Implicit Social Cognition

Adam Hahn, University of Cologne (Universität zu Köln), Köln, Germany
Bertram Gawronski, University of Texas at Austin, Austin, TX, USA

Abstract

This article describes the field of implicit social cognition. Mental association is introduced as a core concept that serves as the basis for the definition of several psychological constructs and the development of nonreactive, computerized measurement instruments designed to capture the automatic activation of mental associations. We further discuss the meaning of the term implicit and review research and theorizing on the relation between implicit and explicit measures; prediction of meaningful outcomes; and the formation, change, and contextualization of mental associations. The article concludes with a brief review of mathematical modeling in implicit social cognition and its impact on applied areas.

The term *implicit social cognition* refers to research in social psychology and related disciplines that uses a particular class of nonreactive, computerized measurement instruments to assess thoughts and feelings without directly asking participants to report on them (for a comprehensive review, see Gawronski and Payne, 2010). A central characteristic that distinguishes these tools from other kinds of unobtrusive measures is that they reduce participants' ability to strategically control their responses. These measures are often referred to as *implicit measures*, whereas traditional self-report measures are described as *explicit measures*.

Mental Association as a Core Concept

Based on the two central features of implicit measures, it is often claimed that they (1) overcome the well-known problems of socially desirable responding and (2) capture thoughts and feelings that are outside of conscious awareness, and thus inaccessible to self-report. Over the last few years, evidence conflicting with these assumptions has led many researchers to prefer more agnostic interpretations in terms of mental associations. Such interpretations are based on the idea that many important constructs of social cognition can be defined as associations between concepts in memory (Greenwald et al., 2002). For example, the construct of *attitude* has been defined as association between an object and a particular evaluation. Based on this definition, *prejudice* can be defined as evaluative associations involving a social group, and *self-esteem* as evaluative association involving the self. Similarly, *stereotypes* can be defined as semantic associations between a social group and stereotypical attributes, whereas the *self-concept* refers to semantic associations between the self and its attributes. In general, the concept of mental association is applicable to any kind of target objects (e.g., consumer products, political candidates) and their evaluative and semantic attributes. Although some theorists have proposed alternative frameworks that reject the notion of mental associations (Hughes et al., 2011), associative theorizing has been a driving force in the development of implicit measures and still serves as a conceptual core in research on implicit social cognition.

Measurement Procedures

Implicit measures are based on the idea that activation of a mental concept can spread to other associated concepts in memory. To the extent that the associative link between two concepts is sufficiently strong, spread of activation is assumed to occur automatically (i.e., unintentionally, unconsciously, efficiently, and uncontrollably). Implicit measures make use of such automatic processes by assessing the effect of stimuli or stimulus features on participants' performance (e.g., response times, error rates) in responding to other stimuli or stimulus features (for a review, see Gawronski and De Houwer, 2014).

Sequential Priming Tasks

The first type of implicit measures is based on the notion of sequential priming in cognitive psychology (for a review, see Wentura and Degner, 2010). In a typical sequential priming task, participants are briefly presented with a prime stimulus (e.g., a picture of a person) which is followed by a target stimulus. Participants' task is to categorize the target stimulus as quickly as possible into two alternative categories. Depending on the type of measure, participants may be asked to (1) classify the target stimulus as good or bad (i.e., *evaluative decision task*), (2) classify the target stimulus in terms of its semantic meaning (i.e., *semantic decision task*), or (3) decide whether the target stimulus is a meaningful word or a meaningless letter string (i.e., *lexical decision task*). The basic idea underlying sequential priming tasks is that responses to the target stimulus are facilitated (i.e., lower response times, higher accuracy) when it is preceded by a prime stimulus that is mentally associated with either the target stimulus itself (e.g., sequential priming with lexical decision tasks) or the feature that is relevant for categorization of the target stimulus (e.g., sequential priming with evaluative or semantic decision tasks). For example, using a variant of sequential priming involving evaluative target decisions, a person with negative associations toward Black people should be faster in responding to negative words and slower in responding to positive words when the target words are preceded by Black faces compared to neutral baseline primes (e.g., Fazio et al., 1995). Similarly, using a variant of sequential priming involving semantic target

decisions, a person with gender–stereotypical associations may be faster in responding to male and female pronouns after being presented with stereotype-congruent prime words (e.g., doctor-him, nurse-her) compared to stereotype-incongruent prime words (e.g., doctor-her, nurse-him) (e.g., Banaji and Hardin, 1996). Finally, using a variant of sequential priming involving lexical target decisions, a person may be faster in identifying certain adjectives (e.g., competent) as meaningful words after being exposed to a political candidate to the extent that this person has strong associations between the candidate and the attributes described by the target words (e.g., Wittenbrink et al., 1997).

