

USING IMPLICIT MEASURES TO READ THE MINDS  
OF UNDECIDED VOTERS

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Many voters in democratic societies have clear political preferences, which are often reflected in their personal identification with a particular party. For some voters, these preferences are highly stable, in that they last for a lifetime. For others, preferences change over time as a result of major life events, such as the experience of starting a family, becoming CEO of a major company, or losing one's job. In most of these cases, it is relatively easy for pollsters to identify the preferences of voters for the prediction of election outcomes. They can simply ask them for which party or candidate they intend to vote. Such self-reports are usually quite reliable in the prediction of actual voting behavior.

In virtually every election, however, there is also a group of people who report being undecided. In fact, the proportion of undecided voters among the overall electorate is often large enough to determine the final election outcome. Thus, one of the most challenging tasks for pollsters is to predict the future choices of undecided voters. Simply asking them about their preferences does not do the job, because undecided voters will simply report that they are undecided. In early 2001, shortly before the Italian General Election, Luciano Arcuri had the seminal idea that it might be possible to predict future choices of undecided voters by means of *implicit measures*. In the current chapter, we review (a) the available evidence in support of this idea and (b) novel findings regarding the psychological processes underlying this phenomenon. Taken together, these results not only have the potential to fundamentally change the current way of political polling;

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they also have major implications for political campaigning and the psychology of decision-making.

#### WHAT ARE IMPLICIT MEASURES?

In the social psychological literature, the term *implicit measure* is commonly used to refer to a particular class of measurement procedures, which assess automatic mental associations by means of participants' performance on experimental tasks (for an overview, see Gawronski & Payne, 2010). One of the most prominent examples is the Implicit Association Test (IAT) developed by Greenwald, McGhee, and Schwartz (1998). The IAT is a computerized task, in which words and/or pictures representing two dichotomous dimensions have to be categorized as quickly as possible by pressing one of two response keys. The two critical blocks of the IAT involve combinations of the two binary categorization tasks: one in which the two dimensions are combined in an association-congruent manner and one in which the two dimensions are combined in an association-incongruent manner. For example, in an IAT to assess automatic evaluative associations regarding Barack Obama versus John McCain, participants may be presented with positive and negative words and pictures of Obama and McCain, which have to be classified as positive and negative or as depicting Obama or McCain, respectively. In one of the two critical blocks, the two categorization tasks are combined in a manner, such that participants have to respond to positive words and pictures of Obama with one key, and to negative words and pictures of McCain with the other key. In the other critical block, the two categorization tasks are combined in the reverse manner. That is, participants have to respond to positive words and pictures of McCain with one key, and to negative words and pictures of Obama with the other key. The basic idea underlying the IAT is that quick and accurate responses are facilitated when the key mapping in the task is congruent with participants' automatic evaluative associations regarding Obama and McCain, but inhibited when the key mapping is association-incongruent. Based on this consideration, the mean difference in participants' response latencies in the two blocks is typically interpreted as an index of automatic preferences, for instance automatic preferences for Obama over McCain or the other way round, depending on the calculation of the difference score (for details on the scoring of IAT data, see Greenwald, Nosek, & Banaji, 2003).

What is particularly remarkable about implicit measures is that their scores often do not converge to explicit self-reports of the same construct (for a meta-analysis, see Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005). For instance, research on prejudice has repeatedly found that people report favorable or neutral evaluations of stigmatized groups on explicit self-report measures and,

at the same time, show automatic negative associations on implicit measures (e.g., Nosek et al., 2007). Moreover, whereas explicit measures have been shown to outperform implicit measures in the prediction of deliberate, intentional behavior (e.g., verbal responses of White participants in interactions with a Black person), implicit measures have been shown to outperform explicit measures in the prediction of spontaneous, unintentional behavior, (e.g., nonverbal responses of White participants in interactions with a Black person; for reviews, see Friese, Hofmann, & Schmitt, 2008; Perugini, Richetin, & Zogmaister, 2010).

