHDRAWAL OF PRISON ALLOWANCE "bothers me a lot"

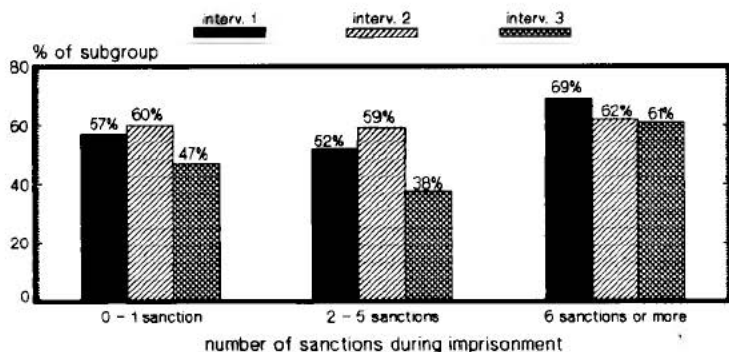
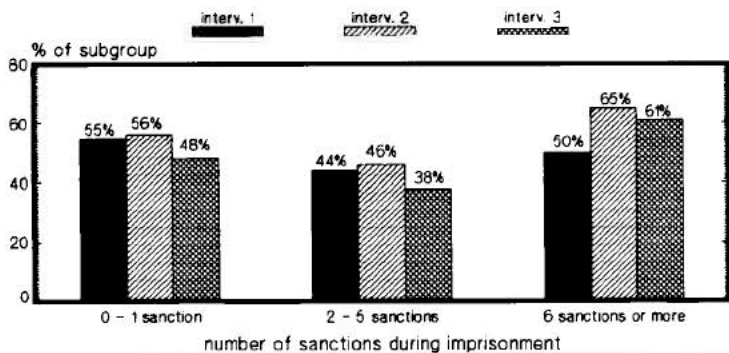


Diagram 3: RESTRICTION ON PURCHASE "bothers me a lot"



(62% and 61%, respectively). As a result, the percentage of inmates considering this sanction to be very severe towards the completion of detention is higher within the high-rate group than within those two groups affected little or moderately. As illustrated by Diagram 3, depicting restrictions on purchase in prison, high-rate respondents react more sensitively to this sanction (61%) than those affected little or moderately by sanctions (48% and 38%, respectively).

Table 2: Respondents' attitude towards restrictions on leisure time activities according to the number of sanctions imposed during imprisonment

	Interview (absolute)	bothers me not at all, little, to some extent (1-3) percent	bothers me quite a lot (4) percent	bothers me a lot (5) percent
0 - 1 sanction	I 1 (54)	54	24	22
	I 2 (47)	45	17	38
	I 3 (30)	59	17	23
2 - 5 sanctions	I 1 (69)	48	25	28
	I 2 (59)	59	14	27
	I 3 (45)	58	22	20
6 sanctions or more	I 1 (36)	53	8	39
	I 2 (36)	70	-	31
	I 3 (29)	68	4	29

Regarding restrictions on leisure time activities (Table 2), we note that compared to the number of inmates affected little or moderately by sanctions a higher percentage of those affected highly rank this particular measure between "it doesn't bother me at all" and "it bothers me to some extent" within phases two and three. By comparison, the proportion of inmates within this group stating to be "bothered a lot" by this sanction is strikingly low.

In sum, there is no definite proof of the fact that the general sanction rate exerts an influence on the inmates' perceptions of sanctions. Nor have we been able to confirm the hypothesis that high-rate respondents tend to consider sanctions less severe the more time of the sentence passes. As to some sanctions, the trend seems to be quite the reverse, which would give rise to doubts regarding their efficacy as preventive measures.

3.3.2 Special sanction rate

The foregoing passage entered into the question whether the sanction rate has an impact on the inmates' perceptions, i.e., whether those affected highly exhibit a higher degree of indifference towards sanctions. In determining whether a connection can be posited between the degree to which inmates are affected by a particular sanction and the perceived severity, this question shall now be examined more detailed. We can take into account only disciplinary measures within the meaning of the law, since the number of other measures (also intended as sanctions) we could extract from the files was too small.

Focusing on restrictions on prison allowance and purchase in prison (Diagram 4) we note that a higher proportion of inmates affected once or more by this sanction during correction at first rated it as "bothering a lot" as compared to the percentage of inmates who had not experienced this measure as of yet (78% and 52%, respectively). This high percentage declines rapidly towards the second phase (58%), now showing a high level of agreement with the unaffected group, this level remaining quite stable towards the third phase. Arrest (Diagram 5) shows no such differences, yet we can note clearly that the percentage of inmates both having experienced arrest and considering this measure very severe decreases towards the middle of detention (from 47% to 37%), rising anew thereafter (to 42%), as opposed to the proportion of inmates unaffected by arrest which decreases steadily (from 49% down to 41%). The case is quite the reverse regarding restrictions on leisure time activities (Diagram 6). The percentage of affected inmates considering this measure exceptionally severe increases considerably towards the middle of detention (from 26% to 44%), dropping again to the original level within phase 3 (to 27%). The unaffected group exhibits a dynamical process similar to those unaffected by arrest: a slow decline from 29% to 22%.

In conclusion, inmates affected by certain sanctions attach a different degree of importance to the latter than unaffected prisoners, this applying especially to the beginning and to the middle of detention. As to those having experienced restrictions on prison allowance and purchase in prison, we note that the anticipation of severity at the outset of detention does not automatically result in good conduct.

3.4 Perceptions according to confinement experienced

Approximately every fifth respondent had already been imprisoned earlier. We can assume that in this context he had been confronted by sanctions either by being affected directly or by witnessing sanctions being imposed on his fellow-inmates.

Diagram 4: BAN ON ALLOWANCE OR PURCHASE "bothers me a lot"

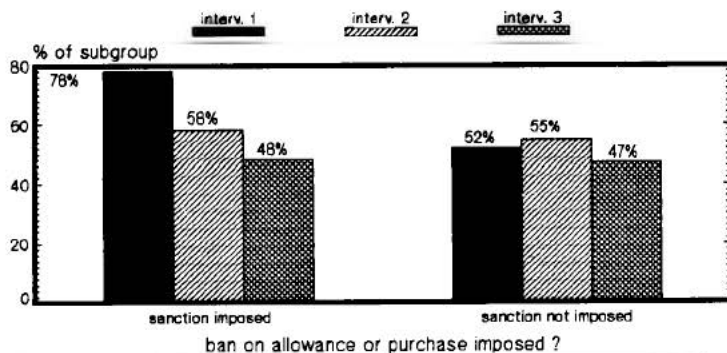


Diagram 5: ARREST "bothers me a lot"

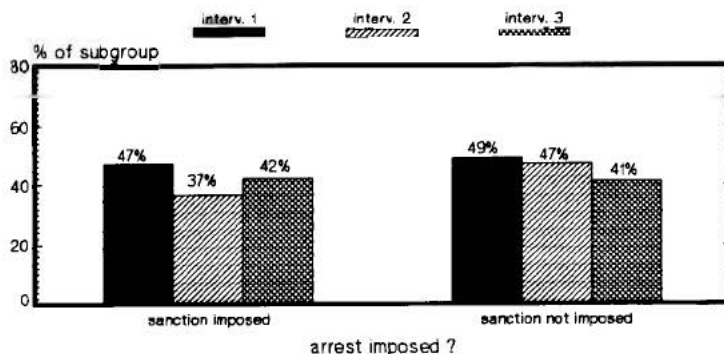
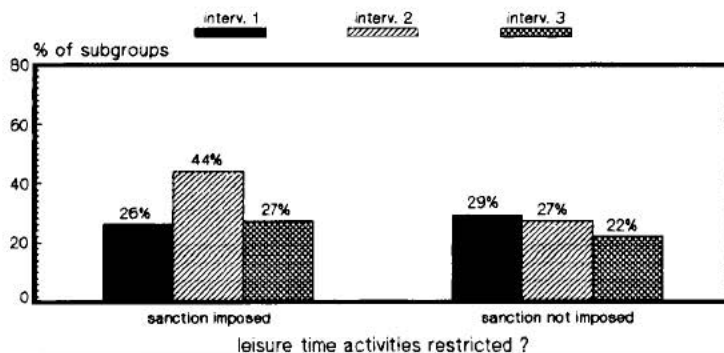


Diagram 6: RESTR. OF LEIS. TIME ACTIVITIES "bothers me a lot"



This could give rise to the notion that inmates with prison experience attach a different level of importance to sanctions from the outset (1st interview) than those experiencing confinement for the first time.

Variations within the three phases, however, could not be proven to be statistically significant. Still it is possible to describe several trends in this context. All three impositions depicted by Diagrams 7-9 ("ban on short prison leave", "withdrawal of prison allowance", and "restriction on purchase") exhibit a high level of agreement with regard to those inmates with prison experience giving these measures the highest rating-value: within the first phase, more than half stated that they were "bothered a lot" by these sanctions (54% - 57%), these percentages however decreasing steadily thereafter. On the whole, a greater portion of respondents without prison experience, as compared to the percentage of prison-experienced respondents, considers restrictions on short prison leave exceptionally severe. Although this portion decreases noticeably on the whole, the over-all level here is considerably higher: 71% for the first phase, dropping to 58% towards the third phase, as opposed to inmates with prison experience, the percentage of this group dropping from 54% to a mere 19%. Regarding both "withdrawal of prison allowance" and "restriction on purchase", we note that the percentages of inexperienced inmates are subject to different dynamics. Whereas the percentages of both inexperienced and prison-experienced inmates match to a high degree at the outset of correction, the proportion of inexperienced prisoners changes only insignificantly subsequently, while the percentage of experienced prisoners decreases.

Though not as obvious as in the case of the above-mentioned sanctions, the trend of arrest is also downwards (Diagram 10). The percentage of inexperienced inmates deeming this sanction most severe decreases also, although to a lower degree. The differences between both groups regarding restrictions on leisure time activities (Diagram 11) are not as evident. Both inmates being imprisoned for the first time and those with prison experience rate this measure moderately severe.

In sum, there are findings indicating that inmates without prior prison experiences attach a different degree of importance to sanctions than prison-experienced inmates. These differences are but small at the outset of detention, the percentages of experienced inmates considering these measures exceptionally severe however declining more rapidly in the course of confinement than the number of inexperienced inmates, the latter exhibiting stability to some extent. The hypothesis that prison-experienced inmates base their perception of sanctions on experiences made prior to the actual time of detention has therefore not been confirmed. Possibly, the impact of being imprisoned (anew) is identical to the impact detention has on inexperienced inmates at the outset, giving way, however, to a quicker adjustment to prison structures.

Diagram 7: BAN ON SHORT PRISON LEAVE "bothers me a lot"

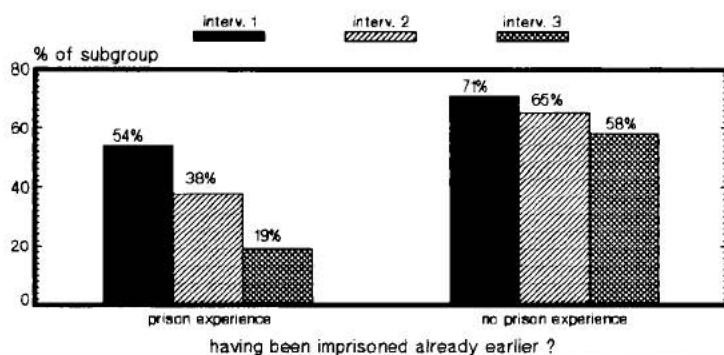


Diagram 8: WITHDRAWAL OF PRISON ALLOWANCE "bothers me a lot"

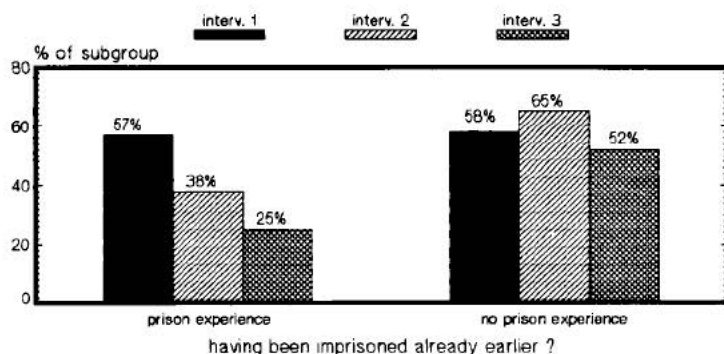


Diagram 9: RESTRICTION ON PURCHASE "bothers me a lot"

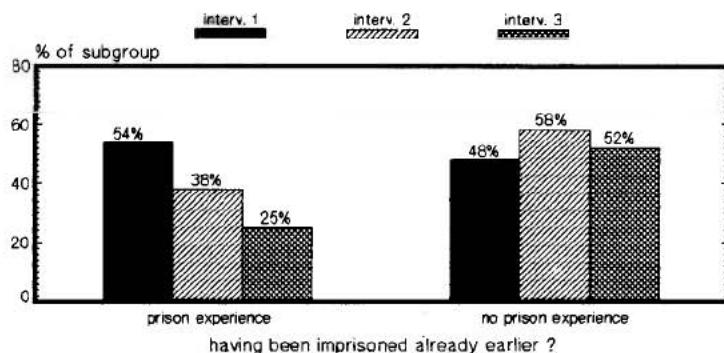


Diagram 10: ARREST "bothers me a lot"

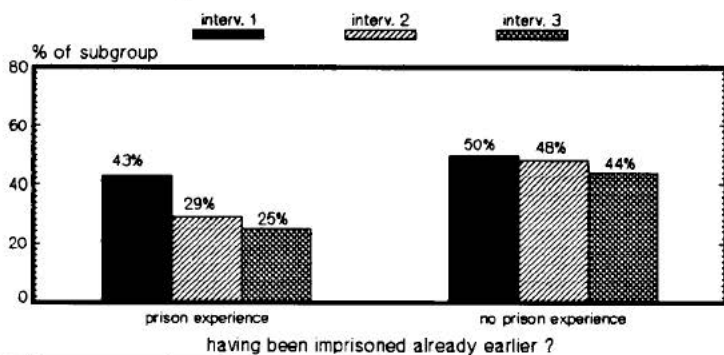
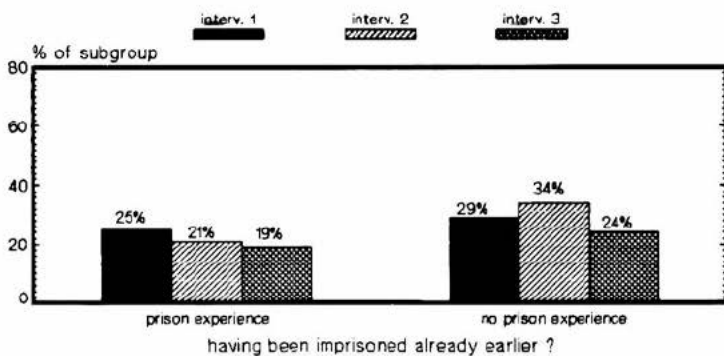


Diagram 11: RESTR.ON LEIS. TIME ACTIVITIES "bothers me a lot"



4. Summary

The purpose of this research was to examine the severity of consequences for institutional rule breaking as perceived by inmates of juvenile correctional facilities. Filing a complaint is deemed the most severe consequence, as it might entail additional criminal proceedings and, accordingly, a prolongation of the present sentence or a new sentence. Restrictions on chances to leave the facilities for a certain spell unguarded and restrictions on contacts to the outside world rank next. Moreover, material possibilities within the institution such as purchasing tobacco, coffee, etc. are of major importance. Arrest, regarded as the most grave kind of sanction by juridical literature, is given a medium rating by inmates. This gives rise to the question whether a decline in the number of arrests imposed running parallel to an increase in the number of restrictions on leisure time and social activities can automatically be regarded as a turn away from reactions molded by custodial principles. The prison staff possibly considers these other measures more effective simply because they have a higher impact on the sensitivity of those affected.

Inmates who had been reported repeatedly for disciplinary infractions rated particular sanctions more severe more frequently than those affected either little or not at all. Thus, the significance of (the threat of) sanctions regarding the avoidance of deviant inmate behavior is considerably relativized. If those who perceive sanctions more sensitively from the outset are nevertheless sanctioned more frequently than others, this points at the fact that other factors, e.g., situational factors are of great importance in this context. Effects of "wear and tear" in the course of detention regarding the severity of sanctions as perceived by inmates who had been reported repeatedly could not be established. Differences exhibited at the outset of correction between prison-experienced inmates and inmates being confined for the first time were not essential. However, the dynamical processes taken in the course of detention were quite different: the percentages of prison-experienced inmates giving particular impositions the highest value possible declined rapidly in the course of detention, as compared to those experiencing correction for the first time, the latter's perceptions of severity remaining quite stable. Possibly, detention exerts an equal impact on both groups at the beginning, the former group, however, after being imprisoned anew, adjusting more quickly to prison structures thereafter.

Appendix:

Table 3: Severity of certain types of disciplinary sanctions as perceived by inmates of juvenile correctional facilities (in percent)

	interview (absolute)	doesn't bother me at all	bothers me a little	bothers me to some ex- tent	bothers me quite a lot	bothers me a lot	not stated
restrictions on leisure time activities	11 (161) 12 (149) 13 (109)	6 17 19	19 21 23	27 17 17	20 11 16	53 31 22	- 3 3
transfer back to closed ward	11 (161) 12 (149) 13 (109)	9 22 14	6 10 8	19 11 19	24 21 14	40 32 35	- 3 11
arrest	11 (161) 12 (149) 13 (109)	3 9 9	9 10 10	12 11 15	28 24 23	48 44 40	- - -
calming-cell	11 (161) 12 (149) 13 (109)	6 9 8	9 8 8	8 9 10	23 17 23	54 54 47	- - 4
restrictions on visits	11 (161) 12 (149) 13 (109)	2 5 9	5 7 7	11 9 8	19 17 20	63 58 52	- 2 3
ban on short prison leave	11 (161) 12 (149) 13 (109)	3 7 10	2 5 5	4 9 11	23 18 21	68 59 50	- 2 3
restrictions on furlough	11 (161) 12 (149) 13 (109)	6 7 7	1 5 5	3 6 6	16 17 21	74 63 57	- 2 5
withdrawal of prison allowance	11 (161) 12 (149) 13 (109)	2 3 4	1 3 4	8 9 7	30 23 36	58 59 46	- 2 4

	interview (absolute)	doesn't bother me at all	bothers me a little	bothers me to some ex- tent	bothers me quite a lot	bothers me a lot	not stated
restrictions	I 1 (161)	2	1	13	34	48	1
on purchase	I 2 (149)	3	3	11	28	54	2
in prison	I 3 (109)	6	3	14	28	47	3
work	I 1 (161)	5	10	14	19	51	1
without	I 2 (149)	5	7	14	17	55	2
pay	I 3 (109)	4	6	24	19	44	4
withdrawal	I 3 (161)	17	17	24	18	24	-
of	I 2 (149)	26	10	23	15	25	2
work	I 3 (109)	23	13	18	26	17	4
	I 1 (161)	17	22	23	20	18	-
reprimand	I 2 (149)	26	15	24	14	18	3
	I 3 (109)	20	13	28	16	19	4
	I 1 (161)	2	3	4	12	80	-
complaint	I 2 (149)	3	1	5	10	78	-
	I 3 (109)	2	-	2	10	83	4

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Evaluation of a Drinking-Driver Rehabilitation Program for First Offenders

Anton Rosner

The possibilities offered by technical progress combined with steady economic growth since the War have led to a tremendous boom in road traffic. Over the past 10 years, changes have taken place in our society with regard to attitudes towards the application of technical innovations. With the increase in negative repercussions (damage to the environment, accidents, rise in the number of traffic fatalities), came a growing awareness of the perils and risks involved. Although measures which seemed appropriate were taken in an effort to curb the aforementioned damage and risks caused by increasing road traffic, in practice, the mere maintenance of the status quo frequently had to be considered a success. Conflicts of interest among various social groups (the State, industry, automobile associations, citizens' initiatives), made it difficult to translate the increased awareness of the problem into resolute action.

However, we are not only confronted with the difficulties of the feasibility of appropriate measures for protecting mankind and nature; we also face the problem that measures (such as speed-limits on the German expressways and more stringent penalties for wrong-way drivers) are being fervently demanded or rejected, while their effectiveness in achieving their intended aims is often moot. It is the task of science - in our field, empirical research in the social sciences and psychology - to examine the intended and unintentional effects of measures whose ultimate goal is to curb the damage which could be caused by technology. In the context of a special field of work in traffic psychology, the present study addresses the question of the effectiveness of one such measure and discusses the difficulties involved in answering said question. Using the example of a rehabilitation program for DUI (driving under the influence) offenders conducted in Baden-Württemberg, we have investigated the extent to which innovative measures can serve to reduce traffic hazards caused by driving under the influence of alcohol. The criterion used for judging the effect of the rehabilitation programs is the rate of recidivism seen

from the point of view of criminal law. The advantages and disadvantages of employing this criterion shall not be discussed in further detail here. Given the fact that it is difficult to establish more adequate criteria for measuring effectiveness, we accept the fact that objections might be raised concerning the validity of the criterion which we have selected.

In the Federal Republic of Germany, psychology is applied in the area of road traffic chiefly at the TÜV (Technical Control Associations) institutes for medical psychology and the Bundesanstalt für Straßenwesen (Federal Institution for Road Traffic). Apart from other fields of application (such as accident research, ergonomic design of vehicles and traffic facilities), one of the first contributions of psychology to traffic safety after the War was the exclusion, with the aid of diagnostic methods, of those persons who are unfit for driving or are a danger to the safety of others. In the seventies, this practice was extended by the development and testing of therapeutic and pedagogical models intended to promote competent and responsible participation in traffic. In 1971 Winkler¹ (TÜV, Hannover) began to rehabilitate drink-drivers in the town of Leer (Ostfriesland). At approximately the same time initial steps towards adapting "driver improvement" programs to German conditions were taken.² At first, programs were offered for repeat offender drink-drivers. At the end of the seventies, the trend shifted towards developing a rehabilitation program for first-time traffic offenders. The most widespread of these programs was the rehabilitation model introduced by the TÜV in the Rhineland, which came to be known as "Mainz 77".³ In February 1980, this model was also implemented in Baden-Württemberg. It was first attempted as an experiment in conjunction with the Ministry of Justice which lent the idea legal support by curtailing the period for which the driver's license is revoked as a form of incentive. Although it remained somewhat controversial, the idea of combining rehabilitation with a curtailment of the revocation period gained the support of the courts and the district attorneys.⁴ Thus, the question was raised as to whether the supplementing of the disciplinary measure (the revocation of the driver's license) by rehabilitation programs meets the expectations placed in it. Against the background of this legitimization problem,

1 See Winkler 1982.

2 Spörer 1972.

3 Kunkel 1979, 1980.

4 The documentary collection published by the Ministry of Justice of Baden-Württemberg on a symposium held in 1980 in Triberg, gives a vivid picture of this discussion that took place at the time (see Justizministerium Baden-Württemberg 1981). At the symposium, experiences and opinions were exchanged and consequences brought up by psychologists, judges, district attorneys, lawyers, and representatives of various organizations with respect to the experiment which had recently been initiated for DUI first-offenders. See also Kürschner 1983, p. 17 et seq. for the legal and organizational outline conditions, as well as for critique and acceptance of the experiment in Baden-Württemberg.

evaluation studies were conducted in the various federal states parallel to the programs which were being offered.⁵

One of these evaluation studies was carried out by the Max Planck Institute for Criminal Law on a rehabilitation program in Baden-Württemberg. Along with questions concerning the motivation, composition and the selection of the group of participants, a topic of major interest was the rate of recidivism among participants as compared with that of the population.⁶ The findings of the evaluation study on the recidivism of the participants for the years 1981/82 will be presented below with a view to taking a stand on the question raised at the outset, that is, to what extent this innovative measure for increasing road traffic safety actually meets the expectations placed in it. This question - which in the final analysis is the decisive one - the problem of the practical aspects of such research will also have to be discussed, namely, that the empirical study described above had to use a study design which, in turn, limits the chances of answering this question.