Implicit Association Test

The implicit association test (IAT) consists of two binary categorization tasks that require participants to sort stimuli representing two opposing target concepts (e.g., Black and White faces) and stimuli representing two opposing attribute concepts (e.g., positive and negative words) as quickly as possible by pressing one of two response keys (Greenwald et al., 1998). The central assumption underlying the IAT is that fast and accurate responses will be facilitated when mentally associated concepts are mapped onto the same response key, and impaired when mentally associated concepts are mapped onto different keys. For example, to measure preferences for Whites over Blacks, participants might be asked to sort pictures of White and Black faces and words depicting pleasant and unpleasant objects. In one block of the task, participants may be asked to respond to White faces and positive words with one key and to Black faces and negative words with the other key. In another block of the task, participants may be asked to respond to Black faces and positive words with one key and to Whites faces and negative words with the other key. The relative difference in participants' performance (i.e., speed, accuracy) in the two blocks is typically interpreted as an index of participants' preference for Whites over Blacks, or vice versa. IAT scores are inherently relative (i.e., relative preference for one group over another), and the blocked presentation of association-congruent and association-incongruent trials has been linked to various sources of systematic measurement error. To overcome these limitations, researchers have developed a number of modified IAT variants that are amenable for assessing associations of a single target concept or a single attribute, and variants that avoid blocked presentations of association-congruent and association-incongruent trials (for a review, see Teige-Mocigemba et al., 2010).

Go/No-Go Association Task

In the go/no-go association task (GNAT; Nosek and Banaji, 2001), participants are asked to show a *go* response to different kinds of target stimuli (e.g., by pressing the space bar) and a *no-go* response to distracter stimuli (i.e., no button press). In one block of the task, the targets include stimuli related to the target concept of interest (e.g., Black faces) and stimuli related to one pole of a given attribute dimension (e.g., positive words); the distracters typically include stimuli related to the other pole of the attribute dimension (e.g., negative words). In a second block, the classification of the particular attribute poles as targets and distracters is reversed (e.g., *go* for Black faces and negative words, and *no-go* for positive words). GNAT trials typically include a response deadline such that participants are asked to show a *go* response to the targets before the expiration of that deadline. Error rates are analyzed by means of signal detection theory, such that differences in sensitivity scores (d′) between the two pairings of *go* trials (e.g., Black-positive vs. Black-negative) are interpreted as an index of associations between the target concept of interest and the respective attributes.

Extrinsic Affective Simon Task

In the Extrinsic Affective Simon task (EAST; De Houwer, 2003), participants are presented with colored words representing a target object and white words representing associated attributes. Participants are instructed to categorize the words in terms of their valence when they are shown in white, and to categorize them in terms of their color when they are colored. For example, in an EAST designed to measure evaluative associations of different kinds of beverages, participants may be presented with positive and negative words in white and with names of beverages that are presented in yellow on some trials and in blue on others. Participants' task is to press one key when they see either a white word of negative valence or a word printed in blue and to press another key when they see either a white word of positive valence or a word printed in yellow. To the extent that participants show faster (or more accurate) responses to a colored word (e.g., Coke) when the required response to this word is combined with a positive as compared to a negative response, it is inferred that participants have positive associations with the object depicted by the colored word (or vice versa). Although the EAST was originally designed as a measure of evaluative associations, a number of studies have demonstrated its applicability to semantic associations (e.g., Teige et al., 2004).

