

Egocentrism Versus Protocentrism: The Status of Self in Social Prediction

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In this article, the author discusses the limitations of the egocentric view of self in which self serves as an automatic filter, inhibiting access to alternative representations of others' thoughts and feelings. The author then outlines a protocentric model, the self-as-distinct (SAD) model, in which generic representations of prototypic others serve as the default; representations of self, specific others, or categories encode only distinctiveness from generic knowledge about prototypic others. Thus, self-knowledge is distributed both in generic representations in which self and prototypic others are undifferentiated and in a self-representation that encodes distinctiveness. The self-representation does not serve to make predictions about others because it encodes how self differs from the generic representation of others. Predictions that are the same about self and others are protocentric, based on generic knowledge that serves as the default. The SAD model parsimoniously accounts for many inconsistent findings across various domains in social cognition.

Answering questions about other people's covert psychological processes, their likely thoughts and feelings, seems difficult for at least two reasons. First, people do not have direct access to other people's ongoing or likely future psychological experiences. Second, there is no one-to-one correspondence between events and other people's reactions to these events; people do not always react the same way to a given event, and the same psychological reaction can be elicited in many different ways. Despite these apparently insurmountable challenges, adults, and even young children, have little trouble answering questions about other people's likely future reactions and psychological experiences. In contrast to the apparent ease with which lay people make such predictions about others, theoreticians and researchers have invested much effort to resolve the question of how such predictions are made. The major issue of contention and the focus of this article is the status of self in making predictions about other people's thoughts and feelings.

One approach to the question of how people make predictions about other people's psychological experiences holds that individuals develop a *theory of mind* (Flavell, 1988; Leslie, 1987; Perner, 1991; Premack & Woodruff, 1978), a system of inferences used to impute mental states to self and others. From a theory of mind perspective, the psychological language of socialization agents "cues" children to the existence of such psychological processes (e.g., Bretherton & Beeghly, 1982; Dunn, 1999; Dunn, Bretherton, & Munn, 1987) and engenders their use of psychological terms in talking of their own and other people's experiences and behavior as early as age 2–3 years (Bartsch & Wellman, 1995; Wellman, Phillips, & Rodriguez, 2000). Then, by around the age of 4 years, children form a *representational theory of mind* in which psycho-

logical processes are posited as explanatory constructs that account for regularities in the way they and other individuals interact with the world around them. From this perspective, "the child's theory of mind is equally applicable to the self and to others" (Gopnik, 1993, p. 10), and individuals have no introspective access to their own psychological states. Although there is a debate as to when this actually occurs (e.g., Chandler, 1988), there is general agreement that with development children's theory of mind becomes more sophisticated and approximates that of adults. Thus, adults are viewed as using theories of mind to account for their own and other people's psychological experiences and behavior.

Inherent in conceptualizations of the theory of mind is the acquisition of "the ability to recognize representational diversity" (Forguson & Gopnik, 1988, p. 230), the understanding that others may have different representations than self and that the same event can be represented differently in other minds. Children as young as 18 months (Repacholi & Gopnik, 1997) have been shown to have a rudimentary ability to recognize differences between their own and other people's ongoing psychological experiences. The critical issue from a theory of mind perspective, however, is what happens when the ability to recognize representational diversity exists but a conflict arises between one's own perspective and another person's presumed perspective. Although this issue has not been resolved by theory of mind researchers (e.g., Perner, Stummer, & Lang, 1999), one contention is that individuals develop embedded conditionals (e.g., "If asked about self . . . but if asked about other . . .") that specify how to answer questions about one's own perspective versus another person's perspective (e.g., Frye, 1999). From this line of reasoning, once children learn the strategy of answering differentially about self and about others, they consistently and accurately respond about other people's perspectives. The important issue here is that self does not have a privileged status from a theory of mind perspective.

In stark contrast, the simulation view holds that because people only have access to their own psychological experiences, they can only use self-knowledge and project on the basis of that knowledge (e.g., Cameron & Magaret, 1951; Gordon, 1986; Hoch, 1987; C. N. Johnson, 1988; Krueger, 1998; Olson & Kamawar, 1999;

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Tomasello, 1999). Many theoreticians have incorporated simulation in their models of psychological functioning, without labeling the process as simulation *per se*. For instance, in social psychology, Asch (1952) stipulated that people only gain access to others' psychological processes by inference from self-observation, using their own previous experience. In developmental psychology, Lewis (1983) stated this view succinctly, arguing that access to other people's psychological experiences is only gained via "use of self in imagining what one would feel, think, or experience in a similar situation. This extension of the self into another, the process of social cognition, is egocentric" (p. 169).