The rehabilitation programs under study took place from August 1981 through June 1982. The 420 male program participants and the 47 male applicants studied had been convicted of driving under the influence of alcohol between the beginning of 1981 and the middle of 1982. The programs in question were conceived along the lines of the "Mainz 77" model.⁷ They had to be completed within one month during which sessions were held on four afternoons with a group of 6 to 10 participants under the direction of a specially trained psychologist from the TÜV. Prior to the program, participants were invited to a preliminary interview in the course of which an interviewer's guide made it possible to gather information about the motives for wanting to take part in the program and to see whether the necessary prerequisites for inclusion were fulfilled (not more than one DUI offense, no signs of alcohol dependency, a minimum of insight into one's problem, and the ability to participate in group-activities). The above data were combined with information collected about recidivism in the subsequent three years (by inquiring at the Bundeszentralregister (Federal Central Register for Judicial Records) in April, 1985. These data were analyzed to see to what extent the participants in a rehabilitation program differed from non-participants under study in terms of recidivism, and whether any differences observed could be attributed to participation in the rehabilitation program or to other features.

The three study groups described below were compared. Data on these groups were obtained within the evaluation study conducted on the rehabilitation program. Reference was also made to comparative data from a study carried out

5 See Bundesanstalt für Straßenwesen 1979.

6 See Rosner 1988.

7 Hase 1981, p.32 et seq.

by the TÜVs of Baden and Stuttgart as well as by the Ministry of Justice of Baden-Württemberg:

- Male participants in the programs carried out (N = 420) between January 1981 and June 1982 (participants).
- Men who between January, 1981 and June, 1982 expressed an interest in attending the rehabilitation programs offered at the TÜV institutes for medical psychology but who, for various reasons, did not attend (initial interest had waned, they had either failed to appear for the preliminary interview or for the program or had been excluded due to signs of a drinking problem). This group, referred to below as applicants for the program (N = 47), exhibited, on average, more problems and was younger than the participant group. The lower average age indicates that, in terms of features, the applicant group was closer to the population than the participant group.
- A random sample of male DUI offenders with no previous convictions (N = 1,330) taken from the population of DUI offenders for 1979. The data originates from a part of the evaluation study conducted by Ostermann⁸ with the aim of obtaining valid comparative data for Baden-Württemberg.

The proportion of women in the various samples was between 3% and 5%. It is only possible to obtain information about women from the Bundeszentralregister if their maiden name is also known. Since this was not the case with most of the females in the samples mentioned, recidivism could only be ascertained for the male subjects. The three study groups mentioned do not represent equivalent samples. Apart from program attendance, the samples differed from each other with regard to other features, some of which are known (age, blood alcohol concentration) while others are not. Therefore, a comparison of the rates of recidivism still does not enable us to establish a causal relation with regard to any effect which might result from participation in the program. Instead, it is only possible to make interpretive statements about the possible effect of program participation in combination with the effects of other features dependent upon the sample.

It was possible to study the recidivism rate of all participants over a 2 1/2 year follow-up period starting with the conviction which led to participation in the program and ending with the inquiry at the Bundeszentralregister. However, since the rehabilitation programs included in this study were spread over a period of 1 1/2 years, it was possible to keep track of the recidivism rate for a sub-group over a period of four years (as of the date of conviction). However, isolated observation of this sub-group is not very productive since the cases are very few. Given that the rate of recidivism in this sub-group of 83 participants differed significantly from the data on

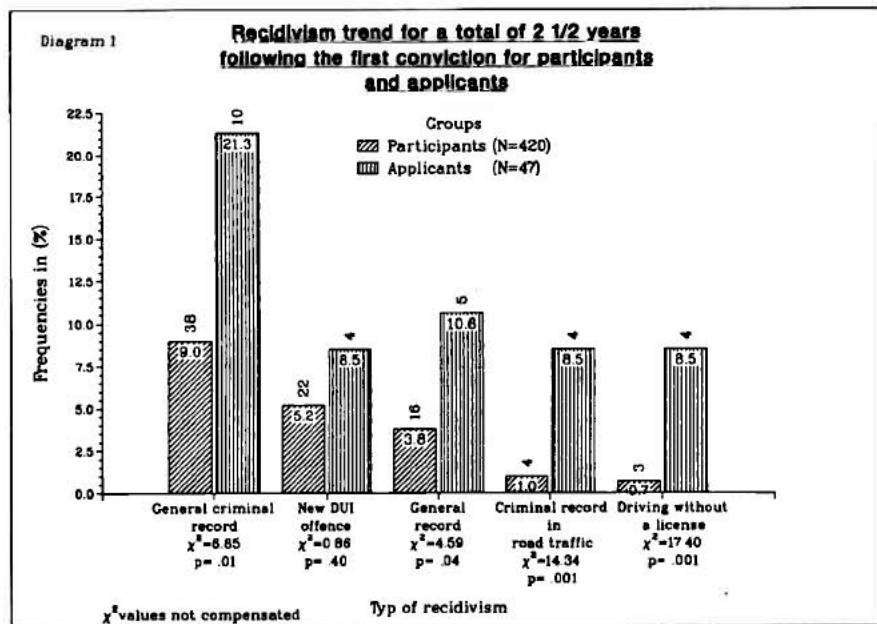
8 Ostermann 1987.

the other participants, separate evaluation of the data was considered superfluous.

The repeat offences were divided into three categories:

- a new DUI offence
- other driving offences
- recidivism in the area of general criminality

Of the 420 male participants in the program, 38 individuals (9.0%) were registered in the Bundeszentralregister for a criminal offence within the follow-up period of 2 1/2 years after the first conviction (See Diagram 1). Slightly more than half of the recidivious participants had committed a new DUI offence within 2 1/2 years after the conviction which had led to participation in the program. In the group of alcohol recidivists, cases of recidivism were confined to this type of offence. Of these 22 participants, only 2 committed more than one DUI offence or other offences.



Among the applicants for the program, the proportion of recidivists in terms of general criminality was twice as high as among the participants. All types of offences - with the exception of drunken driving - were significantly more frequent among the applicants than among the participants. Program participants differed least from applicants with respect to the frequency of recidivism in connection with drunken driving. As far as the latter is concerned, applicants had a recidivism rate of 8.5% vs. 5.2% for participants. By contrast, the rate of recidivism among applicants was twice as high and more in the other categories.

Moreover, as previously mentioned, the composition of the applicant group - in terms of socio-demographic features - lay between the participant group and the population. Therefore, as a comparison group, the applicants for the program were closer to the participant group than a sample taken from the population of DUI offenders. However, extracts from the Bundeszentralregister also revealed that applicants were more likely to have had previous convictions on the grounds of general criminality than were participants. This should explain the higher rate of recidivism for general and traffic offences in this group. The rate of recidivism relative to DUI offences was 8.5% for the applicants to the program, a value which is very close to that of the sample (7.7%).

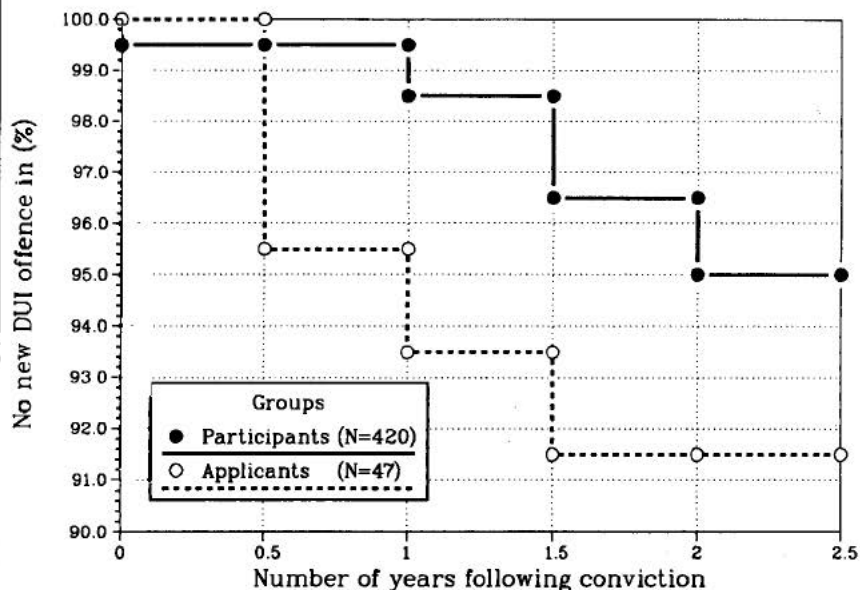
The chronological trend of recidivism, within the 2 1/2 year period following conviction, was recorded cumulatively in the form of what is known as survival rates (see Diagram 2). One and a half years after conviction, the survival rate for non-recidivism with respect to DUI among the participants was still very high (98.5%). This first year following conviction covered the period of time for which the driver's license was revoked; it should be noted, however, that in the case of participants who were granted a two-month curtailment of this revocation period, the driver's license was revoked on the average for a period of six months. The individuals who had come into any type of conflict with the law during this period had driven under the influence of alcohol without a driver's license.

The sharpest increase in the rate of recidivism or drop in the survival rate occurred around the second year after conviction. One and a half years after conviction, 98.5% of the subjects had not yet come into renewed conflict with the law. This proportion decreased to 94.8% two and a half years following conviction. Thus, in this phase which is obviously critical with respect to recidivism, the rate of recidivism increased by 3.7%.

The recidivism trend for applicants differs with respect to what takes place during the first year after conviction. In this period, two (4.3%) of the applicants committed new DUI offences. The subsequent recidivism trend was parallel to that of the participants but lay on another level. It must be noted, however, that only a small data base was available for use in interpreting the trend of the recidivism curve for applicants (4 recidivists in a sample of 47).

Diagram 2

**DUI recidivism trend
for participants and
applicants**



Only with respect to the participants it was possible to also investigate connections between DUI recidivism, socio-demographic features, aspects of program motivation, and driving experience. Information about these features was not available for the other two sub-groups.

Significant differences between recidivists and non-recidivists emerged for the following variable: length of time the person had had his/her driver's license, driving experience, use of driver's license for leisure activities, age, and marital status. Age and driving experience appeared to be clear predictors of the likelihood of recidivism. As driving experience increased, recidivism decreased markedly. Forty years was a significant age-limit in this connection (see Diagrams 3 and 4).

A higher rate of recidivism, which was significant at a level of 1%, appeared among the participants who used their motor vehicle less for leisure activities. With regard to marital status, a significant tendency was observed in the expected direction, namely, that married participants were less frequently recidivous (7.1%) than singles (4.1%).

Diagram 3

DUI recidivism rates for participants according to blood alcohol concentration (BAC) levels

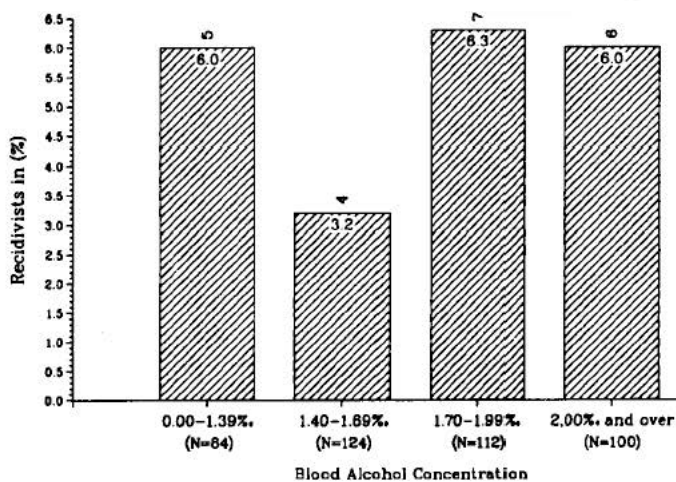
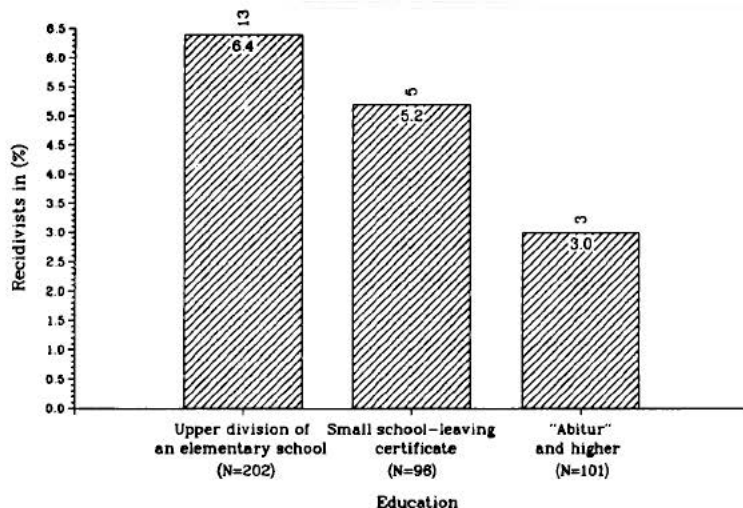


Diagram 4

DUI recidivism rates for participants according to education



Blood alcohol concentration which, according to the relevant literature, is generally considered as being a major predictor of recidivism, revealed no connection with the recidivism trend (see Diagram 3). This may be due to the fact that the participants in the rehabilitation program were subject to a process of selection by means of which those applicants who were suspected of having a drinking problem were excluded from the program by a preliminary interview.

Even though there was no significant correlation with factors linked to social strata, it should still be pointed out that a significant trend could be discerned. A linear correlation was revealed between education and recidivism; the higher the education level, the lower the rate of recidivism. The rate of recidivism for participants who had completed the upper division of an elementary school is clearly higher (6.4%) than that of participants who had passed the "Abitur" examination (high-school/A-level diploma) or had a higher level of education (3.0%) (see Diagram 4).

Moreover, significant trends could be ascertained with respect to three variables which constitute aspects of the individual's assessment and judgement of his/her own drinking habits and driving conduct:

- The individual's assessment of present drinking habits as compared with previous drinking habits (less, just as much, more)
- Predictability of the reason for drinking
- Retrospective assessment of fitness to drive when asked during the preliminary interview.

Recidivism was lower if drinking habits were assessed as being unchanged, the reason for drinking as foreseeable, and the fitness to drive as being null. It would seem that those participants in the program who had a more self-critical assessment of their drinking habits and driving conduct were less likely to be recidivous.

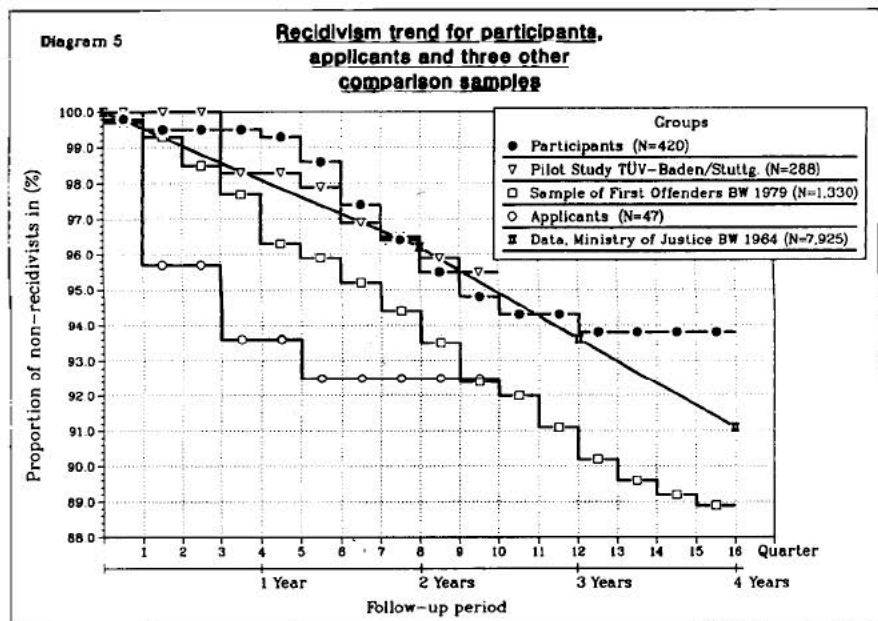
The comparisons made below refer to a probation period of 2 1/2 years following the first conviction. The recidivism trend has been graphically illustrated in Diagram 5 for the following five samples:

- The group of participants in the rehabilitation program and the applicants for the program (5/81-8/82) of the present study,
- A sample of participants (3/80-5/81) in a pilot study conducted by the TUV Baden/Stuttgart,¹²
- A sample (N = 7,925) of DUI offenders in various Landgericht (regional court) districts in Baden-Württemberg for the year 1962,¹³

¹² See Hase 1983, p.39 et seq.

¹³ Justizministerium Baden-Württemberg 1964.

- A random sample (N = 1,330) of the population of all male DUI offenders with no previous conviction resident in Baden-Württemberg. These data relate to the year 1979 and were collected in an evaluation study conducted by the Max Planck Institute.¹⁴



The sample taken from the population of male DUI offenders who had no previous convictions was made with the aid of random numbers totalling 10% of the population. The 1979 court statistics forms from the Statistisches Landesamt (State Census Bureau) and the electronically processed data served as a basis. In 1987, Ostermann surveyed and evaluated the legal conduct of this sample as part of his dissertation. For the comparison with the participants, reference is made to the data processed by Ostermann. The sample consists of 1,330 persons convicted of a DUI offence except negligent homicide and intoxication who otherwise had no previous conviction. Ostermann conducted his investigation over a follow-up period of five years. For the comparisons made in the present study, the follow-up period

¹⁴ For a detailed description of the sample selection process, data collection, and composition of the sample see Ostermann 1987. In Ostermann's study, the legal conduct of the comparison sample is analyzed over a period of 5 years.

was confined to 30 months or 913 days, corresponding to the analyses conducted on the participants.

With regard to the sample of participants in the rehabilitation program, the probation period of 2 1/2 years as of the date of the first conviction was the period in which valid observations could be made. It enabled adequate allowances to be made for the delay of about one to two months which ensues between the date of conviction and the registration in the Bundeszentralregister. The last group of participants whose first conviction occurred in the second quarter of 1982, would thus have a probation period lasting until the fourth quarter of 1984. The period of January through March 1985 was long enough to take into account the delay caused by reporting the conviction to the Bundeszentralregister. Using the entire sample of participants (N = 420) in our analyses, it was thus possible to reach an acceptable compromise between the size of the sample and the duration of the probation period.

During the probation period of 2 1/2 years, the participants revealed a recidivism rate of 5.2% whereas the sample of those members of the population who had not participated in a rehabilitation program had a rate of 7.3% (see Diagram 5). The value of the participants' recidivism rate was almost the same (4.5%) as that reported beforehand by the TÜVs of Baden and Stuttgart.¹⁵ The recidivism rate for our sample of participants was therefore 2.1% lower than the sample taken from the population. The difference between these two values is statistically not significant. We should, however, refrain from over-interpreting this result since the very question of whether the difference between two recidivism rates is statistically significant, depends on the size of the sub-samples. In view of the low recidivism rates in our field, extremely large sub-samples would be necessary to ascertain even small differences statistically. Diagram 5 shows the peaks in recidivism among applicants. After a period of 2 1/2 years, this recidivism rate approached that of the 1979 sample. This is fully in line with expectations since neither of the two groups underwent rehabilitation. The pattern of recidivism revealed by the survey of motorists with single and multiple DUI offences, conducted in 1964 by the Ministry of Justice in Baden-Württemberg, was nearer to that of the group of participants.¹⁶ As a reference group, the 1979 sample is certainly more appropriate. The rather minor differences which appeared among all the compared groups are in no way spectacular.

¹⁵ See Hase 1983. Not all subjects could be covered for a follow-up period of 30 months so that the figure 4.5% is not comparable in all respects.

¹⁶ The 1964 sample is a collection of data about all DUI offenders in a number of Landgericht (regional court) districts. It is astonishing how low the recidivism rate is despite the fact that this group had greater problems.

Independently of considerations regarding statistical significance tests, in our case, the possibility of a crude comparison between both groups must definitely be seen in relative terms in the light of the reservations presented in detail above. We are dealing with dissimilar comparison groups whose incomparability, with respect to some factors, was known, whereas for others it was not. Since it has been established that precisely age is a major predictor of recidivism and since both samples differed, particularly with respect to age, the following comparisons, which take the variable of age into account, are more meaningful than the mere comparison of two recidivism rates. The difference between the recidivism rates of participants and non-participants was 7.3% vs. 5.2%. This figure is quite low if one considers that, in the rehabilitation programs, a recidivism rate of 9.8% was observed in the first half of 1981 compared with 1.6% in the first half of 1982. The fluctuations between the different program sites - 5.4% (Stuttgart) compared with 3.2% (Freiburg) - are less pronounced than those between the different dates of participation in the program. However, they are just as high as those between participants and non-participants. There is reason to conclude that the differences in recidivism rates between participants and non-participants are similar to those which result from comparing different participant sub-groups (differentiation according to program sites and dates of participation in the program). The reason for the differences between these sub-groups - whether random errors or systematic effects - is unknown. Although the existence of a systematic difference between participants and non-participants cannot be excluded, since the difference is so slight (2.1%), it would seem doubtful in view of the background described above. The trend of the curve after 2 1/2 years, strongly suggests that greater differences could emerge over extended follow-up periods.

We shall now compare the recidivism trends in the different samples. Diagram 5 (illustrating the recidivism trends in both comparison groups, participants and the 1979 sample) shows, that there are two recidivism trends characteristic of each group. The recidivism trend for those who did not attend a rehabilitation program was relatively uniform and exhibited no peaks within the first 2 1/2 years. On the other hand, in the case of the participants, the recidivism peak emerged 1 1/2 to 2 years after conviction. In the period prior to this, only a few program participants were recidivous while the number of new DUI cases after two years subsequent to conviction declined.

In analyzing the relationships between predictors and the recidivism rates for the sample of participants, it was already possible to demonstrate that age has a particularly strong and meaningful influence on recidivism and that this influence is stronger than that of all the other variables. It therefore seems justified to focus attention on the comparison of the recidivism rates of different age groups. The fact that very few variables about biography and features of the respondents are avail-

lable for the population sample, precludes, in any event, more in-depth analysis. The loss due to this limitation seems, however, to be mitigated by the striking significance of the age variable.

Since the great majority of participants had their driver's license returned to them after approximately 6 - 7 months (which included the curtailment of the blocking period), in each of the cases studied below, recidivism in the first 18 months is compared with repeat offences in the 19th to the 30th month. In the comparison group, we can thus assume that the driver's license was revoked for an average of 8 months.¹⁷ The actual probation period (in the sense of driving on probation) thus did not start until about six months after the date of conviction. This is why our division of the follow-up period into a first phase of 18 months and a second one of 12 months divides the probation period following the reissue of the driver's license into two equal parts.

For those who did not undergo rehabilitation, approximately the same number of DUI repeat offences ($N = 54 : N = 43$) were registered in the first 18 months and in the subsequent twelve-month phase after conviction (see Diagram 6). On the other hand, among participants, only a quarter of the repeat offences occurred within the first 18 months ($N = 6$) of the investigation period of 2 1/2 years. A statistical significance analysis of the first 18 months in comparison with the second phase of 12 months for both the participants and the comparison group, yielded a chi square value of 5.78 which was significant at the 5% level; this is, nonetheless, a significant difference despite the low number of cases.