Affect Misattribution Procedure

The affect misattribution procedure (AMP; Payne et al., 2005) adopts the basic logic of sequential priming, in that it measures the effects of prime stimuli on responses to subsequently presented targets. However, the AMP differs from traditional variants of sequential priming by (1) using target stimuli that are ambiguous with regard to the target response and (2) relying on participants' actual judgments of the targets instead of speed or accuracy data. The basic idea underlying the AMP is that the prime stimuli activate thoughts and feelings that may be misattributed to the ambiguous target stimuli (Gawronski and Ye, 2014). For example, in an AMP to measure evaluative associations of racial groups, participants may be presented with Black and White faces as primes and neutral Chinese ideographs as targets. Participants' task is to indicate if they consider the Chinese ideograph as visually more pleasant or visually less pleasant than the average Chinese ideograph. The modal finding is that participants show more favorable responses to the Chinese ideographs when they were primed with a pleasant stimulus than when they are primed with an unpleasant stimulus. Such priming effects tend to emerge even

when participants receive detailed information about the operation of the task and are explicitly instructed to avoid any potential influence of the primes (Payne et al., 2005). Although the AMP has originally been designed to measure evaluative associations, modified variants of the task have been shown to be amenable for the measurement of semantic associations (e.g., Sava et al., 2012).

What Is 'Implicit' about Implicit Social Cognition?

A common source of confusion in implicit social cognition is the meaning of the term *implicit*. Whereas some researchers use the term to describe features of measurement procedures, others use it to describe features of psychological constructs (e.g., implicit attitudes). The first interpretation emerged from the goal of overcoming the effects of socially desirable responding on self-report measures (e.g., Fazio et al., 1995). Research in this tradition was inspired by earlier work in cognitive psychology investigating the role of voluntary and involuntary processes in attention (see Payne and Gawronski, 2010). The second interpretation emerged from the goal of capturing unconscious thoughts and feelings that are inaccessible to self-report (e.g., Greenwald and Banaji, 1995). Research in this tradition was inspired by earlier work on implicit memory, suggesting that prior experiences can influence performance on psychological tasks even when participants are unable to explicitly recall the relevant experience (see Payne and Gawronski, 2010).

Drawing on the notion of implicit memory, Greenwald and Banaji (1995) defined *implicit cognition* as "introspectively unidentified (or inaccurately identified) trace of past experience that mediates responses" (p. 5). Although this definition was meant to imply unawareness of the sources of mental contents, it has often been interpreted to imply unawareness of the mental contents themselves (e.g., unawareness of the source of an attitude vs. unawareness of the attitude itself). However, the latter interpretation conflicts with a considerable body of evidence, suggesting that the psychological constructs captured by nonreactive, computerized measures are consciously accessible and thus not unconscious (e.g., Hahn et al., 2014).

More recently, De Houwer et al. (2009) proposed an alternative conceptualization to overcome the common confusion regarding the meaning of the term implicit. According to this conceptualization, the terms *implicit* and *explicit* describe the processes by which a psychological attribute (e.g., attitude) influences measurement outcomes (which may be described as *measures* in the sense of measurement scores), rather than the procedure itself or the underlying attribute. Specifically, measurement outcomes may be described as *implicit* if the to-be-measured attribute influences participants' responses in an automatic fashion (e.g., unintentionally, uncontrollably). Conversely, measurement outcomes may be described as *explicit* if the to-be-measured attribute influences participants' responses in a controlled fashion (i.e., intentionally, controllably). Measurement procedures, on the other hand, may be described as *direct* if their measurement outcomes are based on participants' self-assessment of the to-be-measured attribute (e.g., when participants' racial attitudes are inferred from their self-reported liking of Black people). Conversely, measurement procedures may be described as *indirect* if their outcomes are not based on a self-assessment (e.g., when participants' racial attitudes are inferred from their reaction times to positive and negative words after being primed with Black faces) or when it is based on a self-assessment of attributes other than the to-be-measured attribute (e.g., when participants' racial attitudes are inferred from their self-reported liking of a neutral object after being primed with Black faces).

Relations between Implicit and Explicit Measures

In a meta-analysis on the IAT, Hofmann et al. (2005) found an average correlation of 0.24 between IAT scores and self-report measures. Similar findings have been reported by Cameron et al. (2012) for different procedures based on sequential priming. However, correlations in both meta-analyses varied considerably as a function of content domains as well as procedural and method-related factors. In general, implicit–explicit correlations tend to be higher when participants rely on intuitive, affective bases (e.g., feelings elicited by an object) as opposed to deliberate, cognitive bases (e.g., reasons for liking or disliking an object) when reporting an explicit judgment. Implicit and explicit measures also show higher correlations when they are similar in terms of their dimensionality (e.g., absolute evaluations of Blacks vs. relative preference for Whites over Blacks) and content (e.g., evaluations of affirmative action policies vs. evaluations of Black and White faces).