Wegner and Vallacher (1977) have refined this view somewhat by arguing that for familiar others available information about them is used in drawing inferences but for unfamiliar others inferences are "simple generalizations" from one's own past experiences (p. 100). Maccoby (1980) similarly says that people "work by analogy" (p. 252), using knowledge of their own subjective experiences to infer what others must be like, combining this with their knowledge of other people's histories when such knowledge is available. The critical difference between the theory of mind and the simulation view has been captured by Wellman (1990) in his definition of a theory of mind as "a general set of concepts applicable to individual minds, not simply an experience of one's own mind" (p. 193).

Despite the fact that philosophers have viewed the theory of mind view and the simulation view as mutually exclusive (e.g., Goldman, 1992; Gordon, 1986; but see Peterson & Riggs, 1999) in both social and developmental psychology, the predominant view represents a hybrid of these two alternatives. This hybrid skirts the formal issue of lack of access to other minds but implicitly accepts both that individuals use some version of a theory of mind and that they simulate, using self in an analogical manner. The crux of the hybrid view, though, is that using self in an analogical manner is primary and that this natural tendency to use self as an analog for others needs to be suppressed. That is, adopting one's own perspective or using self-knowledge to predict other people's likely thoughts and feelings is viewed as egocentric and as the antitheses of more sophisticated modes of making predictions about others' covert psychological experiences.

In developmental psychology, the use of self as an analog for others is viewed as a precursor to less egocentric modes of prediction that are viewed as maturational (e.g., Chandler, 1972, 1976; Strayer, 1987). In this vein, Chandler (1976) claimed that mature and nonegocentric individuals do not use self-knowledge but "through a kind of conceptual boot strapping operation, clear the boundaries of their own egocentric perspective and successfully transport themselves into the vantage of someone else" (p. 110). Although this aspect of the process has not been made explicit, presumably, once people get into this new vantage point, some version of a theory of other minds comes into play. Selman (1980) has addressed the developmental sequence in a somewhat different fashion, suggesting that there is a transition from using one's own perspective, to understanding that others may have different perspectives, to mature social perspective taking that he sees as the relation and coordination of different perspectives. The important aspect of the developmental approach is that only in developmentally immature social beings does self-knowledge disrupt access to other knowledge structures that are potentially

available for making predictions about others' thoughts and feelings.

In social psychology, the hybrid view has taken a different bent, with a greater emphasis on egocentrism and the need to suppress the self. Heider (1958) expressed this view when he claimed that "an expectation of similarity between the reactions of others and the self is thus egocentrically determined" (p. 158) and only by adopting the point of view of the other person, rather than one's own point of view, can one alter this tendency. Higgins (1981) addressed the developmental transition in drawing a distinction between situational role taking and individual role taking. In situational role taking, self-knowledge is used to make predictions about other people's thoughts and feelings (i.e., "What would I think/feel if I were in that situation?"). In individual role taking, knowledge structures about self and about others are differentiated and individuals actively work to suppress self-knowledge and to use target knowledge to make predictions about others (Higgins, 1981; Higgins & Bargh, 1987).

Gordon (1986, 1995), one of the major proponents of simulation, has drawn a similar distinction between simulating oneself in the other's situation and simulating the other in his or her situation. In the former, one starts with oneself, imagining what self would think, feel, or do in the imagined circumstances. This, in essence, constitutes a transfer of mental states from self to other. In the latter, there is a "recentering of egocentric maps" and one imaginatively transforms oneself into the other person, becoming the other person with his or her quirks, rather than staying oneself with one's own idiosyncrasies. From this point of view, then, use of self-knowledge is viewed as preventing access to alternative, other-related knowledge structures that could be used for making predictions about others.

In contrast to the developmental view that sees egocentric social perception as a transition phase that passes with maturation, in Higgins's (1981) view, "controlling the self" is a relevant concern in every act of social perception (p. 126). Further, it is assumed (e.g., Higgins & Bargh, 1987) that less effort is needed to engage in situational role taking, and consequently, given limited attentional resources, situational role taking is the more likely route to be taken; only with time and exerted effort can individuals manage to suppress self-knowledge in making predictions about other people's thoughts and feelings.