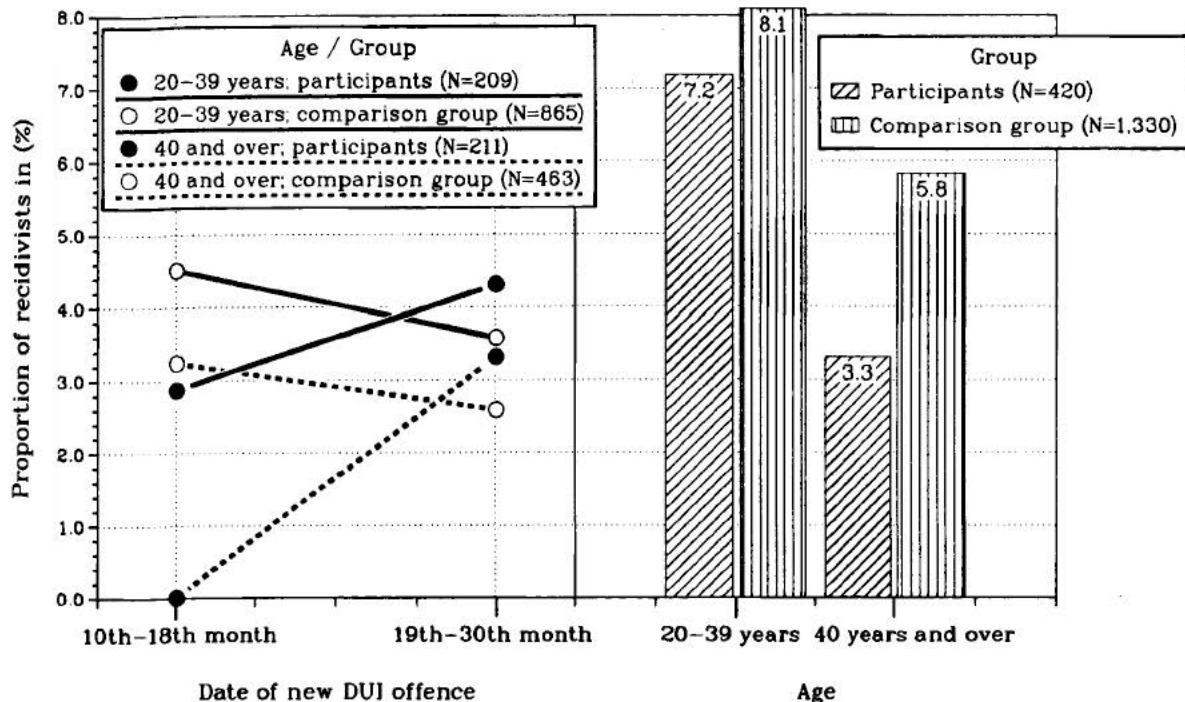
One possible conclusion is that participation in the program has the effect of delaying recidivism. In the first 18 months subsequent to conviction, participants were far more restrained as far as driving under the influence of alcohol is concerned. Moreover, they had less of a tendency to sit behind the wheel before their driver's license had been returned. However, this period of abstinence with respect to alcohol and driving was followed by an interval of intensified recidivism which ends approximately 2 1/2 years after the conviction. It is regrettable that the participants' limited probation period does not allow us to examine recidivism occurring up to the fourth year after conviction. A glance at the recidivism trend among the participants in the first rehabilitation programs in our sub-sample, confers the impression that recidivism dropped markedly after the 10th quarter.

Comparisons were also made according to age groups. In the 20 to 39-year group, such comparisons revealed only slight differences in the recidivism rates of participants and non-participants (7.2% vs. 8.1%). Among those over 40, however, the recidivism rates differed; the rate for participants over 40 (3.3%) shows that

¹⁷ See Rosner 1988, p.96 et seq.

Diagram 6

**Recidivism trend for non-participants
and participants according
to age**

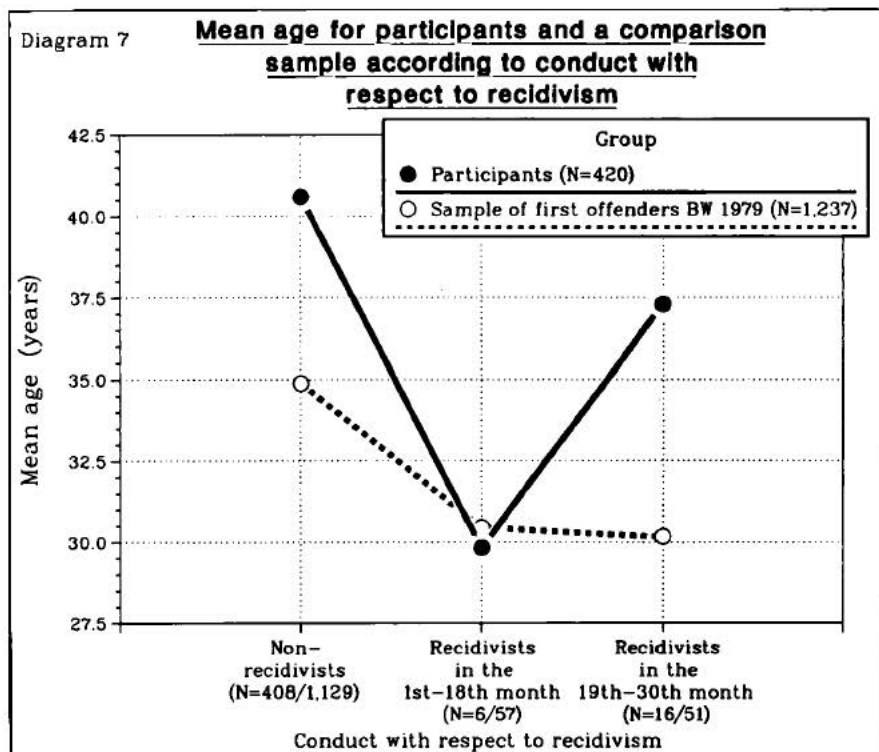


they were less apt to become recidivous within the 2 1/2 year period than non-participants (5.8%). This comparison produced a chi square value of 4.6. which was significant at the 5% level and which could imply that rehabilitation probably has a stronger effect on participants over 40 than on younger participants.

Among non-participants, recidivism was distributed fairly uniformly over the two phases of the 30-month follow-up period; only in the second phase was a slight increase to be observed. For the participants a certain lag with respect to recidivism could be noted for both age groups but this lag seemed more pronounced among those over 40. In the over 40 age-group no case of recidivism could be observed in the first 18 months.

In another statistical analysis (see Diagram 7), the mean ages of the following groups were compared:

- Non-recidivists (N = 408 for participants, N = 1,129 in the comparison group)
- Recidivists in the first 18th months (N = 6; N = 57)
- Recidivists in the 19th to the 30th month (N = 16; N = 51)



The mean age of participants is 40.3, that is, 5.7 years higher than in the sample of the population (*t*-test: $t = 9.00$, $p = .000$). Those participants and non-participants who were recidivous in the first phase of the follow-up period were approximately of the same age - on average 30 years old - and thus considerably younger than the non-recidivists in both samples. The findings discussed in a different form in the previous section, reveal further that, among those who had not undergone rehabilitation, age made no difference to whether recidivism occurred relatively soon or not before the 19th and the 20th month. For participants, however, there was a clear-cut age difference between early and delayed recidivists; the early recidivists were on average 7.5 years younger (*t*-test: $t = 1.89$, $p = .082$). The difference in age between participants and non-participants who became recidivous between the 19th and the 30th month was significant at the 5% level (*t*-test: $t = 2.42$, $p = .024$). Whereas age has no effect on the recidivism trend among non-participants, it very clearly has an impact on that of participants.

The results can be summarized as follows:

1. The recidivism rate with regard to a new DUI offence (within a follow-up period of 2 1/2 years or 30 months after the first conviction) was 5.2% for participants and is thus very close to the findings of comparable studies with the same probation periods. Utzelmann and Stephan reported recidivism rates of 7.1% and 5.5% among DUI first-offenders who had undergone rehabilitation.¹⁸ The pilot study of the Baden and Stuttgart TÜVs arrived at a value of 4.5%.¹⁹
2. The recidivism rate for the 1979 comparison sample of DUI first-offenders without a criminal record,²⁰ which was computed for an observation period of 2 1/2 years was higher (7.3%) than for the participants. However, it was clearly lower than previous estimates of recidivism for the population which assume that 35% will be recidivous within 10 years and 15% will be recidivous within 3 years.²¹ In view of the indications that the participants constituted a selection with a more positive prognosis, the difference between 5.2% and 7.3% (participants : comparison sample) cannot be interpreted as being the expression of a mitigating effect of the program with respect to recidivism. It tends, rather, to support the null-hypothesis, that is,

18 Utzelmann 1984, Stephan 1986.

19 Hase 1983.

20 Ostermann 1987.

21 These values rely on a comparison of different studies conducted by Kunkel in 1976. Studies by Albrecht 1982, Justizministerium Baden-Württemberg 1964 and Schöch 1973 came up with markedly lower values, scant notice of which has been taken. It is not unlikely that the data on the various federal states clearly differ from each other depending on the intensity of controls and police prosecution, on drinking habits, and driving conduct.

that the rehabilitation programs have had no effect on the group of participants taken as a whole. The recidivism rate in the small group of applicants who, after having initially applied with the TÜV to attend the program, failed to attend for one reason or another, was also higher than the rate for the participants (8.5%). Since we have to assume that the applicants also had a more negative prognosis than the participants, the results admit no statement as to whether the slight difference in the recidivism rates is attributable to the different composition of the samples or to the impact of the program.

3. Of all the recidivism predictors studied, particularly relevant predictors proved to be: age, the amount of time the driver had held the license, and previous driving experience. This emphasizes the significance of more extensive comparisons of the various samples taking age into account.

4. In differentiating according to age, more marked differences emerged between the participants and the comparison sample taken from the population than in the comparison of all samples. In the follow-up period of 2 1/2 years, the participants over 40 were on the whole less prone to recidivism than their contemporaries in the comparison sample (3.3% vs. 5.8%), in addition to which, recidivism was not likely to appear until the second half of the follow-up period.

5. In interpreting the findings, the conclusion was drawn that the systematic differences existing between the participant and the comparison group do not allow a valid statement about the impact of the program. The only controllable feature here - age - showed a clear influence on recidivism. Variables of this sort should be given greater consideration and be more intensively monitored both when planning the programs and when conducting the evaluation studies.

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Does Crime Pay ?

Possibilities for Criminological Research on the Origin and Sequestration¹ of Proceeds of Crime

Axel Dessecker, Jürgen Smettan

In the Federal Republic of Germany, theft, fraud and similar offences are the types of crime most frequently registered by the police. In other highly-developed industrial states, similar distributions of registered criminality are in evidence. Enrichment or the intention to make a capital gain is commonly seen as the prime incentive for the perpetration of such offences. There is a widely held belief that this assumption is true to an even greater degree for forms of organized crime.

Across countries, the reaction of the agencies of criminal prosecution is characterized by differing patterns. Considerable offence-specific differences are to be found as well. Apart from this, the courts often have to deal with the question of whether a convicted offender has derived a capital gain - in the language of economics: whether he has made a profit. The answer to this question can determine which rule of substantive criminal law will be applied in punishing the offender. However, the point of view of the attainment of profits also affects the choice and the determination of the sanction.

1. The proceeds of crime as an object of criminal sanctions

The obtaining systems of criminal sanctions are an expression of the endeavour to find an appropriate sanction for every type of behavior which is defined as meriting punishment. The more differentiated a sentencing system, the more

¹ We use this term as a collective name of different sanctions in criminal law - including forfeiture, confiscation and others - referring to the proceeds of crime.

numerous the possibilities of considering the proceeds of crime in the sentencing process.

The criminal law of the Federal Republic of Germany will be considered in greater detail in the following, with the aid of a number of examples.² The first thing striking, is the fact that at no point the law mentions explicitly the term "profit"; rather, there is talk of "enrichment" and "capital gain". Underlying this terminology are a number of considerations - the result of the historical evolution of the law - which are not of further interest here. What is decisive, is that the terms concur in essence. Even though the field of economics has thus far been unable to come up with a uniform definition, the qualification of profit as the difference between expenditure and yield is precise enough to be adopted in criminal law for the present.

Non-custodial sanctions which focus directly on assets, are, at first sight, particularly suited to sequestrating profits which have provided the offender in question with a capital gain. In the context of such punishments, fines are the first type of sanction to come into consideration. In the last decades in the Federal Republic of Germany, as in many other countries, fines have largely superseded sanctions based on the deprivation of freedom. Yet, since the introduction of the day-fine system in 1975, the law forbids, as a rule, the imposition of a fine for the purpose of sequestrating profits.³ Pursuant to the day-fine system, the amount of the day-fine unit is determined according to the net income of the offender for one day, while the number of day-fine units is fixed according to the gravity of the offence and the extent of the offender's culpability.⁴ The law obstructs the imposition of fines to deprive the criminal of his proceeds since the extent of culpability fixes the upper limit of the fine amount and, in determining the extent of culpability, the attainment of profits is, at most, one of several possible considerations.⁵

Only exceptionally a fine can be imposed for the purpose of sequestrating profits if a sentence to imprisonment is passed simultaneously (§ 41 German Penal Code). To offset this limit to the scope of application of fines, another sanction, whose sole purpose is to facilitate the sequestration of the proceeds of crime, was introduced in 1975: forfeiture (Verfall - § 73 German Penal Code). The application of this sanction is mandatory if an offender has received any economic gain for or

2 The text refers to the German Penal Code (StGB), 1987 version.

3 Grebing 1978a, p.88 et seq.; Hillsman, Sichel and Mahoney 1984, p.282 et seq.

4 The situation is different for fines according to § 17 IV of the Ordnungswidrigkeitengesetz (Regulatory Offences Act/OWiG), 1987 version.

5 Moreover, further limitations are created by the sentence procedures, e.g., § 46 III German Penal Code (Eberbach 1986, p.100).

from the offence. However, the relevant provisions are very complicated, and problems arise as far as court practice is concerned.⁶

Basically, criminal law has two possibilities of sequestrating the proceeds of crime.⁷ Either it provides for an independent sanction for this purpose, or it sees profits from crimes as one viewpoint which is to be dealt with by traditional sanctions - in particular fines. Characteristic of the second model are provisions which, in the event of attainment of profits, suspend the upper limit of the fine in question⁸ or restrict the imposition of fines from the very outset to cases of enrichment.⁹

It should prove impossible to find a pure form of either of the two models anywhere. In most criminal law systems, there seems to be some measure of uncertainty as to the most appropriate way of dealing with profits derived from crime using the means at the disposal of criminal law. Swiss criminal law, for example, contains, alongside the above mentioned suspension of the upper limit of the fine (Busse), a precept according to which assets from crimes are subject to confiscation.¹⁰ In the Federal Republic of Germany, the legislator has not yet been able to settle for forfeiture as the sole means of depriving criminals of their illicit gains.

More recent developments in criminal law increasingly perceive the proceeds of crime as a phenomenon which is to be dealt with by means of special sanctions.¹¹ Frequently, such sanctions are incorporated in special laws which are directed against organized crime¹² or illicit drug traffic.¹³ In consequence criminal law makes a distinction according to offence categories from the very outset, not only in the field of prohibitory provisions, but also in respect of sanctions. It is impossible to overlook the fact that such laws imply far-reaching encroachments upon the individual's personal rights and liberties.¹⁴

6 Eberbach 1986, p.106 et seq.

7 Grebing 1978b, p.1243.

8 One example is Art. 48 No. 1 S. 2 of the Swiss Penal Code (StGB) of 1937.

9 Such trends can be discerned in the USA (Hillsman, Sichel and Mahoney 1984, p.22 et seq.).

10 Art. 58 of the Swiss Penal Code.

11 The latest example comes from Austria (Pallin 1988, p.121 et seq.). However, this regulation is valid only for profits amounting to 1,000,000 Shillings and over.

12 This is the case in Italy, e.g., with the "Legge antimafia" of 1982 (Bertoni 1986), in the USA with the "Racketeer Influenced and Corrupt Organizations Act" of 1970 (Rhodes 1984, p.217 et seq.).

13 The case in Spain: "Ley orgánica, 24 de marzo 1988, número 1/1988 - Reforma del Código Penal en materia de tráfico ilegal de drogas", England and Wales: "Drug Trafficking Offences Act 1986 (Nicol 1988)", and France: "Loi no. 87-1157 du 31 décembre 1987 relative à la lutte contre le trafic de stupéfiants et modifiant certaines dispositions du Code pénal (Borricand 1988).

14 Rhodes 1984, p.221 et seq.

2. The proceeds of crime as a problem of criminology

To date, the economics of crime has not been a central point of reference in **criminological theory**. Nevertheless, there are two approaches which stress the economic aspects of crime. One explains crime in the Marxist tradition as the manifestation of the mode of production prevailing in a given society.¹⁵ A second approach assigns profit motivations an independent role in the theory of crime. In concrete terms, it is seen as a question of each offender's individual cost-benefit calculations.¹⁶

Criminological textbooks do not mention the topic at all or do so merely in passing. Some of the authors of German-language textbooks restrict themselves to summarizing the relevant statutory rules, some refer to the significance of profit for organized crime, and others address the topic in the course of discussing fining practice.¹⁷ In basic treatises on criminology from the United States, the topic, if mentioned at all, is discussed in the context of organized crime control.¹⁸ This manner of treating the topic is indicative of the fact that hitherto its significance has been given very scant attention in criminological research.

Although in the meantime eminently established, **empirical sanctions research** has concerned itself chiefly with the application of the primary sanctions: imprisonment and fines. However, in the Federal Republic of Germany, the disciplinary measures which exist alongside sanctions in German criminal law, are also investigated.¹⁹ Such measures comprise mainly custodial measures such as committal to a social therapy institution,²⁰ but also non-custodial measures, such as the mandatory supervision of conduct (Führungsaufsicht), which imply considerable infringements of rights.²¹ We have, however, come across no study which focuses on the utilization of supplementary sanctions to skim profits such as forfeiture in German law, or the imposition of fines as a means of sequestrating profits.

However, for the time being, available research findings on sentencing practices need to be examined with a view to whether they admit statements about the proceeds of crime and its sequestration. Although investigations on **fine use** can

15 This approach was first pursued by Bonger 1905. A more recent synopsis has been published by Michalowski 1985.

16 Becker 1974; Kerner 1986, p.24 et seq.

17 Eisenberg 1985, pp.351-352; Schneider 1987, pp.54-55; Kaiser 1988, pp.942-943.

18 Siegel 1986, p.393.

19 For a comprehensive presentation, see Kaiser 1988, p.894 et seq., p.946 et seq.

20 Schüler-Springorum 1983.

21 Brusten 1986.

be employed for such purposes, in so far as such investigations exist, they concentrate on the sentencing and the execution of sentences without paying closer attention to the profit aspect.²² One exception is a not so recent study, which also poses the question of the potential of fines to skim profits in the Federal Republic of Germany, prior to the introduction of the day-fine system.²³ However, to our mind, a perusal of empirical studies on the use of fines in countries whose criminal law contains no independent sanction designed to skim profits, can be expected to provide more meaningful insights. From the United States, we have an exploratory study which reveals that some courts impose amazingly high fines.²⁴ This could be due to the fact that, in the United States, fines are employed selectively in cases of white-collar crime and can be set in multiples of the profits attained. However, even in the United States, sanctions against assets have rarely been the subject of research in the field of criminology.

An alternative means of uncovering relevant research findings on the topic of criminal proceeds, is provided by studies bearing on specific forms of criminality. Possible offences or offence-categories where offenders are widely believed to reckon with high pecuniary benefits are white-collar crime, organized crime and illicit drug trafficking.

Nowadays, **white-collar crime** is surely no longer one of the neglected fields of criminology. In the Federal Republic of Germany, for example, extensive studies about the extent, structure and changes in white-collar crime and its control by the agencies of criminal prosecution, have been undertaken in recent years.²⁵ However, despite the fact that they are very detailed, most studies do not address the problem of profits or only do so incidentally.²⁶ A perusal of the body of criminological literature available from the United States, confirms this picture.²⁷ This observation is all the more surprising given the paramount significance ascribed to the realization of profits in market-economy systems.

In the light of this paucity of empirical findings, a study dedicated to the psychological motivation behind white-collar offences was initiated at the University of Bamberg. One of the aims of this particular study is to ascertain further criminal motives and motive structures involved in different white-collar offences beyond

22 Albrecht 1980; Fleischer 1983.

23 Breland 1975, p.110 et seq.

24 Hillsman, Sichel and Mahoney 1984, p.58.

25 Liebl 1984. This book also contains an international overview on p.2 et seq.

26 As is the case with Sickenberger 1985, p.283, who points to the utilization of sanctions aimed at sequestrating the profits of criminal activities.

27 Clinard and Yeager 1980, p.124 et seq.

the generally presumed motive of financial gain. The study is meant to contribute to reducing the existing uncertainties and information deficits which judges encounter, not only in sentencing but, above all, in considering extenuating motives.²⁸ So far none of the study's findings have been published.

Material is available on **organized crime** particularly from countries like Italy and the United States. Despite dissimilar approaches to definition, there is agreement on the fact that the attainment of economic power positions and the extremely high profits derived from them, constitute the essential objectives of organized groups of offenders.²⁹ The President's Commission on Organized Crime, set up in 1983 in the United States, has submitted a number of extensive reports which also contain empirically supported estimates of the income made by organized crime.³⁰

Among the different forms of organized crime special significance is assigned to **illicit drug dealing**, in particular the trafficking and smuggling of such drugs on an international level. In many countries, reports on the spread of such offences serve to legitimate demands and draft laws, the purpose of which is to reinforce and extend the instruments placed at the disposal of criminal law for the sequestration of profits. In remarkable contrast to the frequency and intensity of such endeavours is the lack of checkable empirical findings. In the Federal Republic of Germany, for instance, official statistics paint a multifaceted picture of the different aspects of the manner in which illicit drug trafficking is handled by the law enforcement authorities.³¹ It would, however, be in vain to seek data on the sequestration of the resultant profits which - according to a headword - constitutes the "third dimension" of drug control, alongside the punishment of the offenders and the destruction of the drugs themselves. By comparison, the authorities in the United States publish detailed reports on their enforcement successes.³² Different estimates of the profits gained by means of illicit drug trafficking also exist.³³ Even though it might be true for the United States that "narcotics is the most financially rewarding business in which organized crime is involved",³⁴ the more frequent application of sanctions to skim profits in recent years seems not to have changed this situation to any great extent. All the same, the governments of many countries deem the sequestration of profits to be an effective means of controlling the traf-

28 Liebel, Beierle and Reich 1987.

29 Rhodes 1984, p.19 et seq.; Stümper 1985; President's Commission 1986, p.29.; Kaiser 1988, p.372.

30 Fishman, Rodenrys and Schink 1986, p.422 et seq.; for a general review of the work of this Commission, see Lupsha 1987.

31 For a comprehensive presentation, see Albrecht 1987, p.123 et seq.

32 Drug Law Enforcement Strategy 1983, p.39 et seq.

33 For a comprehensive presentation, see Fishman, Rodenrys and Schink 1986, p.444 et seq.

34 Fishman, Rodenrys and Schink 1986, p.444.

ficking of illicit drugs. The benefits and costs of extending criminal law in this field require further investigation by future studies.

Another means of obtaining findings both on the profit issue and on the question of how and under which conditions profits, anticipated or realized, exert an influence on the planning and perpetration of crimes, consists of reviewing empirical findings generated by basic research in the social sciences and transferring them to the field of profit-motivated crime. The approaches which come into consideration here are very diverse and of varying meaningfulness. Gains and profits are economic variables and, although they are taken into account in social science disciplines other than economics, they have only been observed marginally there. For a number of reasons, economic theories are only able to mark out the frameworks within which more precise observation of the issue must be undertaken. On the one hand, the predominantly aggregative perspective of economic theories presumes a person-independent cost-benefit calculation approach whose result is then decisive for the conduct of economic subjects.³⁵ Since, as a result of this person-independent perspective, the quest for explanations behind criminal behavior focuses exclusively on situational factors, this aggregative way of looking at the situation is unsatisfactory from a criminological point of view. On the other hand, in cost-benefit calculations based on economic individual models,³⁶ quantities which are not economic variables but which can be seen, rather, as "gratuity" or behavior-theory oriented concepts of reinforcement, constitute factors of influence. Examples of this are the "cost" of loss of reputation in the event that the crime is detected, or the assessment of compliance with legal precepts as a cost factor.³⁷ A further reason why economic theories can do no more than stake out outline conditions, is the widely-discussed, implicit assumption that the conduct of the protagonists is rational.³⁸ From the criminological perspective, the assumption that criminals behave rationally is frequently looked upon with skepticism and enjoys only limited acceptance as a plausible subsidiary condition.

One of the approaches of basic research which is worthy of attention here, and which likewise demonstrates the relationship between mathematically formulated outline conditions (with frequently definable ideal solutions similar to the equilibrium solutions of economic models) and individually varying forms of these outline conditions, can be observed in the game theory.³⁹ On the one hand, the game theory serves to describe situations; on the other, it can be used as basis for

35 Becker 1974; Frank 1987.

36 Kunz 1976; Kerner 1986.

37 Kerner 1986.

38 Frank 1987.

39 Crott 1979, pp.123-124.

classifying persons according to their game strategy and/or the motives behind their actions in specific situations. According to a classification of profit motives introduced into the game theory, it is possible, for example, to distinguish between individualistic aims (maximization of personal gain), cooperative aims (maximization of the benefits for a group), rival-oriented aims (maximization of the difference between personal gain and that of the rival) in dealing with conflicts.⁴⁰ A form of depicting situations, which is based on game theory considerations, is that in which the agencies of criminal prosecution, offenders and victims act as agents according to different game strategies and are confronted with different profit situations. This form is expected to facilitate, for example, a more precise classification of offenders or even the description of changes arising in the profit situation by altering sanctions to skim gains.