A variety of theories have been developed to explain variations in the relation between implicit and explicit measures. According to the MODE (*M*otivation and *O*pportunity and *DE*terminants) model (for a review, see Fazio, 2007), the relation between implicit and explicit measures depends on the motivation and opportunity to engage in effortful processing of judgment-relevant information. To the extent that people are motivated and have the opportunity to engage in effortful processing when making an explicit judgment, they are assumed to scrutinize the available information about the target object. In this case, correlations between implicit and explicit measures should be low. If, however, either the motivation or the opportunity to engage in effortful processing is low, people are assumed to rely on their automatically activated associations when making an explicit judgment. In this case, correlations between implicit and explicit measures should be high. These hypotheses are consistent with research showing that correlations between implicit and explicit measures of racial attitudes tend to be higher for participants low in motivation to control prejudiced reactions compared to participants high in motivation to control (e.g., Fazio et al., 1995). Other research supporting the MODE model includes studies showing that correlations between implicit and explicit measures tend to be higher when participants are asked to provide explicit judgments under time pressure than when they have unlimited time (e.g., Ranganath et al., 2008).

Another theory that explains varying correlations between implicit and explicit measures is the associative-propositional evaluation (APE) model (Gawronski and Bodenhausen, 2006). The APE model conceptualizes implicit and explicit evaluations as the behavioral outcomes of two qualitatively distinct – yet mutually interacting – mental processes. Whereas

implicit evaluations are assumed to be the outcome of associative processes, explicit evaluations are conceptualized as the outcome of propositional processes. Associative processes are further defined as the *activation* of mental associations on the basis of observed co-occurrences between stimuli in the environment and the similarity between features of environmental stimuli and existing representations. Propositional processes are defined as the *validation* of the information implied by activated associations on the basis of their consistency with other momentarily considered information. An important difference between the two processes is that associations may be activated regardless of whether a person considers these associations as a valid basis for an explicit judgment. According to the APE model, the central determinant of perceived validity is the consistency of the evaluation implied by activated associations with all other momentarily considered information. To the extent that this evaluation is consistent with other momentarily considered information, it may be regarded as valid and therefore used as a basis for an explicit judgment. If, however, the evaluation implied by activated associations is inconsistent with other momentarily considered information, the implied inconsistency may lead to a rejection of the implied evaluation as invalid. Whereas in the former case implicit and explicit measures are assumed to show corresponding evaluations, the two kinds of measures are assumed to show diverging evaluations in the latter case. Although the APE model shares many assumptions with the MODE model, an important aspect of the APE model is that effortful processing may not necessarily reduce the relation between implicit and explicit measures when the additionally considered information is consistent with the evaluation implied by activated associations. This assumption is supported by research showing that high motivation to control prejudiced reactions does not reduce the relation between implicit and explicit measures of racial prejudice when consistency can be restored in a way that does not imply a rejection of activated associations (e.g., by denying discrimination of the target group; see Gawronski et al., 2008).

Prediction

Implicit measures are often used as tools to predict meaningful psychological outcomes (e.g., behavior, decisions), and recent meta-analyses tend to support their predictive validity (e.g., Cameron et al., 2012; Greenwald et al., 2009). However, to justify the use of such resource-intensive tasks, many researchers have become concerned with unique aspects of behavior that are difficult to predict with explicit measures. According to Perugini et al. (2010), implicit measures may contribute to the prediction of outcomes over and above explicit measures in various ways, including (1) additive patterns, (2) double-dissociation patterns, (3) moderation patterns, and (4) interactive patterns.

Additive patterns involve cases in which implicit and explicit measures of the same construct jointly predict a particular outcome. Such cases tend to emerge when implicit measures are able to capture particular aspects of the outcome that are not captured by the explicit measure. Thus, additive patterns are best described in terms of explained variance, such that implicit measures may increase the total proportion of explained variance in the outcome measure compared to the variance that is explained by the explicit measure alone.

Although additive patterns have been obtained in a few studies, a more common finding is a double-dissociation in the prediction of different kinds of outcomes. In line with the assumptions of various dual-process theories (e.g., Fazio, 2007), implicit measures have been shown to outperform explicit measures in the prediction of spontaneous behavior, whereas explicit measures tend to outperform implicit measures in the prediction of deliberate behavior. For example, nonverbal behavior in interracial interactions typically shows stronger relations to implicit when compared to explicit measures, whereas verbal behavior has been shown to reveal stronger relations to explicit when compared to implicit measures (e.g., Dovidio et al., 2002).