In considering these findings, it is worth noting that Luciano Arcuri's idea to predict future choices of undecided voters with implicit measures did not fit very well to the mainstream way of thinking in social psychology at that time. First, it seemed inconsistent with the well-established finding that implicit measures predict spontaneous, unintentional behavior, but not deliberate, intentional behavior. After all, voting can be assumed to be a highly deliberate, intentional behavior; it seems rather unlikely that people find themselves in the voting booth unintentionally voting for the wrong party or candidate ("Ups, I just voted for the wrong guy again."). Second, political preferences are among the very few domains that show very high correlations between implicit and explicit measures, typically in the range of  $r = .70$  (Nosek, Graham, & Hawkins, 2010). Such high correlations suggest that implicit and explicit measures are largely redundant in the political domain, questioning the usefulness of implicit measures over and above what is already known from explicit measures. In fact, Tony Greenwald – the inventor of the IAT – mentioned to the first author of this chapter at a conference a few years ago that he was initially quite skeptical when Luciano Arcuri told him about his idea. Why should implicit measures predict behavior that is highly deliberate and intentional? And why should implicit measures be useful in a domain in which explicit and implicit measures are pretty much redundant? As it turned out, Luciano Arcuri's intuition was right.

#### AUTOMATIC ASSOCIATIONS AND THE PREDICTION OF FUTURE CHOICES

The first evidence for the usefulness of implicit measures in predicting voting behavior came from a study by Arcuri, Castelli, Galdi, Zogmaister, and Amadori (2008). Approximately four weeks before the 2001 Italian General Elections, the authors recruited 74 registered voters from urban districts of Milan to complete an IAT designed to assess their automatic evaluative associations regarding the two major coalitions: the right-wing coalition headed by Silvio Berlusconi (*Casa delle Libertà*) and left-wing coalition headed by Francesco Rutelli (*Ulivo*). In addition to completing the IAT, participants were asked whether they had already made a decision for whom they are going to vote, and if so, to report their preferred coal-

tion. A week after the election, all participants were contacted again and asked for whom they had voted.

Results showed that for those who had already made up their minds four weeks before the election, IAT scores significantly differed as a function of whether they had voted for the right-wing or the left-wing coalition. Specifically, those who voted for the right-wing coalition showed more favorable associations for the right-wing coalition, whereas those who voted for the left-wing coalition showed more favorable associations for the left-wing coalition. More importantly, of the 28 participants who described themselves as undecided, IAT scores four weeks before the election were significantly related to their actual voting behavior. Whereas those who showed an automatic preference for the right-wing coalition were more likely to vote right-wing, those who showed an automatic preference for the left-wing coalition were more likely to vote left-wing.

Further evidence for the potential of implicit measures in predicting future choices of undecided voters comes from a follow-up study, conducted during the 2005 Local Elections in the region of Veneto in Italy. In this study, Arcuri and colleagues (2008) recruited 58 registered voters who described themselves as undecided. Approximately four weeks before the election, the participants completed an IAT designed to assess their automatic evaluative associations regarding the right-wing candidate Giancarlo Galan versus the left-wing candidate Massimo Carraro. After the election day, all participants were asked to complete a brief survey on their voting behavior. Replicating the findings of the 2001 General Election study, results showed that IAT scores four weeks before the election were significantly related to participants' actual voting behavior. Whereas those who showed an automatic preference for Giancarlo Galan were more likely to vote for Galan, those who showed an automatic preference for Massimo Carraro were more likely to vote for Carraro.