The advantage of a game theory comprehension of situations lies in the fact that rational conduct can be described by means of orientation of the strategy of action towards optimal solutions; on the other hand there is room for less than optimal strategies, that is, strategies can be implemented whereby, for a number of reasons which are yet to be determined, the agents (offender/victim...) do not fulfill the criteria of rationality and thus render it impossible, for example, to recognize any maximization trend. This possibility opens up a more realistic perspective than that suggested by economic models.

A means of elaborating the framework worked out by economic criminality theories, by specifying individual factors (game strategies, decisional trends, venturesomeness...), is also offered, for example, by decision theories,⁴¹ or action theories.⁴² However, no attempt has been made thus far to transfer these approaches to the issue of gain derived from crimes.

Assuming that information is incomplete, **decision theories** are concerned with how decision-makers decide in favor of one of several alternative actions, in the event of uncertainty in given situations. The mathematical recording of the subjective reasons which underlie a decision, or vague suppositions at the moment of making decisions, have been taken into account especially by the Bayesians and the Subjectivists.⁴³ Their attempts to simulate rational, logical decisions under circumstances of uncertainty, are expected to be of significance for our present approach to the question. As concerns the attitude of the offender who is potentially affected by the sequestration of profits, a possible modification with respect to sanctions designed to skim profits could find expression in a modification of the probability that he will attain proceeds of his crime or illicit property gains. However, this

40 Deutsch 1973, pp.181-182.

41 See e.g. Raiffa 1973.

42 See e.g. Werbik 1978.

43 See Raiffa 1973.

probability should be seen as a conditional one which is preceded in time by the risk of detection and conviction. It is expedient to separate objective alterations in the chances of deriving gains from the subjective calculation made by the offender. Attempts to ascertain objective changes in this probability could, for example, be recorded by means of characteristics such as: the trend of the total sum forfeited over several periods; or via the sum forfeited in relation to the detected cases; or, again, by characteristics of a different type in which the scope of measures to deprive the offender of his profits are expressed. However, the subjective probability, that is, the individually calculated risk of a reduction in profits or of the latter's failure to materialize is also attributable to other factors. It is to be presumed that the subjectively perceived range of the activities of the agencies of prosecution and the perceived effectiveness of sanctions to skim profits deviate from their true range. Similarly, it is to be assumed that person-related factors have a strong influence on the way in which potential offenders make their calculations. These could consist, for example, of knowledge, compliance or learning processes which have been experienced as a result of earlier decision-making processes. Which factors really influence the materialization of subjective probabilities of making profit, is to a great extent unknown and merits more precise investigation.

3. The Freiburg study on proceeds of crime

What preventive effect an intensified application of sanctions to skim profits will have, remains controversial.⁴⁴ Given the increasing consideration which such measures are finding in the sentencing systems of different countries, as well as the lack of empirical findings in this respect, an **exploratory criminological study** on the origin and sequestration of crime-derived profits seems desirable.

Of interest is first of all the extension and identifiability of profit derived from crimes. If the major part of the registered criminality consists of property, fraud and similar offences, then it can be asserted that the enrichment of offenders is a common occurrence. However, in itself, this causes no specific problem; even in the case of fraud offences, the police may often content itself with being able to identify the offenders, their modes of operation and their victims. Specific difficulties arise only in the case of extensive crime complexes as are characteristic for forms of white-collar crime and organized crime. In such instances, on the one hand, assets will have to be identified and ascribed to specific offenders. On the other, a

44 For the Federal Republic of Germany see, inter alia, Kube 1987, p. 72 et seq.; Güntert 1983, p. 17.

distinction must be made as to which assets are derived from legal, and which from illegal activities.

It can be expected that the agencies of criminal prosecution will proceed differently, according to the competence and training of the staff. It is possible that civil servants who process only cases of white-collar criminality are capable of solving problems in connection with assets in a more systematic manner.

With regard to the application of the instruments at the disposal of criminal law in respect of the sequestration of profits, it is above all the question of the verifiability, but also problems of procedural economy which will arise. The more complicated the legal precepts, the more costly will be the corresponding investigations, but also the greater the incentive for the agencies of criminal prosecution to avoid applying these precepts. In particular, efforts must be undertaken to determine which sanctions are to be applied in which cases.

Another point of interest is cooperation among different authorities and agencies on the national and international level, which in some measure also includes banks and other private institutions.

Against this background, the following working hypotheses can be established:

1. The identification of profits derived from criminal activities implies specific difficulties, which lie essentially on two levels: that of determining assets and that of distinguishing between legal and illegal assets.
2. Systematic preliminary investigations with the aim of sequestering the proceeds of crime are an exception in the work of the agencies of criminal prosecution. The success of such investigations relies, to a considerable extent, on chance discoveries or the cooperation of the participants in a crime.
3. The members of the criminal prosecution staff are interested, first and foremost, in proving the guilt of criminal suspects. Interest in systematizing the sequestration of profits comes second to this concern.
4. The investigative activities of tax investigators are characterized by the fact that their work is mainly directed to claiming defrauded taxes and also by the fact that the detection of tax offences is of secondary importance.
5. In the case of offenders who are involved in illicit drug trafficking on a large scale, the interest in maximizing profits is predominant. Similarly, for the different forms of serious white-collar crime, the attainment of profits is the decisive motive for committing such offences.
6. Difficulties in identifying the proceeds of crime, considerations of economy in the activities of the agencies involved, and shortcomings in the field of legal precepts result in a more seldom application of sanctions designed to skim profits, compared with other sanctions in criminal law.
7. Sanctions designed to skim profits are imposed predominantly in simple cases. The sums which are successfully skimmed are small in comparison with the assets really in the possession of the offenders.

8. Cooperation among the agencies of criminal prosecution focusses principally on the conviction of suspects, and that among the revenue authorities, mainly at realizing claims to defrauded taxes. This also holds true for international judicial assistance.

Banks and other institutions of the private sector involved in financial transfers, are the addressees of coercive measures rather than voluntarily cooperative partners.

The research project will combine several methods including an **expert survey**, preferably of those persons who are responsible for the offence-categories: white-collar crime, organized crime and illicit drug trafficking. The survey is meant to ascertain the perspectives of five different agencies: the police, the customs investigation department, the bureau of investigation of tax offences, the public prosecutors' offices and the courts.

In the case of the criminal police, we intend to interview both lower-echelon civil servants and specialists from the Landeskriminalämter (State Offices of Criminal Investigation) who are responsible for difficult and extensive investigations. The customs investigation department is expected to provide, in particular, information on experience gleaned in the context of trans-frontier trade. The offices of the public prosecutor and the courts direct the application of criminal law.

Another perspective can be expected from a survey of civil servants from the offices concerned with the investigation of tax offences which form part of the fiscal administration. The instruments which they have at their disposal pursuant to fiscal law, differ fundamentally from those incorporated in criminal law. One aim will be to investigate whether these differences in legal precepts correspond to discrepancies in practical application.

Since the five sub-samples seem too dissimilar, five different versions of a questionnaire have been developed. In the process, however, efforts were made to find a high proportion of matching variables so as to ensure a far-reaching comparability of the results.

Altogether, 340 persons in the Southwest of the Federal Republic of Germany are to be interviewed.

This survey will be supplemented by an **analysis of 600 records of criminal proceedings**. In this case, a comparative study will be made of those proceedings in which the courts have imposed certain sanctions which skim profits, and such cases where it can be generally expected that the participants in the crime have derived profits from it.

As can be seen from the criminal prosecution statistics, the legal precepts relative to the sequestration of profits, embodied in German criminal law,⁴⁵ are very

45 The investigation of the case records refers to cases of forfeiture (§ 73 of the German Penal Code) and of a cumulative fine (§ 41).

rarely applied. This is why a complete census of the criminal proceedings in Baden-Württemberg and Hessen is intended.

In constructing the comparison groups, care must be taken that such proceedings in which there is a very strong probability that profit from crimes can be reckoned with are recorded with the greatest possible accuracy. For this purpose, proceedings from the fields of white-collar crime and narcotics criminality will be selected. However, these offence groups are too heterogenous to be grouped together if the findings are to be meaningful. Consequently, additional criteria need to be applied in selecting the relevant criminal proceedings.

For the field of white-collar crime, it would be natural to include such proceedings which are so complex, that the court divisions for business offences (Wirtschaftsstrafkammern) have been vested with a special jurisdiction for the purpose of dealing with them. However, no special jurisdiction exists for serious cases of illicit drug trafficking in the West German court system. However, from the special statutory definitions of offences contained in substantive criminal law, and from the statistics of the police, we can define the sample more precisely.

In addition to the experts' survey, and an extensive analysis of case records, **experimental verification** of the application of theoretical approaches borrowed from social science basic research, is intended in the Freiburg study at a later stage.

Still in the planning stage is experimental verification, in particular, of game theory considerations.

Sanctions which skim profits can be simulated in the form of reductions in the benefits accruing to the players, the reductions occurring with a probability which cannot be determined with accuracy. The chances of winning in the game are first increased by the choice of an illicit option, and finally reduced to zero by a risk which does not lend itself to accurate calculation.

A comparison of the playing behavior of the different groups of players, for example, white-collar offenders, and a group of persons from the normal population shows signs of being able to disclose factors which influence profit-motivated illicit behavior. This could also be achieved by the reverse comparison between persons who differ in the choice of options predetermined in the game situation.

Should a direct connection be established between potential profit from crime and an increase in crime, as is suggested by economic models, this should be reflected, according to game theory, in an increased choice of illicit options.

Should person-related factors prove to be the decisive factor of influence on profit-motivated behavior, this should be revealed by comparing the groups of players who behave differently.

The connection between modes of behavior in different game situations with likewise ascertained attributive variables, promises to enable the detection of additional interactions.

The attainment of profits through crimes and/or illicit activities, has previously been left out of account in the game theory.

4. Summary

In different countries, criminal law reforms are currently being initiated to facilitate the sequestration of the profits generated by crime. This is taking place using both the traditional sanction - fines - as well as new, independent forms of sanctions.

Although the sequestration of profits is already occasionally declared to be the third dimension of crime control, criminological research on this topic is still lacking. This report describes the conception and methods of an exploratory study on the profits derived from crime.

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4

Fear of Crime, Victimization and Hidden Crime

Factors Related to Fear of Crime

A Comparison of the Federal Republic of Germany and the United States¹

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1. Introduction

Since the President's Commission on Law Enforcement and Administration of Justice² issued its General Report 'The Challenge of Crime in a Free Society' in 1967, fear of and concern about crime has emerged as a public problem in the context of the discussion of crime as a national issue in the United States.³ Followed by Task Force Reports⁴ and supported by the rich material of the early Field Surveys,⁵ a debate was initiated in political circles and scientific communities alike which focused on the causes and consequences of fear of crime and how to reduce it.⁶ Conclusions of some have been as far reaching as to name fear of crime as serious a problem as crime itself.⁷ The impact of fear on the quality of individual and community life became and still is of direct concern for possible public policy with important social policy implications.⁸

1 Revised version of an article previously published in *International Journal of Comparative and Applied Criminal Justice* 11 (1987), pp.33-45. Reprinted by permission of the editor.

2 President's Commission 1967a.

3 Lewis and Salem 1986.

4 President's Commission 1967b.

5 Biderman et al. 1967, Ennis 1967, Reiss 1967.

6 See e.g. Garofalo 1981, Skogan et al. 1982, Skogan and Maxfield 1981.

7 See e.g. *Research and Forecasts 1980, Research and Forecasts 1983*, Skogan 1983.

8 Skogan 1983, Skogan 1986a, Skogan 1986b, Taub, Taylor and Dunham 1982, Taub, Taylor and Peterson 1986; for Europe see Mayhew 1985, Joutsen 1988.

Nowadays fear of crime is one of the topics on the victimological research agenda.⁹ Collective and individual reactions to and perceptions of victimization, including fear and related aspects as integral parts, are considered as central to the understanding of the whole process of victimization.¹⁰ Although fear of crime has been of interest to social scientists for over two decades and despite the fact that considerable research work has been done in the field of correlates of fear of crime, results are: inconclusive and far from unequivocal.¹¹ Notwithstanding some successful approaches toward theoretical conceptualization, a general theory in this area remains to be formulated.¹²

Most of the research has been done in the United States where fear of crime is both ubiquitous and a significant social problem. Unfortunately, the situation in other nations is only rarely examined, thereby missing the opportunity of recognizing common unifying factors.¹³

The purpose of this paper is to present the results of a comparative cross-cultural analysis of factors affecting fear of crime. To the author's knowledge, the findings presented in this paper are based on the results of the first pre-designed cross-cultural victimization survey undertaken with the specific intent of making a comparative analysis.¹⁴ The research was carried out in the states of Texas (United States) and Baden-Württemberg (Federal Republic of Germany).¹⁵

By way of introduction, it should be noted that, as victimology has continued to develop and grow within the discipline of criminology, increasing attention has

9 Dahmann and Sasfy 1980a, Dahman and Sasfy 1980b, Sasfy and Dahmann 1980, Mayhew 1985, Joutsen 1988.

10 See for a review DuBow, McCabe and Kaplan 1979, Skogan et al. 1982.

11 DuBow, McCabe and Kaplan 1979, Baumer 1978, Skogan 1986b, Skogan 1987.

12 Baumer 1985, Skogan 1986b, Taylor and Hale 1986.

13 Block 1984; see also Mayhew 1985, Joutsen 1988.

14 Teske and Arnold 1982, Arnold and Korinek 1985; see also Clinard 1978b, Sveri 1982 with reference to victim surveys; for a general discussion of problems associated with comparative research see also Peyre 1982 and Albrecht 1988; regarding the OECD efforts see OECD 1976 and Törnudd 1982.

15 The project includes a third survey that was carried out with the same methodology in the county of Baranya (southwest of Hungary, area surrounding the central city of Pecs). Results of that research are not reported in this paper; see Arnold and Korinek 1985, Korinek 1985, Arnold 1986, Arnold, Teske and Korinek 1988.

been given to the interrelationships of the victimization process. The concept of process is specifically emphasized as more attention has been focused on the dynamics of victimization. Originally, and with good reason, principal research focused on the identification of victims in order to calculate the "true rate of victimization." This is not to say, of course, that earlier writers such as von Henting (1948) and Schafer (1968) had not addressed the dynamics of the victimization process. Rather, it has only been within the last two decades that extensive empirical research has been undertaken in order to test various theories regarding this process. The most extensive work has been carried out by the Law Enforcement Assistance Administration under the title National Crime Survey.¹⁶ Other, similar projects have also been conducted in England, Scotland, Ireland, the Scandinavian countries, the Netherlands, Canada, Federal Republic of Germany,¹⁷ France, Switzerland, Australia and many other countries.¹⁸ And, fortunately, scholars have taken the initiative to utilize these and similar data and to extend them beyond the mere formality of reporting the empirical findings.¹⁹

It is reasonable to proffer, as well, that the empirical studies have tended to raise more questions than they have answered. Moreover, the findings are starting to provide a basis for the examination of longheld hypotheses regarding the victimization process, including the victim-offender relationship, victim characteristics, victim proneness, and factors related to fear of crime. The latter area, perhaps, has suffered the most theoretically since theoretical positions have had to be tested either by (1) using secondary analysis, or (2) studies which are very narrow and limited in their scope.²⁰

Moreover, in this regard, one key question which arises is whether or not the same factors affecting fear of crime in one cultural setting will serve effectively to explain fear of crime in another cultural setting. That is, are the factors which affect fear of crime universal or are they peculiar to each specific culture or society? This, then, was one of several specific questions which this cross-cultural victimization study was to address.²¹

16 See for example, Garofalo and Hindelang 1977, Lehnen and Skogan 1981, Sparks 1982, O'Brien 1985.

17 see Kirchoff and Kirchoff 1984 with a review of German victimization surveys; more in detail cf. Schwind et al. 1975, Stephan 1976, 1982, Schwind, Ahlborn and Weiß 1978, Rolinski 1980, 1986, Murck 1980, Schwind 1984, Plate, Schwinges and Weiß 1985, Pitsela 1986, 1988, Sessar 1988, Boers and Sessar 1989; with a critical evaluation of the state of the art of victim surveys and with a prospect Kaiser 1986; with regard to fear of crime including a comparative perspective see also Arzt 1976, 1979 and Kerner 1978, 1980, Reuband 1983.

18 See Arnold 1986, Arnold, Korinek and Teske 1988, Joutsen 1988, Zauberman 1985 and references below; most of these surveys also fear of crime as a topic.

19 See for example Clemente and Kleiman 1977, Sparks, Genn and Dodd 1977; Hindelang, Gottfredson and Garofalo 1978.

20 One of the more noteworthy exceptions to this position is the work by Skogan and Maxfield 1981.

21 Teske and Arnold 1982b.

2. Research procedure

Working together at the Max Planck Institute in Freiburg, Federal Republic of Germany, the researchers, with the assistance and advice of several members of the Max Planck Institute, developed a questionnaire and sampling procedure for conducting a survey in the State of Baden-Württemberg (population, approximately 9.3 million), and a statewide survey was carried out in the fall of 1981. The questionnaire and research procedures were predicated on a previous statewide victimization survey conducted in Texas (population, approximately 15.5 million in 1982) during 1980 by the senior author.²²

Simultaneously, the same questionnaire was constructed in English, with every effort made to assure that the questions conveyed the same meaning in both languages.²³ Subsequently, a revised English version of the questionnaire was used during 1982 for a statewide survey of Texas residents.²⁴

A systematic random probability sample of 3,830 residents was drawn from the list of names registered with the seven regional data centers in Baden-Württemberg (Regionales Rechenzentrum) and the two cities (Stuttgart and Mannheim) which maintain their own registration files. Individuals whose names were selected were sent a pre-survey postcard informing them of the purpose of the survey, followed eleven days later by a packet containing the questionnaire, a letter of explanation, and a stamped, return-addressed envelope. Three weeks later, all non-respondents were sent a followup letter, and again, at the end of six weeks, all non-respondents were sent a followup letter.²⁵ A total of 2,252 individuals returned completed, useable questionnaire. This represented a return rate of 58.8%. After adjusting for individuals who had moved, were deceased, or were too ill to participate, the adjusted return rate was 64.2%.

In Texas, a systematic random probability sample of 2000 names was drawn from the list of registered drivers in the state. These individuals were sent a pre-survey postcard, followed one week later by a packet containing the questionnaire, a letter of explanation, and a stamped, return-addressed envelope. Two weeks later, all non-respondents were sent a followup postcard. At the end of three weeks all non-respondents were sent another complete packet and, finally, at the end of

²² Teske and Moore 1980.

²³ Stressing the necessity of functional equivalence in comparative research see e.g. Peyre (1982); Arnold and Korinek 1985. Regarding this requisite, an excellent study was done recently by Krebs and Schuessler 1987 focusing on a comparison between Germany and the U.S. From a different point of view see also Albrecht 1988.

²⁴ Teske, Hazlett and Parker 1983.

²⁵ Thus, the procedure was similar to that described by Dillman (1978). For a discussion of the mail survey approach in victim surveys see Arnold 1986 and Arnold 1987 with further references; see also Tornudd 1982, Appendix.

five weeks, all non-respondents were sent another postcard. A total of 1,442 completed, useable questionnaires were returned. This represented a return rate of 72,1 % of the original sample. After adjusting for non-forwardables and deceased individuals the adjusted return rate was 75,5 %.

3. The dependent variable: fear of crime

Any scholar who has struggled with the concept fear of crime most assuredly has become quite frustrated.²⁶ Within the field of victimology fear of crime is, undoubtedly, one of the most difficult areas to research.²⁷ It is exceedingly difficult to measure since it may be conceptualized in a number of divergent ways, including: (1) the individual's objective awareness of crime; (2) the individual's perception of the crime problem (both locally and at large); (3) overt restrictions on behavior; (4) internalized fear which, nevertheless, does not serve to alter or restrict behavior; (5) expressed objective concerns regarding crime; and (6) expressed probability of personal victimization. There are, of course, other facets of the concept fear of crime. The ones cited here are those most often encountered in the literature and/or addressed in the research.²⁸

At the same time, a general consensus seems to have developed regarding the use of fear of being out alone at night as a means of operationalizing fear of crime. The National Victimization Surveys, for example, consistently measured fear of crime by asking: "How safe do you feel or would you feel being out alone in your neighborhood at night"? The four response categories were very safe, reasonably safe, somewhat safe, and very unsafe.²⁹ More recently, Skogan and Maxfield (1981) used this question as their indicator of fear of crime in their study. Others, such as Clemente and Kleiman (1977) have varied the question slightly asking, for example, "Is there any area right around here - that is, within one mile -- where you would be afraid to walk alone at night"? The response choices were dichotomized as either yes or no. And, although there have been some additional slight modifi-

26 Kellens 1986.

27 See e.g. DuBow, McCabe and Kaplan 1979, Skogan 1986b.

28 DuBow, McCabe and Kaplan 1979: for Germany, see, e.g., Gefeller and Trudewind 1978, Kerner 1980, Arnold 1988.

29 Garofalo 1977, pp. 18-19, 128. Recently, Boers and Sessar (forthcoming) used this indicator, too, in their victim survey in Hamburg (Germany).

cations of the phrasing of the question, most studies focusing on fear of crime have continued to use this approach.³⁰

Therefore, the researchers decided to use two variations of this construct which had been consistently utilized in previous Texas Crime Poll surveys conducted by the Survey Research Program at Sam Houston State University's Criminal Justice Center.³¹ Specifically, fear of crime was operationalized by asking two questions: (1) "Is there any area within one mile of your home where you would be afraid to walk alone at night?" ("Gibt es im Umkreis von einem Kilometer von Ihrer Wohnung einen Ort, an dem Sie sich fürchten würden, nachts allein spazieren zu gehen?"), (2) "Would you be afraid to walk alone within one block of your home at night?" ("Würden Sie sich davor fürchten, nachts allein im Umkreis von 100 Metern von Ihrer Wohnung spazieren zu gehen?"). The purpose of using two separate questions focusing on the same phenomenon was to allow the researchers to control for relative distance from the respondent's place of residence, that is, to examine whether or not the same factors were related to fear of walking in close proximity to one's home compared to walking alone at some distance from one's home. The distribution of responses to the questions representing the dependent variables are presented in Table 1.

4. Independent variables

Two variables related to fear of crime have become so commonplace in the literature that there is no necessity to cite various sources.³² Simply stated, sex and to a less degree age have been consistently found to have a relationship to fear of walking alone at night. Several additional independent variables used in the analysis were taken from a model developed by Garofalo for explaining fear of crime (1979). Specifically, Garofalo, in addition to sex and age, has suggested that the following variables be entered into any model designed to account for variations in fear of crime:

³⁰ The General Social Survey (GSS) conducted in the U.S. by the National Opinion Research Centre (NORC) used this item since 1965; see OECD 1982, p. 100.

³¹ For a complete discussion of the research procedures and development of the Texas Crime Poll see Teske, Hazlett and Parker 1982.

³² See e.g. Baumer 1978; DuBow, McCabe and Kaplan 1979. With regard to the age as a leveler hypothesis and interaction effects with the age variable, see recently Ortega and Myles 1987.

Table 1: Distribution of responses to the questions regarding fear of walking alone at night*

	Within One Mile (One Kilometer)	
	Texas	Baden-Württemberg
Percent Afraid	58.3	44.4
Percent Not Afraid	41.7	55.6
Total	100.0	100.0

	Within One Block (100 Meters)	
	Texas	Baden-Württemberg
Percent Afraid	23.0	17.3
Percent Not Afraid	77.0	82.7
Total	100.0	100.0

* The percentages are based on the number responding to the questions since these were included in the development of the models. Twenty-one (1.5 %) of the Texas respondents did not answer the question regarding fear of walking alone within one mile and 17 (1.3 %) did not respond to the question regarding fear of walking alone within one block. In the Baden-Württemberg survey, 29 (1.3 %) did not answer the question regarding fear of walking alone within one kilometer at night, and 26 (1.2 %) did not respond to the question regarding fear of walking alone within 100 meters of their home at night.

(1) evaluation of local police; (2) the media; (3) total personal victimizations; (4) comparative neighborhood danger, (5) income, and (6) race: Unfortunately, like Garofalo, the researchers did not address the issue of the media comparatively since there were no means for doing so within the context of this research.³³ However, although slightly modified with regard to construction, each of his five other variables were examined in this study. Finally, the researchers included one additional independent variable which is rather seldom addressed in studies of fear of crime-community size.³⁴

In summary, the eight variables which served as the independent variables for the development of a model were as follows.

