Can social psychological attitude measures be used to study language attitudes?

A case study exploring the Personalized Implicit Association Test

Laura Rosseel, Dirk Speelman & Dirk Geeraerts
KU Leuven
QLVL
Leuven, Belgium
laura.rosseel@kuleuven.be

Abstract— **In the field of social psychology, a wide range of implicit attitude measures have recently been developed. These measures have hardly been used in linguistic attitude research so far. This paper presents a case study exploring the potential of one of these social psychological measures, the Personalized Implicit Association Test, in order to find out whether it can be useful for the study of language attitudes. In the case study, the Personalized Implicit Association Test is applied to measure attitudes towards regional varieties of Dutch in Belgium and Standard Belgian Dutch.[1]**

Keywords—implicit attitude measures; language attitudes; regional variation; Dutch; Personalized Implicit Association Test

BACKGROUND

Since the 1960s, language attitude research has known little methodological innovation [1]. Attitude research in social psychology, on the contrary, has witnessed the development of a multitude of new techniques to measure implicit attitudes over the past two decades. These social psychological techniques are not only widely used to study attitudes toward a large variety of phenomena within (social) psychology (e.g. racism [2], self-mutilation [3], gender stereotypes [4], self-esteem [5], alcoholism [6]), but they have also been adopted in several other research fields such as psychiatry or marketing (e.g. [7], [8]). Linguistic attitude research, however, has not started to explore the potential of these new measures (until very recently: [1], [9], [10], [11]). Against this background, our research focuses on a methodological hypothesis and tries to answer the question whether these newly developed social psychological techniques can be applied to measure language attitudes.

In this paper we discuss the results of a case study exploring the potential of one such social psychological measure, the Personalized Implicit Association Test (P-IAT), as a measure for language attitudes. The case study focuses on attitudes towards regional varieties of Dutch in Belgium and Standard Belgian Dutch (SBD). Two regional varieties were selected for this study: a central variety (Antwerp regiolect) and a peripheral variety (West-Flemish regiolect). The

participants included in the study originated either from Antwerp (centre of the Dutch language area in Belgium) or West-Flanders (periphery of the Dutch language area in Belgium). Based on previous research including the same varieties, but using different methods [1], in addition to anecdotal evidence, we expected to find each participant group to prefer their own regional variety over the other group's variety. However, as regards attitudes towards SBD, participants from West-Flanders, the peripheral area, were expected to show more positive attitudes towards the standard than their counterparts from the central Antwerp area who were expected to prefer their regiolect over SBD. These hypotheses are summarised in Fig. 1 below.
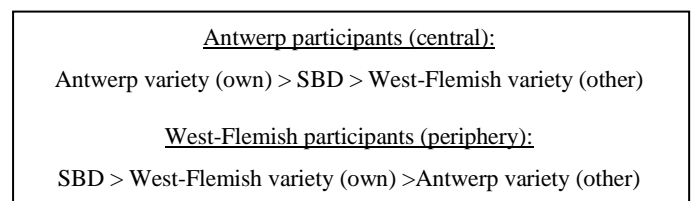

Antwerp participants (central):

Antwerp variety (own) > SBD > West-Flemish variety (other)

West-Flemish participants (periphery):

SBD > West-Flemish variety (own) >Antwerp variety (other)

Fig. 1. Hypotheses based on findings in [1]

METHOD

As explained above, the method used in our study is the Personalized Implicit Association Test [12], an adaptation of the Implicit Association Test [13]. The P-IAT measures the association between a binary target and a binary attribute concept by comparing reaction times in a number of categorisation tasks. In our experiment, the three language varieties (Antwerp regiolect, West-Flemish regiolect and SBD) were used in pairs as the target concept and valence (I like vs. I don't like) functioned as the attribute concept. In other words, the association between language variety and liking vs. disliking was measured.

The P-IAT consists of a number of trials in which a stimulus representing the target or attribute concept has to be categorised. Participants are instructed to categorise the stimuli according to the target or attribute categories using two

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Fig. 2. Example of a trial in a P-IAT

response keys. Each response key corresponds to one of the target and one of the attribute categories (e.g. 'variety x + I like' for the left-hand key and 'variety y + I don't like' for the right-hand key). Fig. 2 gives a visual representation of a trial in a P-IAT. The categories mapped onto the response keys are always displayed in the top corners of the screen. Depending on whether the target and attribute categories are mapped onto the response keys in a combination congruent or incongruent with one's attitudes, categorisation of the stimuli will be easier or harder, respectively. This difference in ease of categorisation will result in a difference in reaction times in the categorisation tasks: faster responses if the mapping of the target and attribute categories onto the response keys are in line with one's attitudes, slower responses if the opposite is true. Participants' reaction times in the categorisation tasks are measured in two sets of trials: one set with the target and attribute categories mapped in one way, and another with the categories mapped in the reverse way. Reaction times are then compared between the two sets of trials using a scoring algorithm [14] that indicates which associations a participant holds vis-à-vis the varieties included in the experiment.