Other research has focused on various moderators that determine whether a given outcome is predicted by implicit or explicit measures. Such moderating patterns have been shown for various situational factors and their individual difference counterparts (for a review, see Perugini et al., 2010). For example, implicit measures have shown stronger relations to eating behavior than explicit measures under conditions of cognitive depletion, whereas explicit measures showed stronger relations to eating behavior under control conditions (Hofmann et al., 2007). Correspondingly, implicit measures have been shown to outperform explicit measures in the prediction of eating behavior for people low in working memory capacity, whereas explicit measures outperformed implicit measures for people high in working memory capacity (Hofmann et al., 2008). Such findings are consistent with dual-process theories assuming that motivation and opportunity to engage in effortful processing are central moderators of the predictive validity of implicit and explicit measures (e.g., Fazio, 2007).

Deviating from approaches in which implicit and explicit measures are seen as competitors in the prediction of behavior, several studies have investigated interactive relations between the two kinds of measures. The general assumption underlying these studies is that discrepancies between implicit and explicit measures are indicative of an unpleasant psychological state that people aim to reduce. In line with this assumption, people showing large discrepancies between implicit and explicit measures of a particular psychological attribute (e.g., attitude, self-concept) have been shown to process discrepancy-related information more extensively than people with small discrepancies (e.g., Briñol et al., 2006). In a similar vein, combinations of high self-esteem on explicit measures and low self-esteem on implicit measures have been shown to predict various kinds of defensive behaviors (e.g., Jordan et al., 2003).

Formation, Change, and Context Effects

Several early theories of implicit social cognition assumed that implicit measures capture highly overlearned associations that have their roots in long-term socialization experiences (e.g., Wilson et al., 2000). Consistent with this assumption, several studies have shown that implicit measures are meaningfully related to early childhood experiences. However, although

long-term socialization experiences can be an important source of the associations captured by implicit measures, such experiences do not seem to be necessary. The latter conclusion is supported by research showing that recently formed associations that are based on minimal experiences can have a strong impact on implicit measures (e.g., Gregg et al., 2006). Resonating with the dual-process distinction of the APE model (Gawronski and Bodenhausen, 2006), these experiences may involve either descriptive information about a target object (i.e., propositional learning) or incidental pairings of a target object with other stimuli (i.e., associative learning). In the domain of attitudes, propositional learning plays a central role in research on persuasive communication, involving the processing of verbal arguments implying either a positive or negative evaluation of a given target object. Associative learning is prominently reflected in research on evaluative conditioning, which refers to the change in the evaluation of a formerly neutral conditioned stimulus due to its pairing with a positive or negative unconditioned stimulus. The currently available evidence suggests that implicit measures are able to capture newly formed associations regardless of whether they are product of associative or propositional learning (for a review, see Gawronski and Sritharan, 2010).

In addition to the question of how mental associations are formed, a central question is how existing associations can be changed. Several early studies suggested that, although associations captured by implicit measures can be formed relatively quickly as a result of minimal experiences, they seem to be much more resistant to change (e.g., Gregg et al., 2006). However, in contrast to this conclusion, a substantial body of research indicates that implicit measures of existing associations often show evidence for change even when explicit measures are unaffected (for a review, see Gawronski and Bodenhausen, 2006). According to the APE model, such patterns occur when repeated pairings of stimuli in the environment change the structure of associations in memory, and the information implied by the new association is rejected as a basis for an explicit judgment (e.g., Gawronski and LeBel, 2008). Moreover, the reverse pattern is predicted to occur when newly acquired information leads to a rejection of existing associations as a basis for an explicit judgment because of their inconsistency with the newly acquired information (e.g., Gawronski and Strack, 2004). Whereas the former case is assumed to produce changes on implicit but not explicit measures, the latter case is assumed to produce changes in explicit but not implicit measures. In addition, the APE model implies that implicit and explicit measures should show corresponding changes if (1) repeated pairings of stimuli in the environment change the structure of associations in memory and the information implied by the new association is accepted as a basis for an explicit judgment and (2) newly acquired descriptive information is accepted as valid and this information leads to formation of new associations in memory (e.g., Whitfield and Jordan, 2009).