1. Sex-male or female.

2. Age-at the time of completing the questionnaires.

3. Evaluation of the effectiveness of the local police, measured by asking: "How would you rate the job being done by the police department in your community?" ("Wie würden Sie die Arbeit der Polizei in Ihrer Gemeinde einschätzen?") The four response categories provided were: (a) excellent (ausgezeichnet), (b) good (gut); (c) fair (ausreichend); and (d) poor (unzureichend).

4. Victimization - a dichotomous variable in which the respondent was scored as having been the victim of at least one of the following crimes during the previous year: burglary and attempted burglary (Einbruch); motor vehicle theft and attempted motor vehicle theft (Kraftfahrzeugdiebstahl), other theft (sonstige Diebstähle); robbery (Raub); assault with weapon (tätlicher Angriff mit Waffe/Gegenstand); rape or attempted rape (Vergewaltigung); arson or attempted arson (Brandstiftung), and vandalism (Sachbeschädigung). It should be noted that a careful evaluation was made scoring the respondents with regard to the total number of victimizations experienced during the previous year, as well as whether they had experienced a property crime victimization or a personal crime victimization. Based on the evaluation, it was determined that the most effective approach was simply to dichotomize each respondent as to whether or not they had been a victim.

³³ A simple measure was included in the German survey; see Arnold 1986, Table 2, p.1023; cf. the operating model in Skogan and Maxfield 1981, p.17.

³⁴ As have been mentioned, most victim surveys in Germany were local surveys, therefore the effect of community size could not be tested; an exception was Murck 1980. In the U.S., too, many victim surveys were carried out on a neighborhood level or were city studies; for urban vs rural or community effects see, e.g. Kennedy and Krahn 1986, Akers et al. 1987.

5. Comparative neighborhood danger was measured by asking the respondents: "Over the past three years, do you feel that the crime problem in your community is": ("Glauben Sie, daß das Kriminalitätsproblem in Ihrer Gemeinde über die letzten drei Jahre:") The response categories were: (a) getting better (besser geworden ist), (b) about the same (gleich geblieben ist); and (c) getting worse (schlimmer geworden ist). No significant differences was observed with respect to the fear of being out alone at night between those respondents who said that the crime problem had become better or that it had stayed about the same. Therefore, these two categories were collapsed and a dichotomous variable was created.

6. Community Size was measured in Texas by asking respondents to select one of nine categories which represented the size of their town or city. The category "rural area" was included as one of the nine. In the Baden-Württemberg survey there were seven categories listed, with the upper category being "over 100,000". For comparative purposes, the upper categories in Texas were collapsed into one category representing 100,000 or more population. Thereby, the seven categories for each survey were very similar in their distribution.

7. Income was measured in the Texas survey by asking respondents: "What is your yearly family income?" Seven response categories were provided. The survey in Baden-Württemberg asked: "What is the approximate total monthly net income of your household?" ("Wie groß ist ungefähr das gesamte monatliche Nettoeinkommen Ihres Haushaltes - nach Abzügen, für alle Erwerbstätigen.") Unfortunately, the upper level income categories listed in the Texas survey covered a much broader range than did those in Baden-Württemberg survey and, therefore, the data were not exactly comparable. At the same time, an assessment of the relative influence of family income was still possible.

8. Race. Whereas no difference was observed between Whites and Hispanics with regard to fear of being out alone at night, these two categories, along with the category of other race or ethnic groups, were collapsed and a dichotomous variable was created consisting of the categories of Black and non-Black. This variable was analyzed only with respect to the Texas data (see below).

5. Analysis of the data

The researchers decided to use a multiple-regression technique in order to develop a model for identifying those factors which would be best serve to predict

fear of crime in each country. And, since both of the constructs designed to measure fear of crime were dichotomous variables, that is, they consisted of nominal data, the researchers decided to use the discriminant analysis statistical technique.³⁵

Tables 2 and 3 present the results of the initial stepwise discriminant analysis. Wilk's Lambda was used as the test for examining the statistical significance of each of the independent variables in relation to the dependent variable. With respect to fear of walking alone within one mile (one kilometer) of one's home at night, four variables in both Texas and Baden-Württemberg were significantly related to the dependent variable: (1) sex; (2) community size; (3) perception of the crime problem, and, (4) perceived effectiveness of the local police. Having been the victim of at least one crime was significantly related in Texas, but not in Baden-Württemberg.³⁶ Family income and age were not significantly related to the dependent variable in either Texas or Baden-Württemberg. The finding, with regard to both sets of data, that age is not significantly associated with the fear of crime variables, certainly runs counter to the generally accepted assumption that age and fear are associated. Therefore, the researchers gave special attention to this anomaly in order to ascertain whether this was the result of some factor peculiar to this specific study. First, the data were examined in order to determine if there existed, perhaps, a curvilinear relationship between age and the fear indicators. None was found. Secondly, age was dichotomized at several different points and the relationship examined. None was found. Thirdly, age was grouped into five year intervals and ten year intervals. This provided no additional insight. Also, the descriptive statistics for age were examined. The means for both samples were very similar,³⁷ as were the standard deviations.³⁸ In both cases, the distributions were positively skewed³⁹ and relatively flat.⁴⁰

A review of the literature revealed that other researchers had also observed situations in which age was not significantly associated with fear of crime. Baumer (1985:4), for example, has observed that "... there is some evidence that age affects fear only under certain circumstances". Of particular interest is his observation regarding the vulnerability hypothesis,⁴¹ that is, "... with increasing age, men

35 With a similar analysis see Toseland 1982 and Gomme 1986; see also Vinson and Anthony 1985, Chapter 12.

36 Teske and Arnold 1982c, Arnold 1988; see Arnold 1984 and Arnold 1989 with a more sophisticated approach, using a probability modeling method to test for interaction effects and thereby showing some interesting aspects of the different impact of victimization experiences.

37 Texas, $X=42.02$; Baden-Württemberg, $X=44.33$.

38 Texas, $s=15.61$; Baden-Württemberg, $s=16.93$.

39 Texas, skewness=.543, Baden-Württemberg, skewness=.387.

40 Texas, kurtosis=.620, Baden-Württemberg, kurtosis=.829.

41 See Maxfield 1984.

Table 2: Fear of walking alone within one mile [one kilometer] of home at night: Wilk's Lambda (U-Statistic) and univariate F-ratio

Variable	Texas		
	Wilk's Lambda	F	Significance
Sex	.855	220.00	.001
Community Size	.943	78.21	.001
Perception of the Crime Problem	.976	32.12	.001
Perceived Effectiveness of Local Police	.993	9.37	.002
Victim of at Least One Crime	.995	6.45	.011
Family Income	.999	.19	.663
Age	.999	.06	.815
Race	.997	3.87	.050

8 variables; N = 1300; DF = 1 and 1298

Variable	Baden-Württemberg		
	Wilk's Lambda	F	Significance
Sex	.805	489.30	.001
Community Size	.967	68.81	.001
Perception of the Crime Problem	.975	51.62	.001
Perceived Effectiveness of Local Police	.996	7.66	.006
Victim of at Least One Crime	.999	.71	.398
Family Income	.999	1.02	.314
Age	.999	.90	.344
Race	.NA	.NA	.NA

7 variables; N = 2024; DF = 1 and 2022

Table 3: Fear of walking alone within one block [100 meters] of home at night: Wilk's Lambda (U-Statistic) and univariate F-ratio

Variable	Texas		
	Wilk's Lambda	F	Significance
Sex	.876	183.40	.001
Community Size	.980	25.83	.001
Perception of the Crime Problem	.989	14.20	.001
Perceived Effectiveness of Local Police	.995	6.27	.012
Victim of at Least One Crime	.996	4.85	.029
Family Income	.995	6.40	.011
Age	.999	.45	.499
Race	.996	4.81	.028

8 variables; N = 1298; DF = 1 and 1296

Variable	Baden-Württemberg		
	Wilk's Lambda	F	Significance
Sex	.907	207.60	.001
Community Size	.992	16.40	.001
Perception of the Crime Problem	.994	12.26	.001
Perceived Effectiveness of Local Police	.999	2.70	.101 (.064)*
Victim of at Least One Crime	.999	.13	.721
Family Income	.996	7.12	.008
Age	.999	.40	.527
Race	.NA	.NA	.NA

7 variables; N = 2020; DF = 1 and 2018

* When the data were entered into the model using only 5 variables the level of significance for this variable changed from .101 to .064

become physically more vulnerable to predatory crimes, and thus, report higher levels of fear" (Baumer 1985:13). Moreover, based on the findings from a national sample, he concluded that: "The effect of age varied both by size of place and sex. This variable had its strongest impact in urban areas and for men" (Baumer 1985:17).⁴² Therefore, the researchers examined the data from both samples, controlling for males only in communities of 100,000 population or greater. The findings, though not conclusive, were noteworthy. With regard to Texas, fear of walking alone at night and age were related, though not quite at the .05 level.⁴³ At the same time, with regard to fear of walking alone within one block no significant relationship was found. The obverse was found with regard to Baden-Württemberg. Although fear of walking alone within one kilometer was not significantly related to age, fear of walking alone within 100 meters approximated the .05 level of significance.⁴⁴

Lebowitz (1975), utilizing data from a 1973 representative national sample, did not find a direct relationship between age and fear of crime. However, when he controlled for the size of the community of residence, he found that the elderly living in urban areas were much more fearful. Therefore, the researchers controlled for community size in both samples, examining the relationship between fear and age for cities of 100,000 residents or more. Even with this control, no significant relationships between age and the fear variables were observed - in either sample.

More recently, Maxfield (1984b) observed that in neighborhoods where everyone is more afraid, when compared to other neighborhoods, age is not a significant factor for explaining variations in fear of crime. Moreover, he noted that "... perceptions of crime and other problems are more important than age as a measure of physical vulnerability in accounting for fear of crime in those neighborhoods where a large proportion of residents believe crime to be a problem" (1984b:247). In order to examine this perspective, the researchers controlled for the question regarding perception of the crime problem in the respondents community, that is, those who thought that the crime problem during the previous three years had stayed about the same or had become better, and those who thought that it had become worse. Only in Texas, when controlling for those who thought that the crime problem had stayed about the same or was better, was a significant relationship observed between age and fear of walking alone within one block of home at night.⁴⁵

Race (Black/non-Black), which was included only in the Texas analysis, was found to be significantly related to the dependent variable.

42 Cf. Ortega and Myles 1987.

43 Wilk's Lambda=.988; F=3.41; n=290 and, p=.066.

44 Wilk's Lambda=.967; F=3.13; n=1019; and, p=.077.

45 Wilk's Lambda=.992; F=4.15; n=544; and, p=.042.

With regard to fear of crime walking alone within one block (100 meters) of one's home at night, five variables were found to be significantly related to the dependent variable in both Texas and Baden-Württemberg: (1) sex, (2) community size, (3) perception of the crime problem, (4) perceived effectiveness of the local police, and, family income. Regarding the Baden-Württemberg data, although the level of significance of the variable "perceived effectiveness of the local police" ($p=.064$) exceeded the generally accepted standard of .05, the researchers were of the opinion that the variable should be retained in the model. This decision was based on two principal factors. First, the relative contribution of the variable, based on the ordering in the models, was very similar for both Texas and Baden-Württemberg. Secondly, the level of significance, .064, barely exceeded the .05 probability level and review of the other variables indicated that this was the only independent variable which marginally exceeded the .05 level of significance.

Having been a victim of at least one crime was significantly related in Texas, but not in Baden-Württemberg. Age was not significantly related in either Texas or Baden-Württemberg and race was significantly related to the dependent variable in Texas.

Next, discriminant models were calculated using only those variables which were found to be significantly related to the dependent variable in both Texas and Baden-Württemberg. The ordering of the variables, using the direct method, as well as their relative contribution, based on the pooled within group correlations, are presented in Tables 4 and 5. And, the relevant results of this approach are presented in Tables 6 and 7.

Regarding fear of walking alone within one mile (one kilometer) of one home at night, the four variables entered into each model accounted for 20.2 % of the variation in Texas and 24.4 % of the variation in Baden-Württemberg. Moreover, having accounted for 20.2 % and 24.4 % of the variation, respectively, these four variables served to correctly classify 70.7 % of the cases in the Texas sample and 71.7 % of the cases in Baden-Württemberg sample.

Regarding fear of walking alone within one block (100 meters) of one's home at night, the five variables entered into each model accounted for 16.1 % of the variation in Texas and 10.8 % of the variation in Baden-Württemberg. And, having accounted for 16.1 % and 10.8 % of the variation, respectively, these five variables served to correctly classify 69.4 % of the cases in the Texas sample and 62.5 % in the cases in the Baden-Württemberg sample.

Table 4: Discriminant analysis (direct method) of factors related to fear of walking alone within one mile [one kilometer] of home at night

Texas		
Independent Variable	Order*	Pooled Within Group Correlations
Sex	1	.791
Community Size	2	-.458
Perception of the Crime Problem	3	.288
Perceived Effectiveness of Local Police	4	-.147

Baden-Württemberg		
Independent Variable	Order*	Pooled Within Group Correlations
Sex	1	.855
Community Size	2	-.312
Perception of the Crime Problem	3	.280
Perceived Effectiveness of Local Police	4	-.110

* Ordered by the function with the largest correlation and the magnitude of that correlation.

Table 5: Discriminant analysis (direct method) of factors related to fear of walking alone within one block [100 meters] of home at night

Texas		
Independent Variable	Order*	Pooled Within Group Correlations
Sex	1	.856
Community Size	2	-.322
Perception of the Crime Problem	3	.238
Family Income	4	.161
Perceived Effectiveness of Local Police	5	-.159

Baden-Württemberg		
Independent Variable	Order*	Pooled Within Group Correlations
Sex	1	.915
Community Size	2	-.248
Perception of the Crime Problem	3	.221
Family Income	4	.177
Perceived Effectiveness of Local Police	5	-.118

* Ordered by the function with the largest correlation and the magnitude of that correlation.

Table 6: Results of discriminant analysis (direct method) of factors related to fear of walking alone within one mile [one kilometer] of home at night*

	Texas	Baden-Württemberg
N Size	1383	2113
Canonical Correlation	.450	.494
Explained Variation	20.2%	24.4%
Wilk's Lambda	.798	.756
Chi-Squared**	311.68	589.96
Significance***	.001	.001
Percent Correctly Classified	70.72%	71.65%
Maximum Chance Criterion****	58.3%	55.6%
Proportional Chance Criterion****	51.4%	50.6%

* The results are based on four independent variables: sex; community size; perception of the crime problem; and, perceived effectiveness of the local police.

** With 4 degrees of freedom.

*** Exceeded .00001.

**** see footnote 46.

Table 7: Results of discriminant analysis (direct method) of factors related to fear of walking alone within one block [100 meters] of home at night*

	Texas	Baden-Württemberg
N Size	1301	2024
Canonical Correlation	.401	.329
Explained Variation	16.1%	10.8%
Wilk's Lambda	.839	.892
Chi-Squared**	227.65	231.32
Significance***	.001	.001
Percent Correctly Classified	69.41%	62.49%
Maximum Chance Criterion****	77.0%	82.7%
Proportional Chance Criterion****	64.6%	71.4%

* The results are based on five independent variables: sex; community size; perception of the crime problem; family income; and, perceived effectiveness of the local police.

** With 5 degrees of freedom.

*** Exceeded .00001.

**** see footnote 46.

The researchers then reentered the variables of victimization and race into both of the Texas models since these variables had been found to be significantly associated with the dependent variables. With regard to the dependent variable of fear of walking alone within one mile, based on the pooled within group correlations, both of the additional variables contributed the least to the model (victimization, $-.109$, race, $.099$). More importantly, they had minimal effect on the amount of explained variation (20.3 % compared to 20.2 %) and contributed only an additional .43 % to the capability of the model to correctly classify cases (71.15 % total compared to 70.72 %).

When both race and victimization were added to the five variables predicting fear of walking alone within one block in Texas, again, both variables contributed the least to the model (victimization, $-.137$, race, $-.150$). Moreover, as in the case of the other model, the addition of these variables had minimal effect on the amount of explained variation (16.4 % compared to 16.1 %) and contributed only an additional .08 % to the capability of the model to correctly classify cases (69.49 % compared to 69.41 %).⁴⁶

6. Explaining differences in levels of fear

Although not the primary focus of this paper, the question obtains as to why the respondents in Texas are relatively more fearful than the respondents in Baden-Württemberg. As illustrated in Table 1, 13.9 percent more respondents to the Texas survey (58.3 %) said that they are afraid to walk alone within one mile (one kilometer) of their home at night than did respondents to the Baden-Württemberg survey (44.4 %). Moreover, 5.7 percent more Texans (23.0 %) said that they are afraid to walk alone within one block (100 meters) of their home at night than did respondents to the Baden-Württemberg survey (17.3 %). Therefore, using the information obtained from the development of these two models, it is possible to offer at least a preliminary explanation for these differences in level of fear.

Table 8 presents information regarding each of the salient variables. As indicated, there was no significant difference in the sex distribution of the respondents

⁴⁶ The effect of the PRIORS = specification (prior knowledge of the sample/population distribution of cases) and its relation to the maximum chance criterion and the proportional chance criterion regarding the predictive strength or discriminating power of a discriminant analysis are not discussed here. Critically, it has to be mentioned that regarding the maximum chance criterion and the proportional chance criterion, the hit-ratio, i.e. the percent correctly classified, is good for 'fear within one mile (kilometer)' in both samples but rather weak for 'fear within one block (100 meters)' which shows only one acceptable value compared to the proportional chance criterion for the Texas data; see Table 6 and 7. In addition, no cross-validation approach is used here; cf. Vinson and Anthony 1985, chapter 12.

Table 8: Comparison of selected descriptive statistics from the Texas and Baden-Württemberg samples (%)

Variable	Baden-Württemberg	Texas
Sex		
Male	49.8	51.0
Female	50.2	49.0
Total	100.0	100.0
Chi ² = .45 p < .504 df = 1		
Community Size		
Over 100,000	15.4	43.8
Up to 100,000	84.6	56.2
Total	100.0	100.0
Chi ² = 360.59 p < .001 df = 1		
Perception of the Crime Problem		
Better/About Same	68.0	38.7
Worse	32.0	61.3
Total	100.0	100.0
Chi ² = 302.07 p < .001 df = 1		
Perceived Effectiveness of the Local Police		
Excellent	2.5	9.0
Good	38.1	43.3
Fair	45.3	35.8
Poor	14.2	11.8
Total	100.1	99.9
Chi ² = 101.23 p < .001 df = 3		
Victim of at Least One Crime		
Victim	19.3	35.0
No Victim	80.7	65.0
Total	100.0	100.0
Chi ² = 114.29 p < .001 df = 1		
Family Income		
More Than \$ 15,000 Annually (More Than 2500 DM Monthly Net)	66.8	85.2
\$ 15,000 Or Less Annually (2500 DM or Less Monthly Net)	33.2	14.8
Total	100.0	100.0
Chi ² = 145.31 p < .001 df = 1		

in the two samples. In other words, approximately the same proportions of males and females responded in both surveys, and therefore, it is very unlikely that this variable would serve to explain the observed differences in degree of fear among the two populations. The next variable, however, provides relevant insight since respondents in Texas were much more likely to list their community size as 100,000 or greater. In fact, only 15.4% of the respondents in Baden-Württemberg indicated that they live in a community with a population of 100,000 or more, whereas 43.8% of the respondents in Texas indicated that they live in a community with a population of 100,000 or more.

The survey in Texas asked the respondents to indicate the population of their town or city. Nine categories were provided, including "rural area." The survey in Baden-Württemberg asked the respondents to indicate the population of their *Gemeinde*, a geographical political entity which, in the less populated areas, encompasses the surrounding rural area and, on occasion, may include several small villages. Seven response categories were provided.

The response categories in both surveys were similar, but varied slightly, primarily for the purpose of accommodating the statistical categories used for reporting population size in Baden-Württemberg. Therefore, the most valid means for making a direct comparison is to dichotomize the categories into less than 100,000 and greater than 100,000. Nevertheless, it should be recognized that the researchers relied on each respondent's estimate of his or her community size and, therefore, there may be some discrepancy between the estimate and the actual population size. This is evidenced by the fact that the official census data for Texas indicate 40.3 percent of the population lived in a city of 100,000 or more population in 1980, compared to 43.8 percent of the respondents who said that they lived in a city of this size.⁴⁷ Similarly, whereas 15.4 percent of the Baden-Württemberg respondents indicated that they lived in a *Gemeinde* with a population of 100,000 or more, the official statistics for 1981 indicated that 19.3 percent of the population lived in a *Gemeinde* of 100,000 or more population.⁴⁸ Whether these discrepancies are due to estimation errors by the respondents, a tendency for individuals from certain sized communities to respond to the surveys, or sampling error, is not certain. Nevertheless, the relative differences in community size in Texas and Baden-Württemberg, whether one relies on the respondent's estimates, or the official statistics, is significant and supports the position that this variable may serve to explain, at least in part, the observed differences in levels of fear.

Since community size was the second most significant factor for predicting fear of crime this may very well help to account, in part, for the greater level of fear

47 Kingston 1984.

48 Statistisches Landesamt 1982; see also Arnold 1987 with an analysis.

among the Texas respondents. Similarly, the Texans were almost twice as likely to respond that the crime problem in their community had become worse during the previous three years than were the Baden-Württemberg respondents (61.3 % vs. 32.0 %).

The next variable presents somewhat of an anomaly. The authors, intuitively, had originally assumed that the respondents in Baden-Württemberg would probably rate the police in their community as being more effective than would the respondents in Texas, due to the lower crime rates, greater professional status of the police as an occupation in Germany, and the relatively higher clearance rates. However, the results were the opposite of these expectations. Therefore, since perceived effectiveness of the police is a significant factor in both modes, it would follow that this variable would serve to mitigate the levels of fear, accounting for a slightly increased degree of fear in Baden-Württemberg and a comparatively diminished degree of fear in Texas.

Having been the victim of at least one crime was statistically significant in Texas, but not in Baden-Württemberg. Whether this was due to the greater frequency of victimization in Texas cannot, of course, be answered by these data. Nevertheless, since this variable was found to be a significant factor in Texas, the difference in levels of victimization may help to account, at least partially, for the higher levels of fear among the Texans. Specifically, the Texas respondents were almost twice as likely to report having been the victim of a crime during the previous twelve months than were the Baden-Württemberg respondents (35.0 % v. 19.3 %). It is also worthy of note that the ratio of survey respondents who were victims of at least one crime corresponds almost exactly to the ratio of reported victimizations, based on the rate of crime per 100,000, as recorded in the official police statistics, that is, 1.84:1 for the former and 1.81:1 for the latter (see Table 9). In other words, based on officially reported crimes, residents of Baden-Württemberg were almost twice as likely to be the victim of an index crime during 1982 as were residents of Texas.

It should be noted that the crime categories used to calculate the percentage of victims based on the surveys do not correspond exactly with the Uniform Crime Reporting Program's index crimes. Nevertheless, it is noteworthy that the ratios are very similar. For heuristic purposes, it is also noteworthy that only 2.6 percent of the Baden-Württemberg respondents indicated that they had been the victim of at least one violent crime during the preceding twelve months, whereas 6.3 percent of the respondents to the Texas survey indicated that they had been the victim of at least one violent crime during the previous twelve months.⁴⁹

⁴⁹ For a complete discussion of a procedure developed for the purposes of comparing the Uniform Crime Reporting Program's index crimes with crime data in the Federal Republic of Germany, see Teske and Arnold 1982a.

Table 9: Summary of index crimes: 1981

Crime	Baden-Württemberg*		Texas**	
	Number	Rate per 100,000	Number	Rate per 100,000
Murder and non-Negligent Homicide	165	1.8	2,438	16.5
Forcible Rape	1,139	12.3	6,816	46.2
Robbery	3,178	34.3	28,516	193.3
Aggravated Assault	8,374	94.1	40,673	275.7
Burglary and Larceny Theft	271,121	2,923.1	729,862	4,946.5
Motor Vehicle Theft	24,868	268.1	83,244	564.2
Total Violent Crime	13,216	142.5	78,443	531.6
Total Property Crime	295,989	3,191.2	813,106	5,510.7
Total Crime Index	309,205	3,333.7	891,549	6,042.4

* Source: **Polizeiliche Kriminalstatistik des Landes Baden-Württemberg: 1981**. The calculations are based on an estimated population of 9,275,032.