#### THE DIFFERENTIAL ROLE OF AUTOMATIC ASSOCIATIONS AND CONSCIOUS BELIEFS

Encouraged by the promising findings by Arcuri and colleagues (2008), we wanted to dig a little deeper by investigating the differential relations of automatic associations and conscious beliefs to the future choices of decided and undecided participants (Galdi, Arcuri, & Gawronski, 2008). Expecting a double dissociation, we hypothesized that automatic associations would predict future choices for undecided, but not for decided, participants, whereas conscious beliefs were expected to predict future choices for decided, but not for undecided, participants. To test this hypothesis, we recruited 129 residents of the city of Vicenza in Italy to complete various measures designed to assess their attitudes toward the enlargement of a local U.S. military base. At the time of our data collection (October

to December 2007), the enlargement plans were highly controversial, leading to a strong polarization among the residents of Vicenza. In our study, participants were initially asked whether they are in favor of the enlargement plans, against the enlargement plans, or still undecided. Afterwards, they were asked to complete a survey on their conscious beliefs about environmental, political, economic, and social consequences of the enlargement. Finally, participants completed a variant of the IAT (Karpinski & Steinman, 2006) designed to assess their automatic evaluative associations regarding the U.S. military base. A week later, all participants were contacted again to complete the same battery of measures a second time.

For participants who reported being decided during the first session, their position during the second session was uniquely predicted by their conscious beliefs about the consequences of the proposed enlargement; automatic associations assessed with the IAT did not contribute the prediction of their future position. In contrast, for participants who reported being undecided during the first session, their position during the second session was uniquely predicted by their automatic associations reflected in the IAT; conscious beliefs about the consequences of the proposed enlargement failed to predict their future position. Interestingly, our findings further showed that for undecided participants changes in conscious beliefs over time were predicted by automatic associations during the first session. Conversely, for decided participants changes in automatic associations over time were predicted by their conscious beliefs during the first session. These results suggest that automatic associations led undecided participants to adopt conscious beliefs about the consequences of the enlargement plans that were congruent with these associations, thereby influencing their deliberate decision to favor or oppose the enlargement plans. For decided participants, in contrast, it seems as if conscious beliefs became automatized over time, implying a consolidation of conscious beliefs at the level of automatic associations.

#### BIASED INFORMATION PROCESSING AS A MEDIATING MECHANISM

When we started to search for a mediating mechanism that explains our findings, biased information processing quickly came up as a potential candidate. A number of studies have shown that automatic associations have the capacity to bias the processing of ambiguous information in a manner that is consistent with the meaning of previously existing associations (e.g., Gawronski, Geschke, & Banse, 2003; Hugenberg & Bodenhausen, 2003). A useful example to illustrate such effects is a study by Hugenberg and Bodenhausen (2003) on biases in face perception. In their study, White participants were presented with short movie clips in which the facial expressions of Black and White faces changed either from frowning to smiling or from smiling to frowning. The faces were generated by means of

a computer software that allowed the researchers to manipulate the apparent race of the target faces through changes in skin color and hair style while keeping the physiognomic structure of the faces identical. Depending on the particular condition, participants' task was to press a key (a) as soon as they saw hostility in the target's face when its expression changed from smiling to frowning and (b) as soon as they saw no hostility in the face anymore when its expression changed from frowning to smiling. Results showed that participants identified hostility earlier and for a longer period when the faces were Black than when they were White, even though the faces were identical except for their skin color and hair style. Importantly, the relative size of these effects was predicted by automatic associations – but not by conscious beliefs – regarding Blacks, such that enhanced perceptions of hostile expressions in Black faces increased as a function of automatic negative associations regarding Blacks (for similar findings, see Gawronski et al., 2003).

The influence of automatic associations on the interpretation of ambiguous information seemed like a prime candidate to explain the capacity of implicit measures in predicting future choices of undecided individuals. For instance, during televised debates between political candidates, there is rarely a clear “winner” or “loser.” Instead, performance perceptions tend to be highly subjective, in that some people come to the conclusion that one candidate did the better the job, whereas other people come to an entirely different conclusion. To the extent that automatic associations influence the perception of such ambiguous information in undecided voters, the beliefs resulting from their biased perceptions may serve as a basis for future political choices. From this perspective, their choices may be described as entirely rational, because they are based on a reasonable set of supportive beliefs. At the same time, however, these choices can be described biased, because the interpretation of the information that underlies these beliefs has been distorted by automatic associations.