As discussed in more detail in [15] and [22], the main motivation to choose the P-IAT amongst the many social psychological measures on offer is firstly its good psychometric properties. A large number of previous studies have shown that the IAT and most of its variants are reliable and valid methods to measure attitudes (see for instance [16] for an elaborate discussion). A second advantage, specific to the P-IAT, is its focus on personal associations. The P-IAT is designed to measure personal rather than extra-personal associations [12] (although this distinction is not entirely uncontroversial). Extra-personal associations are associations many people are familiar with because they encounter them often, yet may not necessarily endorse. For example: most people are familiar with the association between vegetables and being healthy, hence a positive association with vegetables. Yet, some people still dislike vegetables and as a result also have a negative association with them. It is this last type of personal associations the P-IAT was designed to capture. A discussion of further advantages, but also disadvantages of the IAT paradigm can be found in [15] and [22].

A. Participants

Participants in the experiment were students originating from and living in either West-Flanders or Antwerp. They were recruited at two university campuses in the respective regions. In total 192 participants took the P-IAT. Data of 14 participants was excluded, because they did not originate from the desired regions. In addition, two influential outliers were removed from the analysis, because they distorted the results unduly. Our sample contained 102 males and 74 females with an average age of 20 years old ($SD = 1.79$).

B. Stimulus materials

To represent the target varieties, we used 6 auditory stimuli controlled for length, valence, frequency and familiarity. For the attribute stimuli, 5 positive and 5 negative colour pictures were selected from norm data [17], [18]. All stimuli were selected from [1] to ensure a certain degree of comparability with the results of that study which investigates attitudes towards the same varieties of Dutch.

C. Experiment design and scoring procedure

Table 1 summarizes the between subject design of our experiment. Since the structure of the P-IAT requires the target (and attribute) concept to be binary, the three varieties could not be included in one experiment. Therefore, two versions of the experiment were devised: one comparing the Antwerp variety and SBD (experiment A in Table 1), the other containing the West-Flemish variety and SBD (experiment B in Table 1). A between subject design was used, because the (P)IAT is known to suffer from practice and fatigue effects due to which the size of the IAT effect tends to diminish if a participant takes more than one subsequent test [23]. All experiments were conducted individually in a quiet, dimly lit room using a laptop. A headset was used for the sound. The experiment was programmed using Affect 4.0 [19].

The reaction times measured in the experiment were used to calculate D-scores, which are difference scores of average latencies between the two sets of trials with reversed response key mappings [14]. The D-scores were analysed using multiple linear regression.

RESULTS AND DISCUSSION

The results show a significant preference for SBD for each participant group in both experiments. This is clear in Fig. 3 in which positive D-scores indicate a preference for SBD while negative scores denote a preference for the regional variety. In experiment B, this preference was stronger for Antwerp participants than for West-Flemish participants. In experiment

TABLE I.   BETWEEN SUBJECT EXPERIMENT DESIGN WITH PARTICIPANT NUMBERS

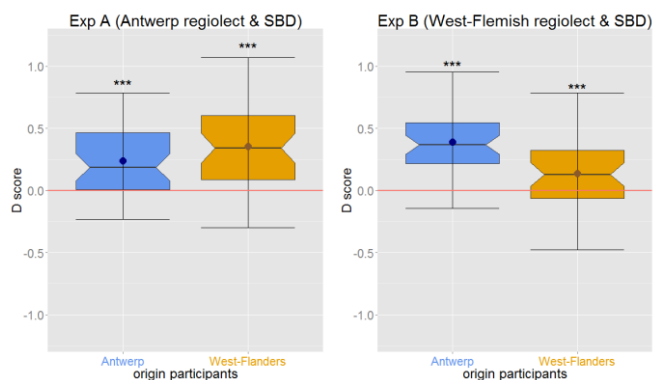|		A	B
	Target varieties	*Antwerp – SBD*	*West-Flemish – SBD*
Origin participants	*Antwerp*	45	45
	West-Flanders	45	41

Fig. 3. Boxplots of D-scores in experiment A and experiment B. Positive D-scores indicate a preference for the standard, negative D-scores a preference for the regional variety included in the experiment.