** Source: **Crime in Texas: Calendar Year 1981**. The calculations are based on an estimated population of 14,755,000.

The last variable which may provide some insight is family income, which was a significant variable with respect to walking alone within one block (100 meters) of one's home at night. The data from both samples were dichotomized at approximately the same level of income, that is, more than \$15,000 annual income (Texas sample) and more than the 2500 DM net monthly income (Baden-Württemberg sample). Based on the exchange at the time surveys were conducted, these amounts are approximately equivalent in buying power. Whereas a lower income level was found to be associated with increased fear, this variable, as in the instance of the rating of police effectiveness would appear to serve to diminish the level of fear among the Texas sample and to account for a greater level of fear among the Baden-Württemberg sample.

7. Summary and conclusions

The findings presented in this paper are the result of a pre-designed victimization survey in two countries, representing two different western cultures. The key question addressed was whether or not the same factors operate in both cultures to explain fear of crime. If so, it would be reasonable to postulate that the factors affecting fear of crime are universal in nature - at least, with respect to Western cultures.

Based on the findings from this study, it is reasonable to conclude that several variables have approximately the same effect on fear of crime, and that the variables account for approximately the same amount of explained variation. Moreover, the predictive value of these variables is almost identical. In addition, although race and victimization are significantly associated with the dependent variable fear of crime, in Texas and not in Baden-Württemberg, nevertheless, they are not crucial variables and contribute little, or nothing, to the model with respect to the capability of explaining and predicting fear of crime.

In addition, several of these variables may serve to provide a preliminary explanation for observed differences in the degree of fear in both cultures. The fact that, overall, Texans are much more likely to live in a community with a larger population size, as well as the fact that Texans are significantly more likely to perceive that the crime problem in their community has become worse during the previous three years, provides significant insight into why Texans are significantly more afraid to be out alone at night within a mile (one kilometer) of their home, or even within one block (100 meters) of their home. Moreover, Texans in general, are almost twice as likely to have been the victim of a crime during the previous year as are residents of Baden-Württemberg, and this may, in part, contribute to increased

levels of fear of crime in Texas, if not in Baden-Württemberg. At the same time, two variables intervene and, to some degree, may mitigate the degree of differences in observed levels of fear, that is, residents of Baden-Württemberg tend to rate their local police lower on effectiveness than do Texans and, at least with regard to fear of being out alone within a block (100 meters) of one's home at night, respondents to the Baden-Württemberg survey are more likely to report being in a lower income category than are respondents to the Texas survey.

There are, of course, additional variables which may serve to explain fear of crime within both cultures, as well as the differences in levels of fear between the cultures. This study, for example, did not address the influence of the media on fear of crime. Nor did the study address the question of cultural homogeneity or the effect of confidence in other aspects of the criminal justice system.⁵⁰ Nevertheless, the findings from this research do serve to support the position that the same factors are operating with approximately the same degree of influence in both cultures and, in doing so, provides us with a preliminary explanation for the observed differences between the two cultures in levels of fear of crime.

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Criminal Victimization of Foreign Minorities in the Federal Republic of Germany

Results of a Victim Survey with Particular Reference to the Greek Population Group in Stuttgart

Angelika Pitsela

1. Introduction

Criminological research on foreigners has been dominated to date by a one-sided approach to crime and criminals. Foreigners who have been victims of crime have hitherto received little empirical attention having merely been observed incidentally within the scope of comprehensive victim surveys among Germans.¹ Yet, in the relevant literature, foreigners and immigrants are regarded as a highly imperiled population group exposed to a relatively high risk of becoming the victims of specific crimes.² In order to gain a differentiated insight into the crimes perpetrated on foreigners, a victim survey was conducted among Greek inhabitants in Stuttgart as part of an international comparative victimological dark field study entitled: "Kriminelle Viktimisierung - ein interkultureller Vergleich" (Criminal Victimization - a cross-cultural comparative study).³

1 See Schwind et al. 1975, p.54 et seq.; Schwind et al. 1978, p.193 et seq., p.205 et seq.

2 See v.Hentig 1948, p.414 et seq.; Gasser 1965, p.66 et seq.; Paasch 1965, p.51 et seq.; Schunemann 1972, p.384 et seq.; Separovic 1985, p.161 et seq.; Kiefl and Lamnek 1986, p.135, p.192 et seq; Wiltz 1981.

3 The study referred to was carried out by the Max Planck Institute for Foreign and International Criminal Law in Freiburg under the direction of H. Arnold. The project included surveys of representative samples in three States: Federal Republic of Germany (Baden-Württemberg), United States of America (Texas) and People's Republic of Hungary (Baranya). For further information see: Teske and Arnold 1982; Arnold 1984; Arnold 1986; Arnold and Korinek 1985.

2. Purpose of the study

The victim survey was designed to obtain information about the Greek population group's exposure to crime risk and to ascertain the scope of daily threat to life, health and property. Furthermore, it endeavoured to gain insight into the willingness to report crimes and the motives which deter from doing so when crimes have been sustained personally. In addition to the extent and structure of the victimizations experienced during the twelve-month reference period, the number of victimizations for the foregoing period of life was also to be investigated to determine the significance of earlier victimization experience on the respondents' attitudes and their fear of crime. Moreover, the study sought to estimate the probability and frequency of direct victimizations in an individual's lifetime. Also covered were indirect victimization (the witnessing of a crime perpetrated on another person), reported experiences of victimization (criminal incidents which were not sustained by the respondent himself but by family members, relatives, neighbors, friends and acquaintances) and, finally, the mass media's reporting of criminal events. The survey also endeavoured to measure the subjective burden caused by criminal acts manifested by the perceived fear of crime. Furthermore, attitudes towards criminal social controls were queried and indirectly registered with the aid of the respondents' appraisal of the work done by the prosecuting authorities. Also investigated was the participants' evaluation of rising crime rates and, finally, attitudes towards the treatment meted out to criminals.⁴

3. Study design

The victim survey among the adult Greek⁵ population was carried out in Stuttgart by means of a written questionnaire⁶ preceded by a pretest (personal interviews) with Greeks in Freiburg. The original version of the questionnaire was an English one which was slightly modified and extended to suit the situation in Germany.⁷ But in principle, the survey instrument was adopted unaltered. The formulation of the questions and the (predetermined) response categories were, to a

4 On the main points of the study, see: Pitsela 1986, p.153 et seq.

5 The fact that the author is herself Greek, explains why guest workers of this nationality were chosen as the survey group.

6 More detailed information on the methodology and execution of the empirical study are included in the research report, see: Pitsela 1986, p.165 et seq.

7 H. Arnold had translated the questionnaire and included additional variables.

large extent, translated literally into Greek, since comparability with the findings of the aforementioned study was intended.⁸ At this point, however, one should be aware of the risk of coming to erroneous conclusions when comparing the study findings since, even when the content of the questions is correctly translated, identical questions may be understood differently by different population groups.⁹ The minority study among Greeks was designed as to be comparable with the representative victim survey carried out in Baden-Württemberg both with respect to the sample construction and selection as well as the method of data collection. The sample, obtained by means of a systematic random selection, comprised 510 persons of Greek nationality at least 18 years of age, all resident in Stuttgart. The postal survey was carried out at the beginning of January 1983. Of the 510 questionnaires dispatched, 219 were returned (partially or fully) answered. Thus the return rate was 42.9% - with no adjustments made for the so-called neutral non-respondents - of the original sample. Under the prevailing conditions, the proportion of questionnaires returned may be considered satisfactory when the method of data collection,¹⁰ the length of the questionnaire,¹¹ the question content, the big-city character of the survey site¹² and the marginal socio-cultural status of the survey group¹³ are all taken into consideration. The proportion of non-respondents was higher among women than among men. Owing to a lack of data about the composition of the Greek population in Stuttgart, the Greek population of Baden-Württemberg was used instead to ascertain the representativeness of the sample. With respect to sex distribution, the comparison yielded an over-representation of men.

8 See Footnote 3.

9 See Kirchhoff and Sessar 1979, p.10. Compare also with Stephan 1976, p.463.

10 See Scheuch 1973, p.123 et seq.; Atteslander 1985, p.115 et seq., p.122 et seq.; Eisenberg 1985, p.122.

11 A See Wilk 1982; Friedrichs 1985.

12 See Scheuch 1974, p.62.

13 See Scheuch 1974; Sack 1978, p.300; Rasehorn 1975, p.105 et seq.

Also over-represented were married and employed persons as well as respondents who had been living in Baden-Württemberg or in the Federal Republic for a long period of time (over 10 years). This was, of course, due to the fact that only Greeks of full legal age were included in the sample whereas the corresponding data were based on the entire population. The breakdown according to social status at work, showed an under-representation of workers although the relative proportion of workers in the sample was 73%. A check on representativeness according to age-groups proved satisfactory.

4. Findings

In the following, reference shall be made to the findings of the representative victim survey conducted in Baden-Württemberg using the German respondents in Stuttgart (N=90) as the comparison group.¹⁴

4.1 Experience of victimization

4.1.1 Criminal victimization during the twelve-month reference period

22.6% of the Greeks (based on the 195 respondents who answered this item) had been, by their own account, victims of at least one criminal act in Stuttgart during the twelve months prior to answering the questionnaire. This corresponds to the quota from the German comparison group (22.2%). For the Greeks there was a mean victim burden of 0.49 offences per person for the twelve-month refer-

¹⁴ I wish to thank the director of the project, H. Arnold for having placed the necessary data at my disposal. With regard to the socio-demographic structure of the German comparison group, the following should be noted (the quotas for the Greek sample are given in brackets; all percentages have been rounded off and refer to the individual respondents to each question): women 43% (40%); married persons 56% (80%); without a school-leaving certificate 4% (7%); without a certificate of professional training 25% (62%); employed persons 67% (77%); workers 19% (73%); owners of an apartment or a house 35% (3%). It is obvious that the Greek sample is characterized in particular by persons who are married, have not completed any form of vocational training, who are workers and don't own houses. It is striking that in both samples the percentage of persons without a school-leaving certificate is very similar. The percentage of Greeks who had not completed any form of vocational training is much higher. For the younger respondents, this situation could probably be attributed to the difficulties they encounter in finding professional training possibilities in the Federal Republic of Germany; on this subject see: McRae 1980, p.102 et seq.; Just 1985, p.151 et seq. For the older respondents, the reason is to be found in their lack of formal vocational training in their society of origin since, there, vocational training is, as a rule, an informal learning process; (see inter alia Schrader et al. 1979, p.29; Kremer and Spangenberg 1980, p.29). On the socio-demographic structure, it should be mentioned that the average age of the respondents was 46 (38) years, the average size of a household 2.7 (3.5) members with an average net income per household of DM 2,570 (2,020).

ence period (1981). In contrast, the mean offence burden among the Germans for this reference period (1981) was 0.38 offences. Accordingly, Greek victims sustained a higher burden of victimization: on the average, 2.2 victimizations occurred per victim and year among the Greek respondents, compared with a mere 1.7 among the German respondents. The victimization burden by type of offences showed that excessively frequent offences such as theft and malicious mischief were responsible for the highest burden of multiple victimization with 1.8 victimizations per victim. Among the Germans, this was primarily the case with theft which was responsible for 1.7 reported victimizations. A comparative analysis by offences (see table 1) revealed that Greeks had been victimized more through serious offences (burglary, assault) whereas the Germans reported crimes, which were more of a petty nature (theft, malicious mischief). Correspondingly, the relative share of crimes of violence in the victimization incidents reported by the Greeks (18.9%) clearly exceeded the results obtained from the German survey (2.9%).

Table 1: Number of victims per offence in the last twelve months (before the collection of data)

Offence	Greeks		Germans	
	N	(%)*	N	(%)
Burglary	18	9.2	2	2.2
Vehicle theft	10	5.3	3	3.6
Other theft	12	6.4	9	10.1
Robbery	4	2.2	1	1.1
Assault with weapon	3	1.6	-	-
Assault with body	8	4.3	-	-
Rape	-	-	-	-
Arson	-	-	-	-
Malicious mischief	10	5.2	9	10.3
Other crimes	2	1.1	-	-
Total	44	22.6	20	22.2

* The victim quota within each sample was calculated on the basis of the respondents for each victim question; in so doing, the missing data was not taken into consideration. The reference period was twelve months and covered the year 1982 (Greeks) and the year 1981 (Germans).

4.1.2 Earlier experiences of victimization

The respondents were also required to give information about whether they had been victims of crimes during the entire period preceding the twelve months under survey. 28.2% of the Greeks (based on the 195 respondents who answered this item) claimed to have been victims of an offence before the twelve-month reference period compared with 42.2% of the German respondents. Among the Greeks there was thus a much smaller proportion of persons who had been victimized in their lifetime (excluding the twelve-month reference period). A comparison by offence (table 2) showed that, even before the reference period, Greeks were more prone to be the victims of serious crimes (assault, burglary) whereas, among the Germans, it was petty crime (theft, malicious mischief) which predominated. Correspondingly, the Greeks sustained a significantly higher relative proportion of victimizations involving the use of violence than the German respondents (37.8% vs. 13.8%). However, in both samples, crimes of violence accounted for a larger proportion of the total number of reported victimizations during the earlier survey period.

Table 2: Number of victims per offence (during prior lifetime)

Offence	Greeks		Germans	
	N	(%)*	N	(%)
Burglary	20	10.4	7	8.0
Vehicle theft	13	7.1	4	4.6
Other theft	22	11.5	23	26.1
Robbery	3	1.6	-	-
Assault with weapon	9	4.8	2	2.2
Assault with body	16	8.6	7	7.9
Rape**	2	2.4	2	5.1
Arson	-	-	-	-
Malicious mischief	10	5.6	14	15.7
Other crimes	-	-	1	1.1

* The victim quota within each sample was calculated on the basis of the number of persons who answered the specific victim question. The data collection period covered the person's entire life excluding the last twelve months.

** percentage based on female respondents.

To sum up, of a total of 219 Greek survey participants, 37.4% described themselves as having been victims of a crime, 51.6% as non-victims and 11% gave no information or none which could be used for our purposes. If we exclude the missing data, the victim percentage was 42.1% and the non-victim quota 57.9%. Not excluding the missing data, 22.6% of the respondents had been victims in the previous twelve months and 28.2% in the period before. Of the total of 90 German survey participants, 46.7% had been victims of at least one offence at some point in their life. Of that number, 22.2% had been victims in the course of the twelve months preceding the collection of data and 42.2% during their lifetime (excluding the last twelve months).

4.1.3 Indirect victimization

4.2% of the Greeks (vs. 14% of the German respondents) reported that they had witnessed a crime against another person in the course of their lifetime.

38.9% of the Greek respondents claimed to have knowledge of victimizations experienced by persons from their immediate social surroundings during the twelve months under report. On average, each Greek respondent who was personally acquainted with a victim of an offence, reported 2.3 incidents of victimization. In contrast, 44.8% of the German respondents claimed that they knew at least one person in the family, among relatives, neighbors, friends or acquaintances who had been victims of a crime in the past twelve months. Each German who knew a victim personally, reported an average of 2.7 offences.

A breakdown by types of offences showed that Greeks were most likely to know of persons who had been victims of burglary whereas Germans were more likely to have knowledge of victimizations caused by the frequent offence - malicious mischief. In the reported victimization experiences it was striking that, among the Greeks, 37.1% (vs. 17% for the Germans) of the reported knowledge of victimizations fell under crimes of violence. Crimes of violence accounted for a much higher proportion among the Greeks than among the Germans both for crimes experienced personally and with respect to knowledge of crimes to third parties from the person's immediate social surroundings.

98% of the Greeks kept themselves informed about criminal events; a correspondingly high proportion was also to be observed in the German comparison population.¹⁵ A breakdown by sources of information showed that 91% of the Greek

¹⁵ Both here and in the following paragraphs, the percentages were calculated on the basis of those respondents who answered the individual questions and these percentages were, as a rule, rounded off.

respondents received information on crime from television and/or radio, 79% from newspapers and/or magazines and 60% from conversations with third parties.¹⁶ In the case of the Germans, 82% of their information was accounted for by television and/or radio, 89% by the written press and 34% by communication with other persons. The findings show that, in both samples, the mass media was by far the most significant source of information on crime. For the Greeks, television and/or radio and for the Germans, newspapers and/or magazines proved to be the most significant source of information on crime. It was striking, that conversations played a much more important role as a means of communication about crime in Stuttgart's Greek community than it did among the Germans.

4.1.4 Criminal victimization and reporting behavior

The reporting behavior of adult Greeks in Stuttgart, that is, the victims of criminal acts, was only investigated for the previous twelve months.¹⁷ The question about the reasons for failing to report personally sustained crimes was put without fixed response categories.¹⁸

It is noteworthy that victims made an explicit distinction between informing the police and filing a complaint since one of the reasons given for failing to file a complaint was that "they had merely informed the police of the incident" or that "the matter had been referred to the criminal police". This could be an indication of the problematic interaction between victims and the police. It remains unclear whether the victims were unable to persuade the police to record complaints.¹⁹ It cannot be ruled out that the police regarded a social conflict among foreigners, or one in which the victim was a foreigner, as a private matter.²⁰ This situation could also be the result of a misunderstanding about the term "filing a complaint",²¹ for example, when victims believed that accusing an offender by name was an integral part of filing a complaint²² or that the incidents which the victim deemed criminally rele-

16 The sum total of the individual percentages is more than 100% since respondents were allowed to choose more than one answer.

17 In the case of the victimizations sustained in the course of a person's lifetime - excluding the twelve-month reference period - the willingness to report the incident to the police was only recorded for cases of rape.

18 See Stephan 1976, p.213. In the Göttingen victim survey (Schwind et al. 1975, p.197) and in the Bochum study (Schwind et al. 1978, p.208), the answers (a list of 16 different motives) were predetermined. The same list was used by Plate et al. 1985, p.100.

19 See Stephan 1976, p.213 et seq.; Kürzinger 1978, p.236; Ishii 1979, p.146 and van Dijk 1982.

20 See Bayley and Mendelsohn 1969, p.166; Hood and Sparks 1970, p.35, p.39.

21 See Kürzinger 1978, p.99, p.233; Sveri 1982, p.165; Villmow and Stephan 1983, p.237.

22 Kürzinger 1978, p.234.

vant could not be considered punishable in the judgement of the police.²³ Finally, it is possible that the mere contact with the police was not considered as "filing a complaint".²⁴

34.2% of the personally sustained crimes on which information about reporting behavior was given, had been brought to the attention of the competent authorities by the Greek respondents; in contrast, the average reporting quota among the Germans was 45.5%. An analysis of the reporting behavior by offences showed that, the willingness on the part of the victims to inform the police and thus to contribute, themselves, to combating and controlling crime depended on the type of offence.²⁵ The reporting behavior varied significantly; among the Greeks it ranged from 13.3% (malicious mischief) to 44.4% (vehicle theft); among the Germans it ranged from 18.2% (malicious mischief) to 100% (robbery, burglary).

As already demonstrated, a third of the punishable acts against Greeks was reported or brought to the attention of the state authorities through the victim's own initiative. Using the financial damage incurred in the case of burglary as an indicator of the seriousness of the offence,²⁶ it is clear that the willingness to report the crime depended on the amount of the damage incurred. Burglaries which caused a relatively minor financial loss (average value: DM 367) more often remained unreported than those which caused more damage (average value: DM 5,200).²⁷

Summing up, it can be affirmed that the low willingness of Greeks to report crimes can only partially be explained by the fact that the reported victimizations were merely attempted and not accomplished crimes, that the financial damage was small²⁸ or, in the case of crimes of violence, that the damage sustained to health was not serious enough to warrant reporting. The small number of cases does not permit any far-reaching conclusions. Non-reporting by the German respondents can be readily explained by the insignificance of the damage since the victimizations which were not reported (with the exception of vehicle theft) were more in the realm of petty crime.

Those victims who had not reported a personally sustained crime to the criminal prosecution authorities were asked to give the reasons for failing to do so. The

23 See: Fiselier 1979, p.113.

24 Hanack 1981, p.31 et seq.

25 See Stephan 1976, p.195 et seq.; Fiselier 1979, p.119 et seq.

26 According to Arzt 1978, p.177, p.182, burglary does not only affect the individual's property, but has an impact on his feelings of safety as well. Also: Janssen and Kerner 1985, pp.XI-XIX.

27 In view of the little data available on the size of the damage incurred in cases of theft and criminal damage to property, no statistical analysis of the connection between the level of damages and the reporting of crimes to the police was carried out here.

28 Nevertheless, the average financial damage caused by the unreported cases of criminal damage to property amounted to DM 633.

most frequent reason adduced was "no chances of success" and this was valid in 47% of the cases.²⁹ The second most important motive (24%) was "personal disadvantages". In this instance, the victims' fear of the offender or the fact that the costs might be higher than the financial damage suffered were allegedly the obstacles. "Lack of interest" or "self-redress" (12%) were third on the list. In the comparison sample, the most frequent reason for refraining from reporting a crime was also the narrow chances of success (57%) followed by the slightness of the damage (28.6%).

4.2 Fear of crime

The indicators used to record the fear of crime were designed to ascertain the "subjective" burden experienced by the Greek population group in comparison with the "objective" burden which emerged as a result of reported victimization experiences.³⁰ The fear of crime was construed as a psychological construct comprising emotional, cognitive and conative components.³¹ The survey instrument used different indicators to record all three components of the fear of crime.

4.2.1 Emotional component

Slightly more than half (51%) of the Greeks admitted that there was a place within one kilometer of their apartment where they would be afraid to go walking alone at night; this was endorsed by 59% of the Germans.³² Furthermore, 24% of the Greeks and 27% of the Germans were afraid to go walking alone at night within a radius of one hundred meters from their apartment. 16% of the Greeks and 15% of the Germans knew at least one place in Stuttgart where they were afraid to go alone during the day. Finally, 36% of the Greeks and 31% of the Germans were at least "sometimes" afraid to remain alone at home at night. The question "How would you rate your district with regard to the threat of criminality?", aimed at finding out how safe the respondents felt in their immediate living space.³³ More than half of the respondents (52% in each case) felt "rather" or even "very" sure that their district was safe from crime. In contrast, 18% of the Greeks (vs. only 9% of the Ger-

29 In this instance, the reason most often given (in 21 out of 24 cases) was that the victim could not identify the offender.

30 Stephan 1976, p.39 et seq.

31 On the "three-component principle" of social attitudes in general, see: Schmidt 1975, p.19 et seq. and about fear of crime in particular: Gefeller and Trudewind 1978, p.310 et seq.

32 Arnold 1984, calls this variable, used to measure the fear of crime, a "standard fear of crime variable" since it is used most frequently as an indicator in national and international victim studies.

33 Gefeller and Trudewind 1978, p.312.

mans) felt that their district was "not very" or "not" safe. Striking disparities between both samples emerged on items about the degree of respondents' concern, based on the rating, that they themselves would be victims of a crime in the coming twelve months. The level of fear was much more pronounced among the Greeks than among the Germans (52% of the Greeks vs. 10% of the Germans were "rather" to "very" worried). Moreover, feelings of anxiety in connection with a potential victimization in road traffic was clearly more marked among the Greeks than among the Germans (69% of the Greeks vs. 16% of the Germans were "rather" to "very" worried).

4.2.2 Cognitive component

Almost every second Greek (49%) believed that in the twelve months following the period under review he or she would be the victim of at least one punishable act. 43% of the Germans endorsed this fear. Since it was possible to choose a number of responses, each Greek named an average of 3.3 offences, a figure which was higher than for the Germans (2.8). The level of the victimization expectation varied according to the offence in question (see Table 3), ranging, in the case of

Table 3: Victimization expectations by offences for the following twelve months (after the collection of data)

Offence	Greeks		Germans	
	N	(%)*	N	(%)
Burglary	53	25.2	12	13.8
Vehicle theft	38	18.1	19	21.8
Other theft	50	23.8	14	16.1
Robbery	46	21.9	7	8.0
Assault with weapon	37	17.6	9	10.3
Assault with body	47	22.4	16	18.4
Rape**	32	15.2	6	6.9
Malicious mischief	27	12.9	21	24.1
Other crimes	4	1.9	1	1.1
Total	334	48.6	105	42.5

* Proportion of respondents in the individual samples who believed that they could be victims of a crime within the coming twelve months.

** The Greek sample also included 12 men who expected to be victims of rape. When the data are adjusted, victim expectation for rape is 24.7% among Greek women and 15.4% among German women.

the Greeks, from 13% (malicious mischief) to 25% (burglary) and, among the Germans, from 7% (rape) to 24% (malicious mischief). The survey findings revealed which offences the Greek or the German population groups expected to be victims of in the near future. Generally speaking, the Greeks expected victimizations principally in the form of burglaries and crimes of violence, whereas the Germans felt more likely to be victims of property offences and also of assault with body.