Even though we were initially quite confident about these speculations, none of our studies on biased interpretation of ambiguous information provided empirical support for these claims. After a series of studies, however, selective exposure to unambiguous information (see Hart et al., 2009) eventually provided the missing piece in the puzzle. Specifically, we found that undecided individuals tend to selectively expose themselves to information that is consistent with their automatic associations, which in turn leads them to adopt conscious beliefs that are in line with their previously held automatic associations (Galdi, Gawronski, Arcuri, & Friese, 2010). To the extent that these newly formed beliefs serve as the basis of future decisions, automatic associations have the potential to predict future choices of undecided voters, because of the biasing influence of these associations on the type of information to which they expose themselves.

In one empirical demonstration of this effect (Galdi et al., 2010), 113 residents of Northern Italy were asked whether they are in favor of the integration

of Turkey into the European Union, against the integration of Turkey into the European Union, or undecided. Immediately afterwards, participants were asked to complete a variant of the IAT (Karpinski & Steinman, 2006) designed to assess their automatic evaluative associations regarding the inclusion of Turkey into the European Union. Finally, all participants answered a number of survey questions about their conscious beliefs regarding Turkey's inclusion into the European Union, including questions on cultural, social, economic, and religious issues. A week later, participants were given a selective exposure task in which they were presented with several pairs of headlines from Italian newspapers. The pairs of headlines were selected, such that one of them suggested an article that favors Turkey's inclusion into the European and the other one suggesting an article that opposes Turkey's inclusion. For each pair of headlines, participants were asked to indicate which article they preferred to read. After completion of the task, participants were invited to read the articles they had chosen. After reading the articles, participants completed the IAT and the survey measure a second time.

Results showed that both decided and undecided participants selectively exposed themselves to particular information, albeit with different antecedents and consequences. For decided participants, we found that they selectively exposed themselves to information that confirmed their conscious beliefs; automatic associations were unrelated to the type of information to which they exposed themselves. In contrast, undecided participants selectively exposed themselves to information that was consistent with their automatic associations; with their conscious beliefs being unrelated to the type of information to which they exposed themselves. Moreover, selective exposure led undecided participants to adopt conscious beliefs that were in line with their pre-existing automatic associations. Conversely, for decided participants selective exposure shifted automatic associations in a direction that was in line with their pre-existing conscious beliefs. Applied to current question, these results suggest that implicit measures are capable of predicting future choices of undecided individuals, because undecided individuals tend to selectively expose themselves to information that is consistent with their automatic associations, which leads them to adopt conscious beliefs that are in line with their pre-existing automatic associations.

#### WHERE DO AUTOMATIC ASSOCIATIONS COME FROM?

An important question in this context is: how are automatic associations of undecided voters formed in the first place? According to Gawronski and Bodenhausen's (2006, in press) associative-propositional evaluation (APE) model, automatic associations can be formed either directly through the observation of repeated co-occurrences of objects and events or indirectly through the acquisition

of verbal information about an object. Whereas the former process is captured by the notion of *associative learning*, the latter process is usually described as *propositional learning*. Reflecting the concept of associative learning, research on evaluative conditioning (EC) has shown that repeated pairings of a neutral conditioned stimulus (CS) with a positive or negative unconditioned stimulus (US) creates a mental association between the CS and the US in memory, which in turn produces evaluative responses to the CS that are in line with the valence of the US (e.g., Walther, Gawronski, Blank, & Langer, 2009; for a review, see De Houwer, Thomas, & Baeyens, 2001). The notion of propositional learning is most prominently reflected in research on persuasive communication, in which the acquisition of verbal information about an attitude object leads to changes in the evaluation of that object (e.g., Whitfield & Jordan, 2009; for a review, see Johnson, Maio, & Smith-McLallen, 2005). From the perspective of the APE model, the critical difference between the two cases is that EC effects are assumed to involve a direct formation of a new association in memory independent of the perceived validity of that association, whereas the formation of associations resulting from persuasive communication is assumed to be mediated by a propositional assessment of the validity of the relevant message (Gawronski & Bodenhausen, 2006, in press).