A, no significant difference in preference for SBD was observed between participants from the two regions.

When we compared attitudes of each participant group across both experiments, we found that the strength of participants' preference for the standard variety significantly differs between the experiment that contains their own regiolect and the experiment featuring the other group's regiolect. This pattern can be interpreted from two perspectives. On the one hand, the difference can be described as a decrease in appreciation for SBD in the experiment containing one's own variety and hence as evidence of in-group preference. On the other hand, it can be interpreted as an increase in appreciation for SBD as a normative reflex when presented with the other group's regiolect which participants then experience as dialectical.

Comparing these findings with our hypotheses (Fig. 1), we can confirm each group's preference for their own regiolect over the other group's regiolect. We also found that West-Flemish participants' attitudes towards SBD are more positive than those towards their own variety. However, we could not find any evidence for the predicted pattern that Antwerp participants' attitudes towards their own variety would be more positive than their attitudes towards SBD.

There are several possible explanations why our results partially deviate from the hypotheses which were mainly based on the study reported in [1]. For reasons of limited space, we will restrict our discussion to one of these explanations which relates to the structure of the P-IAT. A more extensive and thorough discussion exploring the influence of the different methods used in this study and [1] on their respective results can be found in [15]. As mentioned above, the P-IAT's structure is inherently binary and comparative, which is not entirely the case for the method used in [1] (auditory affective priming). Both experiment A and experiment B contained SBD alongside one of the regiolects. Taking into account the standard language ideology that came out of the top-down standardisation history of Dutch in Flanders which celebrates SBD as the only best language variety, one could envisage the possibility that the mere presence of the standard variety in both experiment A and B prevented measuring any positive attitudes vis-à-vis the regiolects. This influence of the presence

of SBD on the measurement of attitudes towards other varieties is also pointed out by [21] in the context of the speaker evaluation paradigm. In this respect, it would have been interesting to include a third experiment containing both regiolects in the design of the study[2]. This is an avenue we intend to pursue in future research.

To conclude, a brief provisional evaluation of the P-IAT's potential as an implicit measure of language attitudes seems appropriate. Again, for an elaborate discussion we refer the reader to [15]. Overall, we've been able to successfully measure language attitudes using the personalized version of the IAT. In addition, the method has been proved to be a reliable and valid measure in previous studies [16], and we plan on carrying out research that can further back up that evidence specifically for the P-IAT as a measure of language attitudes. Another advantage of the (P-)IAT is that it is very difficult for participants to influence the results of the method deliberately even if they are aware of the goal of the experiment [21]. Alongside the successes of three other recent linguistic studies exploring the standard variant of the IAT [9], [10], [11], our study provides a further indication of the potential the IAT paradigm holds for linguistic attitude research.

Despite these first promising results, it is necessary to point out a number of limitations inherent to the P-IAT. First of all, as became clear in the discussion above, the binary and comparative structure of the P-IAT can be problematic in certain cases. Another aspect that might be inconvenient in some studies is the necessity to provide labels for the target and attribute categories in the experiment. Not only is it hard to be certain both researcher and participant connect the same phenomena to the labels used in the experiment, in certain cases, it can prove to be difficult to come up with labels for particular language phenomena that are intelligible for a layperson, as participants in language attitude studies are not usually trained linguists. A final drawback of the IAT paradigm we will mention here is the lack of context provided in the experiments. We are currently working on methods to include situational context in a P-IAT experiment. Yet, that does not change the fact that the stimuli need to be as short as possible to guarantee the implicit character of the technique.

Despite these limitations, we think the P-IAT, and perhaps other, yet unexplored social psychological implicit attitude measures provide promising new avenues for methodological innovation in linguistic attitude research. Yet, by no means do we argue for such measures to replace the traditional sociolinguistic methods used in language attitude research. Rather, we suggest to use them in a complementary way alongside each other to obtain a picture that is as complete and nuanced as possible.

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[2] Note, however, that it is never possible to measure absolute attitudes towards the target categories with a P-IAT. The method only gives an indication of whether one category is perceived more or less positively/negatively than the other without reference to a neutral bench-mark. This means one can never be certain whether the attitudes towards either category are overall positive or negative.

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