A comparison of the quotas of victim experiences and victim expectations by type of offence³⁴ (table 4) revealed that, in the Greek sample, victim expectations with regard to property offences (burglary, other theft, vehicle theft and malicious mischief) were on a par with victim experiences. The findings were similar for crimes of violence (assault with body, robbery, assault with weapon). It was especially in the case of crimes of violence that victim expectations clearly exceeded the corresponding victim experience. In view of these findings, the subjective assess-

Table 4: A comparison of victimization experience and victimization expectation according to offences (in %)

	Greek sample			German sample		
	VIC82*	VICEXP**	Difference	VIC81*	VICEXP	Difference
Burglary	9.2	25.2	16.0	2.2	13.8	11.6
Vehicle theft	5.3	18.1	12.8	3.6	21.8	18.2
Other theft	6.4	23.8	17.4	10.1	16.1	6.0
Robbery	2.2	21.9	19.7	1.1	8.0	6.9
Assault with weapons	1.6	17.6	16.0	-	10.3	10.3
Assault with body	4.3	22.4	18.1	-	18.4	18.4
Rape***	-	24.7	24.7	-	15.4	15.4
Malicious mischief	5.2	12.9	7.7	10.3	24.1	13.8
Other crimes	1.1	1.9	0.8	-	1.1	1.1
Total	22.6	48.6	26.0	22.2	42.5	20.3

* Victim in 1982 (Greeks) or in 1981 (Germans) (in each case twelve months before the collection of data).

** Victimization expectation (in each case twelve months after the collection of data).

*** Percentage of female respondents.

³⁴ Victim expectation for arson was not investigated. Victim expectation for vehicle theft was investigated but the victim experiences recorded here refer only to motor vehicle theft.

ment of the victim risk seems, in the case of crimes of violence, to depend little on the degree of danger concretely perceived. Obviously, crimes of violence, which imply a face-to-face confrontation with the offender, are more likely than other crimes to arouse a feeling of menace and danger among members of the public. The relatively high victim expectation in the case of crimes of violence may be due to the media, if one considers the fact that crimes of violence predominate in the news broadcast over the mass media.³⁵

Among the German respondents as well, the rates of expectation for all offences were higher than the established rates of victimization. However, a breakdown by offences exposed disparities between the two groups. In the Greek sample, the highest difference in percentage points between experience and expectation was 24.7 in the case of rape; among the Germans the highest difference was in the case of assault with body (18.4).

When asked about the probability of becoming a victim of a criminal act in the following year - without being given a list of possible punishable acts - more than one out of every three Greeks (34%) almost totally ruled out the possibility of sustaining injury through a crime. In contrast, 33% thought the occurrence of a criminal event "hardly", 17% "moderately", 9% "rather" and 7% "very" likely. 27% of the Germans ruled out all possibility of being victimized; 44% considered it "hardly", 28% "moderately" and 1% "very" likely. Hence, only a minority in both samples firmly reckoned with the possibility of being the victim of an offence; however, more Greeks were prone to see the occurrence of a criminal incident as "rather" or "very" probable than Germans (16% vs. 1%). A comparison of the views on the probability of becoming the victim of a crime and that of being injured in a traffic accident showed that both samples - though to different degrees - assessed the risk of being victimized by a traffic accident as being much higher. 56% of the Greeks, compared with 19% of the Germans, considered the occurrence of a traffic accident to be "rather" to "very" probable.

A comparison of the subjectively evaluated probability of victimization through crime with the scale of emotional anxiety based on the estimated probability of victimization, revealed that the rational assessment of the victimization risk in the case of Greeks was rather low (16% felt that a victimization was "rather" or "very" probable). In contrast, feelings of anxiety were very pronounced (52% of the respondents were "rather" or "very" worried). Whereas among the Germans the assessment of the risk of victimization and the concomitant feelings of anxiety were relatively close to each other (1% to 10%), in the case of the Greeks, the feelings of anxiety were out of proportion to the assessment of the victimization risk.

35 For further information on this topic, see: Stein-Hilbers 1977, p.4, p.130; Schwacke 1983, p.41; Schneider 1981, p.637. Tsiakalos 1983, p.12 et seq., who used the press as the source of documentation, came to the conclusion that violent attacks against foreigners were a part of everyday life.

On the question about interest in the topic of "crime" as a social phenomenon and as a day-to-day problem, 93% of the Greeks evinced a basic interest as did the overwhelming majority of the Germans (98%). However, there were clear disparities between the two samples on the extent of the respondents' interest in criminal events. Whereas 30% of the Germans were "hardly", 54% "rather" and 14% "very" concerned with the topic of crime, 18% of the Greeks were "hardly", 37% "rather" and 39% "very" interested in criminal events.

4.2.3 Conative component

Just under half of the Greek respondents (49%) had taken at least one safety precaution in their apartment to protect themselves from crime; this was in line with the results from the German comparison group (48%). However, the average number of precautions which the Greeks reported was higher (1.7 vs. 1.3 safety devices). In response to the question: "How well can one protect oneself against crime by taking preventive measures?", 88% of the Greeks and 87% of the Germans were of the opinion that they were able to protect themselves very well. It is interesting to note that the effectiveness of the respondents' preventive measures to forestall future violations of the law, was rated higher among the Greeks than among the Germans. 57% of the Greeks thought that the measures taken to prevent crime were "rather" to "very" good, whereas the Germans (30%) attached less importance to them. If we compare the degree of importance which the Greeks attached to privately taken crime prevention measures with the rating of the effectiveness of caution in preventing traffic accidents, it is clear that active precautions taken on one's own initiative to protect oneself against victimization in road traffic is considered more likely to be effective. 79% of the Greeks believed that one could protect oneself "rather" and "very" well against victimization in road traffic, a belief shared, however, by only 6% of the Germans.

On the whole, it could be observed that a relatively high degree of subjective burden is engendered by crime. About half of both samples was clearly affected by feelings of insecurity with regard to crime. Noteworthy differences between the group under study and the comparison group emerged with regard to the degree to which they thought themselves at risk of victimization (crime, traffic accidents) and the concomitant feelings of insecurity. Differences also emerged in their evaluation of the effectiveness of private self-protection measures in preventing crimes and traffic accidents.

4.3 Attitudes towards official crime control

In this section, attitudes towards sentencing practices, the correctional system, the effectiveness of the local police, crime control and, finally, the crime problem were queried.³⁶

A majority of Greek (52%) and German (53%) respondents gave a favorable assessment of the sentencing practice of the courts. In contrast, more Germans (39%) than Greeks (28%) considered the sentences "too lenient" whereas 2% and 8%, respectively, considered them too harsh.³⁷ Greeks (11%) were more inclined than Germans (6%) not to have an opinion about court practice or to be unable to find an appropriate alternative among the predetermined response categories.

The effectiveness of the correctional system in preparing prison inmates for their return to society was rated as being "excellent" by 13% of the Greek respondents; 27% felt it was "good", 23% "fair" and 25% "poor". Finally, 12% were unable to give any opinion of the effectiveness of the correctional system. As the findings show, every fourth Greek was unconvinced by the resocialization efforts of the correctional system. On the other hand 2% of the Germans deemed it "excellent", 9% "good", 26% "fair" and 56% "poor". 8% gave no opinion. The majority of the German respondents doubted that punishment led to any improvement and the law-breaker's chances of rehabilitation after having served a sentence, were seen as being very small.

In answer to the question "How would you rate the work of the police in your city?", 17% of the Greeks answered with "excellent", 47% with "good", 21% with "fair" and 10% with "poor". 5% were unable to give any opinion on the work of the police. In view of these answers, the Stuttgart police force seems to enjoy quite a satisfactory image among the members of the Greek community. 34% of the German respondents felt that the performance of the police was "good", 47% "fair", 17% "poor" and 2% gave no opinion. Therefore Germans were more critical in their judgement of the police than Greeks.

Comparing attitudes to the law enforcement agencies (the courts, the correctional system, the police), the Greek respondents gave the police the best report. The relative proportion of respondents who considered that the law enforcement agencies performed their respective tasks at least well, was 64% for the police, 52% for the courts and 40% for the correctional system. The performance of the correctional system was most negatively rated. This was in line with the opinion expressed by the German respondents who saw the activities of the courts in the most positive light. The relative proportion of respondents who rated

³⁶ In this section (attitudes towards official crime control) the missing data quotas were taken into consideration.

³⁷ Those who criticized the practice of the courts, most often found them too lenient.

the performance as at least "good" was 53% for the courts, 34% for the police and 11% for the correctional system.

Asked whether court practice (positively or negatively) influenced police crime control, 45% of the Greek respondents were of the opinion that the police were not handicapped. Similarly high (45%) was the proportion of those who thought that the police were "somewhat" (31%) or severely (14%) handicapped in the investigation and prosecution of crime. 11% gave no opinion. It can therefore be assumed that a certain degree of ineffectiveness in state prosecution of criminal offences was attributed both to the courts and the police. In contrast, 61% of the German respondents claimed that the police were severely (18%) or "somewhat" (43%) handicapped in their efforts to control crime by the practice of the criminal courts; 32% were not in agreement with this and 7% gave no opinion. Therefore the majority of the German respondents felt that court practice had a negative impact on the police's sphere of activity.

In assessing the crime problem, the majority of the Greek respondents observed that crime in Stuttgart and in the Federal Republic, 52% and 69%, respectively, had increased in the three years preceding the data collection period. 31% and 17%, respectively, believed that it had remained the same and 10% and 5%, respectively, were of the opinion that it had dropped. Hence, crime was perceived differently on the local and the national level; local crime trends were clearly more positively rated than national trends in crime.³⁸ The same was true for the comparison group, even though the evaluation of crime trends in their community was more positive than it was for the Greeks.³⁹

Those respondents who were convinced that there had been an increase in crime in Stuttgart in the past three years, were given the possibility of choosing from a number of (predetermined) reasons which they thought were responsible for the increase in crime. Each Greek gave an average of 3.3 reasons for the worsening crime problem. The reasons for the increase in crime were thus seen as complex. The majority of the Greek respondents connected the rise in crime with drug consumption (78%), with the precarious economic situation (65%), and only in third place came the collapse of family life and parental discipline (61%). Heading the

³⁸ The more negative trends in criminality on the national level were ascribed to the influence of the mass media. See, *inter alia*: Stephan 1976, p.127 et seq.

³⁹ In this respect it should be noted that the German respondents rated the trends in crime in their **community** whereas the Greeks rated the trends in their **city**. Although the German respondents had been located through the city of Stuttgart's residents' registration office, when asked about the size of the area in which they lived, 22% said that it had less than 100,000 inhabitants. The remaining 78% said that it had over 100,000 inhabitants. It must be taken into account that on the 30th June 1982, Stuttgart had a total of 575, 230 inhabitants. As a result, it can be assumed that the German respondents' assessment of the crime problem was less related to the city of Stuttgart - as was the case with the Greeks - than to the district in which they lived. It is a recognized fact, however, that respondents tend to rate crime trends more positively for their district than for the city in which they live. See Stephan 1976, p.125 et seq.

list of reasons which the German respondents thought responsible for the increase in crime in their community, was (in this order) the collapse of family life and parental discipline (63%), the decay of morality (49%), and drug consumption (40%).

On the whole, the projected assessment of crime trends for the three years following the survey was more negative for Stuttgart and for the Federal Republic than the evaluation of crime trends up to that point in time. Most of the Greek respondents expected the crime problem to worsen in Stuttgart (65%) and in the Federal Republic (74%). 17% and 10% expected the crime rate to remain unchanged and only 6% in each case forecast a reduction in crime. Crime was expected to increase more markedly in the Federal Republic than in Stuttgart.

The same conviction could be identified in the comparison group: whereas 73% of the German respondents predicted an increase in crime for the Federal Republic as a whole, only 42% did so for their community. Furthermore, a fourth of the respondents believed that crime in the Federal Republic would stagnate (24%) or decline (1%), whereas more than half (50% and 4%) were of the same opinion as far as their community was concerned.

To sum up, it can be affirmed that only a minority of the Greeks expected crime to stagnate or even decline either in Stuttgart or in the Federal Republic. The crime situation was expected to worsen considerably in the future in comparison with previous years. The majority of the German respondents rated crime trends negatively only on the national level. Over 50% believed that crime rates would remain unchanged or even decrease in their community.

4.4 Attitudes towards the treatment of crime and criminals

Here, the study endeavoured to ascertain attitudes towards the death penalty, mandatory supervision after having served a prison sentence, parole, the aims of the correctional system and suspension of prison sentences.⁴⁰

Whereas 58% of the Greeks advocated the death penalty for at least one of the crimes (listed on the questionnaire), only 42% of the German respondents did so. An analysis of the figures advocating the death penalty by type of offence, shows which offences seem to justify the death penalty in the respondents' opinion.⁴¹

A narrow majority of the Greeks (51%) advocated the death penalty for homicide only. Furthermore, the death penalty should be applied in cases of treason (25%), abduction (23%), rape (19%), armed robbery (19%), terrorism (16%) and

40 The population's attitude with regard to penal law and the correctional system is important since it affects the success or failure of the latter in daily practice. See Müller-Dietz 1974, p.167; Kaiser 1980, p.168 et seq.

41 In the Greek penal code, the death penalty is a possible form of punishment for specific serious crimes.

arson (12%). Of the German respondents, 34% advocated the death penalty for murder, 26% for abduction, 20% for terrorism, 9% for rape, 2% for robbery, 2% for treason and 1% for arson.

The average number of crimes for which the death penalty was considered appropriate was higher among the Greeks than among the Germans (2.9 vs. 2.4).

The majority of both the Greek (69%) and the German (61%) respondents was in favor of placing every discharged prisoner under the supervision and guidance of another person for a certain period of time. In addition, merely two-fifths of the Greek (39%) and German respondents (38%) believed that convicts should be released only after having served the entire stipulated term of imprisonment; by contrast, the majority of the Greeks (53%) and the Germans (58%) believed that convicts should be released on parole for good conduct in prison.

With regard to the aims of the correctional system, most of the Greek respondents considered deterrence (73%), resocialization (71%) and punishment (63%) to be very important. Incapacitation of the criminal by physically excluding him from society, was considered very important by only 38%. The German respondents, too, placed more of an emphasis on resocialization (87%), deterrence (63%) punishment (52%) and less on incapacitation (31%).

Finally, more German (83%) than Greek respondents (59%) were in favor of probation, an important institution in crime control policy, for specific crimes listed on the questionnaire. Advocates of this institution were in favor of suspending execution of the sentence for an average of 3.6 or 3.5 offences. Heading the list of crimes for which the sentence should be suspended on probation was, in the eyes of the German respondents, shop-lifting (76%) and, in the opinion of the Greeks, drunken driving (42%). In second place among the Greek respondents was shop-lifting (40%) and among the Germans drunken driving (56%). It is striking that 46% of the Germans were in favor of probation in the case of the consumption of illegal drugs whereas only 13% of the Greeks were. With respect to the treatment of crime and criminals by the criminal justice system, it could be generally observed that the Greek respondents were less tolerant than the Germans.

5. Conclusions

As the analysis of the empirical findings illustrates, at least one out of every five Greek respondents claimed to have been the victim of an attempted or accomplished crime within the 12 month reference period. The victimization burden of the Greek population group was almost identical with that of the German comparison population. The breakdown of the victimization burden by offence showed,

however, that among the Germans the petty nature of the crime sustained (theft, criminal damage) was most significant whereas the Greeks were exposed to more serious offences (burglary, assault). Even though the proportion of victims was similar in both samples, it was the Greeks who experienced the highest number of victimizations through different crimes.

Apart from the previous year, German respondents had been victimized to a much greater extent during their lifetime than the Greeks. This might be explained by the fact that the Greeks were on the average younger than the Germans. However, the relative proportion of victimizations by use of violence, sustained by the Greeks, was much higher than for the German respondents.

Only a fraction of the personally experienced victimizations had been reported. The number of reported crimes was smaller than in the German comparison sample although the Greeks had principally been victims of (relatively) serious offences. The motives for failing to report seem, for the most part, to be independent of the subjective willingness of the Greek respondents to initiate criminal proceedings. In most cases, the respondents obviously took it for granted that if they did not know the perpetrator, a complaint would not lead to his identification and would therefore be doomed to failure.

The perceived risk of victimization was higher than the reported victimization burden. 50% of the Greek respondents were aware of the risks of a criminal victimization. In the German comparison group, the relationship between sustained victimizations and the evaluation of personal victimization risk was out of proportion, too. The degree and intensity of the feelings of anxiety were strikingly expressed among the Greeks. Nevertheless, the latter rated their own contribution to crime prevention clearly in a more positive light than did the Germans.

The attitude of the Greek respondents towards the courts and the police was predominantly positive; the performance of the correctional system with respect to resocialization was seen as the least effective of all. This view was even more pronounced in the German group. The Germans rated the work of the police more negatively than that of the courts. The assessment of crime trends on the national level was generally negative in both samples. On the community level, the Germans were much more apt than the Greeks to be convinced that the crime rate would remain the same or would even decrease. Also, on the item relating to the possible causes of the rise in crime, there was only a limited consensus between the two samples.

With respect to attitudes towards the treatment of offenders, there was a wide consensus between the German and Greek respondents in advocating the mandatory supervision after having served a prison sentence, parole and the correctional system although, with respect to the aims of punishment, the Germans gave greater precedence to resocialization and the Greeks to deterrence. A clearer

orientation towards penal retribution was discernible among the Greeks from their attitude towards the death penalty and probation.

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Problems of Dark Field Research with Particular Reference to Abortion

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1. Introduction

To many fields of research, precise knowledge about the total volume of all violations of statutory rules is of major importance. Essential to understanding and directing the selectivity of sanctions is, for example, knowledge of the entire field of criminally sanctioned violations of statutory rules. On the theoretical level, much also depends on whether firm statements can be made about what is known as the "dark field".¹ Our report will address a number of these issues and will attempt to elucidate the problems outlined above using the criminal prosecution of abortion in the Federal Republic of Germany as an example.

1.1 The concept of the dark field

In the discussion on dark field research, one generally encounters the perception that the term "dark field" is to be understood as the sum of all crimes which have not been detected and as a result have not been recorded in official criminal statistics.² A broader definition of the "dark field" extends to all those offences which have in fact been perpetrated but have not been perceived as crimes by anyone. Schneider describes this field as the "absolute dark field" distinguishing it from the "relative dark field" to which he relegates those offences which have been detected by the agencies of criminal prosecution but whose perpetrators have remained unidentified. In the so-called "grey field of crime", Schneider counts those cases where

1 In this report, the term "dark field" (Dunkelfeld) is used as a synonym for the "dark figure" or "undetected crime".

2 See Mc Clintock, 1970, p.7 et seq.

the charge was dropped by the public prosecutor or where the courts handed down a judgement of acquittal since, in such cases, it is impossible, in his opinion, to determine with any degree of certainty whether a criminal offence has "really" been committed.³

We would refer to such definitions of the "dark field" as legalistic since they are orientated to the precepts embodied in German Penal Law. Definitions of this type are, however, somewhat problematic as can be seen if one considers that: in one case the dark field was defined on the basis of the **crime** which had not been perceived as such; in the second case, it was defined on the basis of the fact that the **perpetrator** remained unidentified; and finally, in the third, on the basis of whether legal sanctions were applied or not, that is, on the basis of institutional **reactions** or processes of selection. However, such a classification confounds the problems raised by the questions of the validity structure of statutory rules with problems of a tactical nature in the field of criminal prosecution by implying that each of these three groups is a distinct quantity, which is by no means the case. The last definition, for example, denotes institutional, i.e., legal problems of selection such as the question of verifiability, the proof of criminal responsibility and the like. However, here too, the question of the actual existence of a breach of a statutory rule can still be problematicized, just as it is possible to include, in this category, those cases where the guilt of the perpetrator cannot be proven, but where a violation of a statutory rule has clearly occurred. The foregoing categories can therefore be organized at best in the form of a hierarchy in such a way that if no other classification scheme is available, the next in line can be applied.

It seems useful, first of all, to determine what we are referring to when we speak of the "dark field". This can be of import from the criminalistic as well as from the criminological or sociological point of view as we shall endeavour to demonstrate at a later stage. In defining the dark field, we too shall have to use existing legal rules as our starting point. To avoid the reproach of legalism which we levelled at some of the classifications above, we shall, however, have to refrain from introducing any criterion other than this one. To our mind, the "dark field" includes, to begin with, **all** acts which are relevant to a concrete legal rule in so far as they are not perceived as crimes - a standpoint which more or less coincides with the "absolute dark field" described above.

However, it is necessary to separate from this definition issue a number of consequential problems which refer to the complex process of defining and selecting legally relevant data - a process which is carried out on various levels by the institutions of criminal prosecution. For, although these processes produce

3 Schneider 1987, pp.182-183.

genuinely different forms of "dark fields"⁴ they can, as we shall endeavour to show, only be understood by reference to concrete contexts and not with the aid of classifying specifications. Hence, we are dealing here with terms and research programs which commence only after the violation of a statutory rule has been detected and, as a result, no longer fall within the "dark field" proper as we understand it.

The example of abortion can serve to illustrate this point. To begin with, it is the existence and content of statutory rules, as well as the system of possible sanctions, which determine all subsequent questions with respect to the potential dark field. As a result of the pertinent statutory regulation, abortion is punishable in the Federal Republic of Germany unless special justifications or legal reasons for exemption from punishment are applicable.⁵ Although this defines all potentially relevant acts, the additional fact that abortion is one of the so-called "victimless" crimes is of significance for our formulation of the problem.⁶ This is where the consequential problems come into the picture. The dark field can namely - nota bene: as far as the conduct of research is concerned - only be inferred by means of an indirect approach and no longer via the concept of the victim. In the following report, we would like to address some of the difficulties which this poses as well as the resultant theoretical implications.

1.2 Is the validity of statutory rules measurable ?

The difficulties posed by the dark field are insidiously related to questions of the validity of statutory rules. To wit, it is often presumed that the dark field is that area of behavior where certain statutory rules are, de facto, no longer valid. This presupposes that validity can be measured - an assertion which has been widely debated. Dark field estimations have led to the conclusion that only what is known as petty and/or casual criminality is distributed equally across all sections of the population whereas the incidence of specific types of criminality varies according to social strata. This recognition has led to repeated attempts to define "efficiency quotients". Theodor Geiger, for example, is of the opinion that: "The so-called 'legal force' of a statutory rule is a measurable quantity. A statutory rule is not absolutely valid or invalid, but binding to a greater or lesser degree."⁷ The arguments against this point of view have also often been aired. One such argument is that the very construction of such "efficiency quotients" predicates on a specific understanding of the validity of statutory rules. The coupling of validity and observance, it might

4 Precisely "relative dark fields", "grey fields" etc.

5 See Koch, 1988.

6 See section 3.2.

7 Geiger 1964, p.71.

be added, already represents an inadmissible contraction since, even when it is violated, a statutory rule can still claim validity - whether in the eyes of the perpetrator himself or in those of other actors. Indeed, validity can be asserted to the extent that the actors do not contest the precept's implicit or explicit claim to normative verity. However that may be, it is not possible to infer, from the mere observance and/or violation of the precept, whether this is the case or not.⁸ This also means, that the validity structure of legal precepts cannot be ascertained from the "observer perspective" by determining to what extent behavior which "complies with the norm" or which "deviates from it" is in evidence. We shall have to pursue this critique further on the methodological level. It is quite possible that it will lead to a basic re-orientation. Other misgivings about "efficiency quotients" refer, first and foremost, to the extent to which they can be operationalized.⁹ However, such misgivings are not fundamental in nature and can be dispelled at any point in time by improving the measurement tools or at least by indicating that they can be improved.

2. The objectives of dark field research

Having approached the concept of the dark field from a more descriptive point of view, we would like to turn our attention to the question of the context in which this area of research emerged and its practical and theoretical relevance. In considering the function of dark field research, it is important to note that it emerged, historically, as a problem of criminal statistics and that it is also in this field where it is still important. In addition, it constitutes an important contribution of empirical social research to some fundamental questions of a sociological nature. These are the two areas of application which we propose to investigate briefly in the following pages.

2.1 The dark field as a statistical problem

The measurement of the volume, type and development of criminality in various areas, in the society as a whole, or on a supranational level is one of the cardinal tasks of what is referred to as the investigation of legally relevant facts. The procedure most commonly employed in the "measurement of criminality" is

⁸ This opinion is also held by Dux 1978, p.77 et seq.