An interesting example of how these two processes may operate in the political domain is negative campaigning. Instead of advocating for their own political agenda, candidates often try to discredit their opponents by communicating negative information about them. From the perspective of the APE model, negative campaigns represent a very interesting case, because of the multiple ways in which associative and propositional processes may influence evaluations of both the source and the target of the campaign. With regard to the target, negative campaigns can be interpreted as persuasive messages that may indirectly create new associations in memory to the extent that the recipients perceive the contents of the campaign as valid (propositional learning). At the same time, repeated exposure to a negative campaign may lead to a direct formation of a mental association between the target and the negative content of the message, independent of whether the recipient considers the content of the message as valid or invalid (associative learning). Interestingly, negative campaigns also have the potential to backfire, in that they can produce negative evaluations of the source. For instance, research on the transfer of attitudes recursively (TAR) effect has shown that recipients of persuasive messages draw negative inferences about individuals who communicate negative views about other people (Gawronski & Walther, 2008). As a result of these inferences, the sources of negative messages become indirectly associated with a negative evaluation in memory (propositional learning). Similarly, research on spontaneous trait transference (STT) has shown that message sources can become associatively linked to the traits they describe in others (Skowronski, Carlston, Mae, & Crawford, 1998), which suggests that the sources of negative

campaigns may become directly associated with the negative contents of their messages (associative learning).

Preliminary evidence for these assumptions comes from a study by Carraro, Gawronski, and Castelli (2010) who investigated the effects of positive versus negative campaigns on automatic associations and conscious beliefs regarding the sources and the targets of these campaigns. Their results showed that conscious beliefs about the source, but not the target, were less favorable when participants were exposed to a negative campaign than when they were exposed to a positive campaign. Moreover, automatic associations tended to be less favorable for both the source and the target when the campaign was negative than when it was positive. Interestingly, none of these effects were qualified by the reported party preferences of the participants and the ostensible party affiliation of the two candidates. In combination with the reviewed findings on decision processes in undecided voters, Carraro et al.'s findings suggest that negative campaigns may alienate undecided voters from both the sources and the targets of these campaigns. To the extent that negative campaigns create negative associations with regard to both the sources and the targets of these campaigns, and given that automatic associations influence future choices of undecided voters by means of the type of information to which they expose themselves, undecided voters may eventually vote for none of the two candidates. In elections that are dominated by two competing parties or candidates (e.g., the presidential elections in the United States), these processes may lead to reduced voter turnout as a result of negative campaigns (e.g., Ansolabehere & Iyengar, 1995; Ansolabehere, Iyengar, Simon, & Valentino, 1994; Kahn & Kenney, 1999; Lau & Pomper, 2001). In elections that involve more than two parties or candidates (e.g., the general elections in many European countries), negative campaigns involving two dominant parties or candidates could possibly lead to an advantage for less dominant competitors. Future research may help to provide deeper insights into these interesting questions.