Although implicit measures have been shown to be susceptible to various manipulations to induce long-lasting changes in underlying associations, some effects in the literature are more appropriately interpreted as reflecting temporary shifts that may dissipate over time. In Contrast to initial claims that implicit measures may be resistant to contextual influences, a considerable body of research has shown that they are in fact highly malleable (for a review, see Gawronski and Bodenhausen, 2006). For example, several studies have shown that the same target person can elicit different responses on implicit measures depending on the context in which the target is encountered (e.g., Wittenbrink et al., 2001). Such findings have fueled theoretical debates as to whether evaluations captured by implicit measures indeed reflect stable underlying representations (e.g., Fazio, 2007) or instead are constructed on the spot on the basis of momentarily accessible information (e.g., Schwarz, 2007). More recently, Gawronski et al. (2010) have proposed an integrative account that explains context effects by specifying the contextual conditions under which implicit measures reflect (1) initially acquired information, (2) subsequently acquired information that is inconsistent with the initial information, or (3) a mixture of both. According to their account, exposure to expectancy-violating information enhances attention to the context, which leads to an integration of the context into the newly formed representation of the expectancy-violating information. Thus, the expectancy-violating information is assumed to dominate responses only in the context in which this information has been acquired, whereas the previously acquired information is assumed to dominate responses in any other context. This account not only explains a wide range of context effects; it also includes several novel predictions about patterns of stability and change that have been empirically confirmed.

Lack of Process Purity

Implicit measures are often assumed to provide direct proxies for mental associations. However, although the impact of mental associations on implicit measures is rarely disputed in the field of implicit social cognition, a considerable body of research suggests that implicit measures do not provide process-pure reflections of mental associations. To disentangle the contribution of multiple, qualitatively distinct processes to implicit measures, several theorists have developed mathematical modeling procedures to quantify these processes, including applications of process dissociation, multinomial modeling, and diffusion modeling (for a review, see Sherman et al., 2010). The most prominent example is Conrey et al.'s (2005) quad model, which distinguishes between four qualitatively distinct processes underlying observed responses on implicit measures: (1) activation of an association; (2) detection of the correct response required by the task; (3) success at overcoming associative bias; and (4) guessing. Research using the quad model has provided more fine-grained insights into the mechanisms underlying previous findings obtained with implicit measures. Whereas some effects have been shown to be genuinely related to underlying associations, others stem from nonassociative processes, such as the ability to inhibit activated associations. For example, whereas extended training to associate racial groups with positive or negative attributes has been shown to influence associative bias, alcohol-related increases in implicit measures of racial bias stem from impaired inhibitory control rather than genuine changes in the underlying associations (for a review, see Sherman et al., 2008).

Applications

Although implicit measures have their origin in social psychology, they have been applied in virtually all areas of psychology (for an overview, see Gawronski and Payne, 2010). For example, a large body of research in clinical psychology has used implicit measures to investigate the processes underlying various psychopathologies and the effectiveness of different kinds of treatments (for a review, see Teachman et al., 2010). Similarly, research in health psychology has adopted implicit measures to gain deeper insights into the mechanisms underlying health-related behavior, including alcohol consumption, eating behavior, smoking, and sexual health behavior (for a review, see Wiers et al., 2010). Forensic psychologists have used implicit measures to study various psychopathologies in violent and sexual offenders as well as the determinants of recidivism (for a review, see Snowden and Gray, 2010). Research in consumer psychology has gained valuable insights from using implicit measures to study the determinants of product preferences and consumer choices (for a review, see Perkins and Forehand, 2010). Finally, research in political psychology has adopted implicit measures to study the sources of political preferences and determinants of voting decisions (for a review, see Gawronski et al., in press).

See also: Alcohol Use among Young People; Attitude Formation and Change; Attitude Measurement; Attitudes and Behavior; Cognitive Dissonance; Consumer Psychology; Decision Making, Psychology of; Decision Making: Nonrational Theories; Health Behaviors; Health Psychology; Implicit Association Test; Implicit Memory; Intergroup Relations; Knowledge Representation; Personality Assessment; Persuasion Theories; Political Psychology; Psychological Treatment, Effectiveness of; Recidivism; Self-Concept: From Unidimensional to Multidimensional and Beyond; Self-Esteem; Self-Regulated Learning; Sexual Risk Behaviors; Signal Detection Theory; Smoking and Health; Social Categorization; Social Cognition; Social Psychology: Research Methods; Social Psychology; Stereotypes in Social Psychology; Unconscious: History of the Concept; Voting, Explanations of: Social Class.

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