⁹ See Röhl 1987, p.246.

still the collation of official criminal statistics.¹⁰ At the same time, studies of a more theoretical nature concerned with the topic of "deviant behavior" also make use of criminal statistics - directly or in processed form - to check and substantiate their assertions.¹¹

Knowledge of precise figures on the frequency of offences, offenders and victims is obviously of overriding significance in these fields, since only reliable statistics can provide the competent institutions with the requisite information about the real extent of delinquency. To take just a few examples: demands in the field of legal policy can be more effectively justified if they are not based on unreliable figures which are collected in a purely selective fashion; prison and correctional treatment concepts will not be able to allay suspicions of ideological motives as long as the statistics on which they are established continue to exclude entire areas of criminality and groups of offenders;¹² and finally, investigations in comparative law also require statistics which contain more than only institutionally recorded delinquency.

Independently of the methodological problems which are yet to be discussed in detail, these reflections reveal that research on legally relevant facts, conducted on the basis of criminal statistics, can only be undertaken from very limited angles and that there is a need for obtaining more precise information on the entire volume of delinquency.

2.2 The dark field as a problem of the validity structure of statutory rules

The following considerations should make clear that, aside from the elucidation of statistical issues, dark field research has a certain degree of relevance for theory construction in the field of sociology of law.

If the thesis is correct that modern societies are characterized¹³ by the displacement of crisis symptoms from the economic sphere to the sub-system of legitimacy and thus by the replacement of symptoms of crisis in the field of material resources by symptoms of crisis in the field of meaning and legitimacy, the question arises as to how legitimation problems, i.e., symptoms of crisis, can be recognized. This question addresses a category which is central to sociology. This category can be directly transformed into questions which are relevant to sociology of law since legitimation problems can be described as the other side of the issue of the de facto validity of statutory rules. In the transformation process it is chiefly

10 Schneider 1987, p.191.

11 These also include research projects which are based on police registration files.

12 Liebl 1984, p.3 et seq.

13 Habermas 1973; Habermas 1981, II, p.445 et seq.; Offe 1972, 1974, 1979.

two aspects which come to the fore, both of which are specifically connected with the problem of the dark field, and which can be described as the question of the enforcement and observance of positive law.¹⁴

In modern societies, the enforcement of norms is the task of distinct institutions which have been specifically entrusted with the application of positive law. At the same time, it can be observed time and time again that the institutions in question fulfill this task in a very selective manner¹⁵ and do so in a way that gives reason to surmise that this selectivity harbors an internal system which goes more or less in the direction of a peculiar "selection style". The question which is interesting from the sociological point of view¹⁶ as well as from the perspective of legal policy¹⁷ is thus to discover which factors direct the selective process involved in the application of the law. Before such questions can be clarified, however, it is necessary, first of all, to determine which selection processes really take place in the concrete case. In other words, the first step must be to find out how the totality of the event sequences, from which the institutional actors select the information they see as relevant, is structured.

As for the field of criminal prosecution in the case of abortion, the underlying hypothesis posits that both the interpretation and application of the pertinent norms of penal law can be depicted by and large as the result of a process. In this process, conflicts of interest which have not been solved in the course of the enactment of the legal precept, restrict the possibilities of control and sanctions provided by the norms, in the form of prevenient control handicaps. This basic assumption refers, however, first of all only to selection processes which we would term "secondary" since they only become operative on different levels in a procedure which has already commenced. Just as important, in our opinion, is the question of which violations of the totality of acts which come within the terms of a statute, are registered at all by the police and the public prosecutor and thus reach the stage where they can constitute the object of a preliminary investigation. In this study, we shall refer to the processes which are decisive in this respect as "primary" selection processes.¹⁸

A study which - first of all on the empirical level - seeks to make reliable statements about the validity of statutory rules in the process of criminal prosecution,

14 Luhmann 1980, p.267 et seq.

15 Blankenburg 1969; Popitz 1968; Luhmann 1980, p.275 et seq.

16 See e.g. Schmid's theory of structural selection, Schmid 1982; based on this theory is the work by Eder 1985.

17 See the extensive discussion on the implementation of political programs in Mayntz 1980, 1983 as well as on the problem of governing with the aid of the law, Voigt 1983, 1986.

18 In this report, we shall not dwell on the debate about the 'labeling approach' since we believe it is possible to presume that the problem formulation outlined above is of relevance both for the advocates as well as for the opponents of this theory. At the same time, to our mind, the problem formulation does not underscore the differences between both sides.

will therefore not be able to avoid at least an attempt at reflecting on the conditions under which this process is triggered off. Only if this precondition is fulfilled, statements about "secondary" selection processes do seem at all worthwhile since the observation that in the course of criminal prosecution, certain pre-structured patterns of conduct become operative, will always have to start off by coming to terms with the objection that it is a question simply of the repercussions of pre-existing - quasi-"objective" - criminality structures which elude such an analysis. This criticism can only be dismissed, at the best of times, if either the total population from which the facts of the case are perceived by the institutions can be described at least roughly or if, on the basis of the institutional pattern of conduct itself, it can be proven that the bias is a systematical one. However, both methods presuppose different conceptions, or variously gleaned knowledge of the dark field.

The second aspect which emanates from the legitimation problem, is that of the observance of statutory rules. Here, the question of the dark field is interesting from two points of view. Firstly, it is common knowledge¹⁹ that behavior which is in compliance with the obtaining legal precepts is, itself, connected in a specific way with the assumption of compliant behavior on the part of others. However, in this context it is as yet unclear, in many respects, to what extent such assumptions exert an influence, i.e., to what extent ignorance can still have a preventive effect, and when violations of statutory rules can no longer be overlooked. In other words, ignorance, too, is socially constituted and, consequently, comprehensible. On the other hand, the very compliance with statutory rules is, as we have seen before, a problem of criminal statistics. Here, the analysis of aggregate data suffices to show that, for example, population surveys about the acceptance of the precepts of penal law such as those embodied in § 218 et seq. of the German Penal Code, in no way provide reliable information about real behavior.²⁰ Precisely in the category of "victimless" crimes, in which abortion - save for some terminological²¹ reservations - must also be included, serious doubts arise about some of the methods employed in dark field research as we shall see at a later stage.

19 Popitz 1968.

20 Bora and Liebl 1986.

21 See section 3.2.

3. Methodological problems of dark field research

A vast number of publications is available on special methodological problems pertaining to dark field research.²² We would therefore like to limit our commentary to a few points which, in all probability, have not been the subject of extensive discussion thus far. Dark field research relies, traditionally, on a comparatively limited repertoire of methods. At the top of the list we find surveys of offenders, victims or informants conducted in written or in interview form. Participant observation is more seldom and document analysis has likewise been rare to date. The criticisms levelled most frequently in this context allude to methodological shortcomings such as the lack of precision, consistency and reliability of the data on detected delinquency.²³ This is why we shall give precedence in this study to the investigation of some procedures which make it possible to minimize mistakes of this kind although, in the process, we shall not be able to entirely dismiss the objections raised. We shall then proceed to discuss methodological questions related to dark field research using the example of abortion by way of illustration, and shall attempt to appraise the meaningfulness of different approaches against this background, endeavouring to point out alternative strategies.

3.1 Methods for statistical alignment

We have already mentioned the fact that official criminal statistics only cover a portion of all crimes. The term "crimes which have been brought to the knowledge of the police" is evidence of this fact. There are many different reasons which could be responsible for this state of affairs. For example, it is possible that a theft goes unnoticed by the owner or a fraud by the victim. It is also possible that the person in question is reluctant to admit publicly to having been the victim of a swindle and as a result does not report the crime to the police. In the field of white collar criminality, it often occurs that the swindler "diverts" money from the victim who, for his part, had also obtained it illegally, in which case, the victim's willingness to report the crime is, as can be expected, very low.

But even in the case of crimes such as murder, which are generally seen as being easily identifiable as crimes and as having a high rate of detection, it turns out that detection is in fact only fragmentary.²⁴ Here, too, it is possible that the death of a person goes unnoticed, as unfortunately happens time and time again

²² See on this and subsequent points Kaiser 1985, p.223 et seq.; Schneider 1987, pp.182-221; Rotleuthner 1987; Eisenberg 1985, p.121 et seq.

²³ Kaiser 1985, p.224.

²⁴ See e.g. the investigation conducted by Havard 1960.

in the case of older persons living on their own, that a murder is disguised as a suicide or accident, or that a corpse is never located and the person therefore classified as missing.

When we take these and similar circumstances into consideration, it seems justified to ask whether the foregoing does not totally undermine the value of criminal statistics.²⁵ Such an assertion could be countered by arguing that the primary purpose of criminal statistics, as far as the practice is concerned, is not to constitute an exhaustive record of the violations of statutory rules but, rather, a depiction of the way in which the police processes individual crimes. They are thus not entirely superfluous but serve, first and foremost a purpose other than the construction of statements about the extent of criminality.

However, for the reasons stated above, there is an immense interest in obtaining knowledge - at least rough estimates - about broader fields of delinquent behavior. In an endeavour to align the data recorded in official statistics with such estimated quantities, an array of methods have hitherto been applied. The most well-known and most popular among them is the interviewing of persons about crimes which they themselves have perpetrated (self-reporting studies), or of which they have been the victim. In addition, in the case of some crimes which allow such a procedure, participant observation is used in an attempt to establish a relationship between light and dark field (recorded and unrecorded crime). A further method consists of using already existing findings on the dark field to draw inferences about fields that have not yet been tackled. This procedure of "eliminating dark figures in ecological investigations"²⁶ starts from the premise that it is possible, for example, to pinpoint certain districts of towns which exhibit a relatively low dark figure in comparison with others. The aim is to be able, at a subsequent stage, to subject specific criminality structures to a comparative investigation. Alongside these possibilities, we find that "estimates" are frequently introduced into the debate on the dark field in the relevant literature. Frequently, such estimates amount to no more than statements of a general nature, for example, that "the dark field is very large" or that "the real number of the crimes is many times larger than that which has become known".

This overview should intimate that although the methods for assessing the errors contained in criminal statistics are manifold, they have hitherto been of very limited effectiveness. It is therefore generally considered a practical approach to limit oneself to individual offence-types and to combine representative investigation designs with replication studies and quality checks even though, here too, methodological problems still remain to be solved.

25 On this controversy see an earlier publication by Mannheim 1974, p.128 et seq

26 Opp 1969.

Abortion is an example of such a case where methodological problems arise. In the opinion of the great majority of the experts in this field, abortion constitutes a very rare misdemeanor, compared with other categories of crime. As far as the detected cases are concerned, the available statistics provide reliable information. Although surveys can be conducted as we chose to do, problems still arise with respect to the dark field. In our survey,²⁷ we obtained very low values for the number of cases in which a punishable abortion had been performed. Since the only person in a position to disclose information is the offender, and also by virtue of the fact that - depending on the political affiliation - a great deal of insecurity exists as to the extent of the dark field, which its precisely what needs to be determined, it is almost impossible to conduct a statistical analysis even with the aid of survey designs which, seen from the methodological point of view, are very reliably constructed. At any rate, it is not feasible to project the percentage value generated by the survey onto the entire population since the real parameter of the population is unknown. Consequently, it is only possible to state the probability with which certain boundaries delimit this parameter. However, this confidence interval exhibits a very high range, precisely with respect to events which occur infrequently in the sample, even in the case of an error of the first kind of 5%.²⁸ In Table 2, this factor can be seen clearly for a selection of survey years.

To solve this problem, it would be necessary, from the statistical point of view, to increase the sample considerably, but one would very soon be confronted by problems of research efficiency and financial constraints. Hence, it is not totally erroneous to speculate about whether there are alternative methods of collecting data which can improve, complement or even replace conventional study designs.

3.2 Problems with so-called "victimless" acts

From the short description of the procedures most often employed in dark field research, it has already become obvious that major difficulties must emerge in the area of offences which have no concrete individual as the victim, in which the "victim" affected does not perceive the offence, or in which no one demands compliance with the statutory rule. These offences cover, for example, all crimes in which the object of legal protection is the "public at large", such as crimes against the environment. Also included are various white-collar crimes for which damage suffered by the individual is so minor that he or she cannot detect it or can do so only with great difficulty. For methodological reasons, we also include abortion in this cate-

²⁷ For greater detail see Liebl on abortion, unpublished manuscript, Freiburg, 1988.

²⁸ For the statistical reflections see Clauß and Ebner 1985, p.171 et seq.

gory though it goes without saying that this crime does involve a victim. The decision handed down by the BVerfG (Federal Constitutional Court),²⁹ removed whatever doubt still persisted with respect to the legal side of this issue. However, from the factual viewpoint, the constellation is a special one since, unlike murder and homicide (§§ 211, 212 German Penal Code), an offence in this case is rarely noticed by those who are not involved, and since the persons who are affected apart from the pregnant woman, are most often not interested in having the crime detected. "Victimless" crimes are thus characterized by the fact that that form of dark field research which is frequently the most reliable - victim-surveys - cannot be conducted, and by the fact that other procedures are impeded by additional circumstances. A glance at some of the studies conducted on abortion should reveal which circumstances we have in mind.

In the Federal Republic of Germany, numerous publications have appeared on the topic of abortion between 1965 and 1985. Only a few of them deal with empirical data. Altogether, we can name seven studies which fulfill the social-scientific criteria.³⁰ By far the most detailed and meticulous project is that conducted by Siebel et al. at the end of the 1960's in Trier, Heilbronn and Pforzheim. Siebel opted for an indirect form of behavioral research by conducting an informant survey among the women in his sample. His aim was to find out whether they had prior knowledge of abortions in the town in which they lived. The study revealed that the proportion of women who answered in the affirmative was much higher than that of other investigations in which the women were asked whether they had had an abortion themselves. However, in principle, it remains doubtful whether this procedure is able to shed light on the real frequency of abortion. The authors of the study themselves point³¹ to the fact that each "case" of a reported abortion is surrounded by a densely woven, and at the same time widely branching information and/or communications network. Generally, this results in a relatively large number of persons having knowledge of each case of abortion. If one also takes into account the fact that Siebel's informants drew their knowledge predominantly from their circle of acquaintances or from the "public sphere", it becomes impossible to specify a priori how great the error margin of the dark field estimation will be. Even this ingenious approach shows the fundamental difficulty involved in determining, even roughly, the real extent of violations of a "victimless" law.

Furthermore, Siebel interviewed a total of 90 physicians - mainly gynecologists - in the course of his investigation by administering a standardized questionnaire. The foremost aim of the physicians' survey was to "shed light on the causes

29 BVerfG (Federal Constitutional Court) Vol. 39, p.1 et seq.

30 See Table annexed.

31 See Siebel et al. 1968, p.87 et seq., p.126 et seq.

of miscarriages and premature deliveries and hence to draw certain inferences about the size of the 'dark figure'.³² In assessing the findings of the study, we are struck, on the one hand, by the relatively large number of refusals to disclose information and, on the other, by the fact that the estimates are almost equally distributed over the entire scale of categories. For this reason Siebel was also compelled to recognize that, although the physicians surveyed undeniably demonstrated the expected proximity to abortion-related problems, the informational content of their statements was by no means very high.³³

Furthermore, statistics from both physicians and hospitals were also analyzed in the study in question with the aim of "collecting, for each detectable case of a miscarriage within a specific period, all the relevant data which could serve to determine whether the miscarriage had been provoked or not, one of the results expected being clarification about some aspects of the dark figure".³⁴ However, in our opinion, great caution is advised as far as acceptance of the results of this incomplete census are concerned. For one thing the validity of the statements is undermined, from the start, by the fact that only a very small proportion of the gynecologists approached could be convinced to cooperate. Moreover, since the corresponding patient records were not kept by the physicians according to standardized criteria, the requisite survey density for a valid investigation was not guaranteed.³⁵ What is more, the questionnaires were filled out by the physicians themselves and not by persons who were uninvolved. Particular misgivings exist, however, with respect to the category scheme employed by Siebel. The factors which it used, *inter alia*, to establish which abortions were criminal, are derived - as far as the social data are concerned - from the analysis of court records. Here, at least in a subsection, as it were, the result of institutional selection processes is used as the key to the investigation of the dark field. Precisely this approach is apt, however, to further exclude those cases which were not pre-selected by the institutions of criminal prosecution. On the basis of this procedure, Siebel came to the conclusion that over 90% of all miscarriages were possible, very probable or unequivocal criminal abortions.

This example shows the dangers of a methodology which, though it disposes of sophisticated procedures for interpreting data, at the same time leaves entirely up to intuition the logically precursory decision as to what may or may not count as a relevant piece of information. Oevermann has pointed out on several occasions that such subsumptive methodologies are not only fraught with immense epistemo-

32 Siebel et al. 1968, p.91.

33 Siebel et al. 1968, p.99.

34 Siebel et al. 1968, p.155.

35 Siebel et al. 1968, pp.157-158.

logical problems, but might also have dilemmatic consequences in the evaluation of concrete data.³⁶

3.3 Surveys and the possibilities they offer

Surveys are, as we have already pointed out, by far the most frequent method employed in dark field research. They are, however, especially difficult to conduct in areas where victimological investigations are impossible and where the researcher must resort to using the information made available by the offender or informant.³⁷ This constraint is at the root of a number of problems, one of which is concerned with the "truthfulness" of the answers given by respondents.³⁸ The fact that survey responses are dependent on the specific context has long been the object of critiques of social science methods and of efforts aimed at improving what is known as "reactive" measurement procedures. At the center of these efforts is the realization that it is not really possible for respondents to "prevaricate" since, from the point of view of the history of theory, the assumption of "real values" in surveys is considered an outmoded idealization. In this respect, offender and informant surveys do not differ from other, similar studies. A further problem is posed by the discrepancy which exists between social cognitive competence in response behavior, and performance in daily conduct. Macro-sociological analyses can already indicate certain differences in this respect.³⁹ This discrepancy becomes quite patent when using offender-surveys in the study of delinquent behavior. Consequently, it is obvious that only victim surveys constitute a genuine corrective to biases in self-reported delinquency. Where such surveys cannot be conducted, knowledge gleaned from research is forcibly sketchy. Thirdly, and finally - as Oevermann⁴⁰ has pointed out - the fundamental methodological reservations already mentioned above, also emerge in surveys. Standardized investigations always harbour the danger of systematically neglecting the concrete experiences of the respondents. It is possible to observe that, in principle, the less experience respondents have with regard to the question, the more the answers are biased in the direction of the meaning suggested in the survey tool. Conversely, answers supported by personal experience contain nuances of meaning which should first be explored hermeneutically. The ever-present assumption in standardized sur-

36 Oevermann 1986; Oevermann et al. 1979; Oevermann et al. 1985.

37 In this study we shall not discuss the fact that surveys themselves have a dark field; see, however, Hermann and Streng 1986.

38 On the following, also see Esser 1986.

39 Bora and Liebl 1986.

40 Lecture on structural hermeneutics held on 20.06.1987 at the Max Planck Institute for Foreign and International Penal Law in Freiburg.

veys is, however, that all the respondents have understood the question in more or less the same way⁴¹ - an assumption that is only rarely double-checked. This failure could always be tolerated in cases where enough possibilities exist for comparing and cross-checking the results with the findings yielded by other methods. However, in the case of the dark field, and especially in that of "victimless" crimes, this would be no easy task. Here the question arises as to whether, in the first step of the data collection procedure, a judicious starting point for the extrapolation of standardizations and categories - which invariably represent curtailing, subsumptive procedures - could not be provided by a reconstructive case analysis. In the study which he carried out for the Bundeskriminalamt (Federal Office of Criminal Investigation),⁴² Oevermann endeavoured to outline the form which such an approach could take.

The difficulties outlined here are reflected in the outcome of those investigations which have attempted, via surveys, to determine the frequency of abortions.⁴³ Information on the number of abortions performed can be found in particular in Giese and Schmidt (1968), in the replication study conducted by Clement (1986), as well as in a study carried out by Gruner & Jahr Publishers in 1978. According to the latter, the proportion of women who admitted having had at least one abortion is approximately the same as in the Giese and Schmidt study from 1966. On the other hand, the surveys conducted among female students by Giese/Schmidt and later by Clement, yielded a clear increase, over the fifteen-year interval, in the proportion of women who admitted to having had an abortion. However, it still cannot be clarified whether the increase in these figures can be attributed to a behavioral change, to an increased willingness to disclose information, or both. There are plausible grounds for all three assumptions. However, if clarification is to be forthcoming, it can only be expected via the development of types derived from the reconstruction of individual cases which could, in turn, serve as the basis for standardized surveys.

3.4 The meaningfulness of dark field studies

In conclusion, the general meaningfulness of dark field studies can henceforth be described as follows: thus far, the objections raised in the pertinent literature mainly focus on the improvement of statistical procedures or standardized data collection methods.⁴⁴ In particular the problems of so-called "reactive" measurement

41 Oevermann op. cit.

42 Oevermann et al. 1985.

43 See Table annexed.

44 See references in note 18.

procedures, such as the truthfulness of respondents, recall performance, questions of self-assessment and the like, are in the forefront. In contrast, it was our aim to focus attention on an aspect which has hitherto been neglected, by attempting to point out that the very construction of many studies is fraught with implicit premises which render the interpretation of the resultant data more difficult, if not totally impossible.

As a result, the meaningfulness of dark field studies will not only depend on using as many methods as possible to control each other but will demand reconstructive procedures which are the first to facilitate an adequate understanding of structural selection processes. Along the same lines, it is quite conceivable that "primary" selections could be recognized by looking at the structure of institutional action alone. Dark field estimates using conventional procedures could then serve the specific purpose of verifying the hypotheses generated in this way.⁴⁵ The advantage of this approach, compared with conventional ones, would be not only a reduction in expenditure, but also increased meaningfulness of studies by ensuring a controlled and systematic generation of hypotheses with the aid of case reconstructions.

Tables

Table 1: Confidence intervals of projected abortions

Year	5 % level		1% level	
1976	116,308	π 18,364	133,142	π 1,530
1977	191,043	π 56,549	212,439	π 35,152
1978	205,311	π 64,351	226,761	π 42,901
1979	217,246	π 72,415	240,357	π 49,304
1980	194,076	π 57,447	215,813	π 35,710

⁴⁵ Oevermann called attention in his lecture to the nature of reconstructive procedures as generative of hypotheses; see also Peirce 1967, p.373 et seq.; von Freytag-Löringhoff 1972, p.125 et seq.

Table 2: Empirical research conducted between 1966 and 1986 which, inter alia, deal with § 218 of the German Penal Code

Author(s) or editor(s)	Year*	SP**	Population	N of cases	Sample	Sampling procedure	Method(s)	Object
Giese and Schmidt	1968	1966		3,666	12 universities	Random selection	Written questionnaire (postal)	Sexuality; Conduct relative to and opinion of § 218
Siebel et al.	1971	1967/68	Residents of the towns of Trier, Heilbronn ...	1) 568	1) Women 18-65 years old	1) Random selection	1) Standardized interview	1) Knowledge density, indirect behavioral research, opinion of § 218
				2) 90	2) Physicians	2) Weighting according to speciality	2) Standardized interview	2) "Expert knowledge", attitude towards and opinions of § 218
				3) 621	3) Court records	3) All cases between 1950/1967	3) Record analysis	3) Forms taken by abortion-related criminality
			4) 411	4) Physician and hospital statistics	4) (only a few physicians and hospitals, prepared to cooperate)	4) Evaluation of patients' records	4) Investigation of miscarriages with the view to the possibility of criminal abortion	
... and Pforzheim								
GETAS Bremen, Gruner and Jahr Publishers	1978		Women in the Federal Republic of Germany	2,898	Women between the ages of 18 and 45	Weighted according to ADM-area sampling	Written survey in the course of an extensive standardized interview	Sexuality; conduct with respect to and opinion of § 218
Clement	1986	1981	Students	1,922	12 universities	Random selection	Replication study based on Giese and Schmidt 1968	Sexuality; conduct with respect to and opinion of § 218
Zundel, Laimer and Schönhals	1982	1977	Population of the Federal Republic of Germany	2,510	Persons between the ages of 16 and 60	Random selection, in addition to over-represented sub-groups	Standardized interview	Attitude toward and opinion of § 218
GETAS Bremen (ALLBUS)	1982	1981	Population of the Federal Republic of Germany	2,991	German nationals, 18 years and more	ADM-Master sample	Standardized interview	Attitude toward and opinion of § 218
GETAS Bremen (ALLBUS)	1986	1985	Population of the Federal Republic of Germany	3,099	German nationals, 18 years and more	ADM-Master sample	Standardized interview	Attitude toward and opinion of § 218

* Year of publication ** survey period

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Donnen, Jacques (psychologist)	1987
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