#### LESSONS LEARNED

Despite the initial skepticism, implicit measures have clearly established themselves as an important research tool in political psychology over the past few years (for a review, see Nosek et al., 2010). Since the early work on undecided voters (Arcuri et al., 2008; Galdi et al., 2008), there have been a number of studies that corroborate the usefulness of implicit measures in providing deeper insights into the determinants of political decisions. For example, using data from a nationally representative sample, Rocco and Zogmaister (2010) found that the IAT significantly improved the prediction of election outcomes in the 2006 Italian National Election. Similar findings were obtained by Payne, Krosnick, Pasek, Lelkes,

Akhtar, and Thompson (2010) on the role of racial prejudice in the 2008 U.S. presidential election. Using three nationally representative samples, Payne et al. found that explicit and implicit measures of racial prejudice, both administered in the months before the election, jointly predicted voting decisions for John McCain versus Barack Obama in the actual election (see also Moss-Racusin, Phelan, & Rudman, 2010). Kosloff, Greenberg, Schmader, Dechesne, and Weise (2010) investigated the role of stigmatizing "smear" information about McCain and Obama in the 2008 U.S. presidential campaigns. Their results showed that opposition to either of the two candidates and salience of relevant social categories (i.e., age, race) influenced the automatic activation as well as the explicit acceptance of smear labels (i.e., McCain – senile; Obama – Muslim). Interestingly, these effects were particularly pronounced among undecided voters. Taken together, these findings corroborate our conclusion that implicit measures represent a valuable addition to the toolbox of psychological instruments in understanding the processes of political decision-making in undecided voters.

In addition to their implications for political psychology, the reviewed findings also have important implications for psychology in general. A common assumption in the social psychological literature is that implicit measures reflect early acquired, old attitudes that have not been replaced by more recently acquired, new attitudes (e.g., Wilson, Lindsey, & Schooler, 2000). Aside from the fact that this assumption seems inconsistent with the large body of evidence showing experimentally induced changes in implicit, but not explicit, measures (e.g., Gawronski & LeBel, 2008; Karpinski & Hilton, 2001; Olson & Fazio, 2006; for a review, see Gawronski & Bodenhausen, 2006), the reviewed findings suggest that implicit measures are capable of capturing "embryonic" preferences that may ultimately serve as the foundation for explicitly endorsed preferences. Drawing on the distinction between associative and propositional learning (Gawronski & Bodenhausen, 2006, in press), these embryonic preferences may have their roots in lower-level conditioning processes (see De Houwer et al., 2001). Yet, people may be reluctant expressing these conditioned preferences at an explicit level as long as they lack supportive arguments that could rationalize them. In fact, the need for supportive arguments may be the driving force underlying the reviewed findings on selective exposure, in that people may selectively search for information that helps to rationalize their preference (Galdi et al., 2010). In other words, people do not look at the available arguments from a neutral point of view and then derive a preference from a careful assessment of these arguments. Rather, an existing preference at the level of automatic associations may lead people to selectively search for arguments that could rationalize this preference, such that this preference is explicitly endorsed once a threshold of subjective confidence is reached (Wilson & Bar-Anan, 2008). Typical studies on evaluative conditioning are unlikely to detect this pattern, because the objects used as conditioned stimuli in this research are often unknown and of low

personal relevance (see De Houwer et al., 2001). As such, participants may be less reluctant expressing their automatic preferences at the explicit level. However, if a conditioned stimulus is of higher personal importance and the relevant domain is associated with a social norm of rationality, people may hesitate to express preference unless they have arguments that could support that preference. Future research may help to clarify the role of confidence thresholds and supportive arguments in the expression of conditioned preferences.

#### CONCLUSION

In our 2008 article on the prediction of future choices of undecided voters (Galdi et al., 2008), we concluded that "decision-makers sometimes have already made up their minds at an unconscious level, even though they consciously indicate that they are still undecided" (p. 1100). Although this claim may sound like an oxymoron, our follow-up research on selective exposure suggests that there is nothing "magical" in the prediction of future choices by undecided individuals (Galdi et al., 2010). Indeed, accumulating evidence indicates that implicit measures represent a very useful tool in reading the minds of undecided voters. Luciano Arcuri had the creativity and the curiosity to go against the mainstream with this seminal idea, thereby setting the groundwork for a new way of thinking about implicit measures in the political domain and in psychology in general.

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