A more radical version of this hybrid view has been taken by Markus and her colleagues (e.g., Markus & Sentis, 1982; Markus & Smith, 1981) in their elaboration of the self-schematic processing (SSP) model. In this model, the self is a system of self-schemata, domain-specific generalizations about the self that are drawn on the basis of one's behavioral experience in domain-relevant settings. In those domains that are self-relevant, self-schemata are automatically activated and serve to guide information processing and information search about self and about others. However, Markus and her colleagues argued that when there are self-schemata in a given domain, self-knowledge differentially colors predictions about unknown and well-known others (Markus & Smith, 1981). Given minimal information about others (e.g., generic or prototypic targets), information about them is processed "with one's self structures as though it were information about the self" (Markus & Smith, 1981). Self-schemata lead to assimilation of prototypic others, and "this tendency to see others as similar in schema relevant domains may occur almost automatically"

(Markus & Smith, 1981, p. 257). For well-known others, however, the self-schema operates to accentuate differences between them and self, leading individuals to view well-known others as unlike oneself in self-relevant domains.¹

From the perspective of SSP, then, not using a relevant self-schema in self-relevant domains requires conscious attempts at suppression of self, and such attempts are likely to meet with limited success. In this vein, Catrambone and Markus (1987) argued that "it may be almost impossible . . . to avoid the immediate intrusion of self into the perception of another" in self-relevant domains (p. 364). Consequently, the viewpoint adopted by SSP theorists differs from the one advanced by both Higgins (1981) and Gordon (1995) in that using self is viewed as a function of both the target of social perception and the self-relevance of the domain in which the prediction is to be made. However, the common thread is the contention that use of self prevents access to other representations that could be used to make predictions about others and that self-suppression is a prerequisite for such alternative representations to be accessed.

In summary, the hybrid view that has emerged in social cognition theory and research builds on several assumptions, some of which are explicit and some of which are implicit. The first assumption is that the representational system functions in such a way that self is automatically activated in social perception. The second assumption, which is generally implicit, is that given such automatic activation of the self, self can be used as an analog for others in making predictions about them because of assumed similarity between self and others. Third, the automatic activation of self is assumed to render representations of others relatively inaccessible, possibly because the self-representation inhibits these other representations. Fourth, there is an assumption that there exists an alternative mode for drawing inferences about others but that this mode is rarely used because it requires conscious efforts at suppression of self. This alternative mode, which seems to represent a version of a theory of mind, is presumed to be based on various knowledge structures that have not been explicitly specified and are assumed to be potentially available for making predictions about others. In summary, the view that emerges in social psychology is that self ordinarily serves as the default value for making judgments and predictions about others in self-relevant domains, and this tendency can rarely be overridden, even with concentrated effort. The social world is filtered through self-colored glasses.

On the Distinctiveness of Self

As elaborated above, the hybrid model that is the cornerstone of social cognition is based on the default assumption that self and others are viewed as similar in self-relevant domains, allowing self to be used as analog for others in making predictions about them. However, this picture of self is difficult to reconcile with the picture of self that emerges in discussions of self-representation. Whereas the self-as-default view that emerged above requires that self and others be assumed to be similar, in theoretical analyses of the nature of self-representation, the distinctiveness of self, rather than similarity of self to others, is emphasized.

This view of self as distinct cuts across domains. In his insightful discussion of infancy, Stern (1985) has discussed four self-invariants that allow infants to differentiate self from other: self-

agency, self-coherence, self-affectivity, and self-history. Gallup (1998) has similarly identified three components of self-conception: a sense of continuity, a sense of personal agency, and a sense of identity, with the latter arising from the realization that one is both similar to and at the same time different from others. Damon and Hart (1988) have argued that the sense of self derives from the "twin experiences of self-sameness over time and of being a unique individual" (p. 123). Similar claims as to the essence of the adult sense of self have also been made. For instance, Wright (1978, 1984) viewed self as the individual's sense of distinctiveness, unity, continuity, causal power, and uniqueness.

Social psychologists have also recognized self's uniqueness as a core aspect of self-representation. For instance, Kihlstrom and his colleagues (1988) suggested that the self "may include only those attributes that serve to distinguish ourselves from other people" (p. 150). Similarly, Markus and Sentic (1981) conceptualized schemata as developing in those domains in which people become "increasingly aware of the distinctive characteristics of our appearance, temperament, abilities, and preferences" (p. 45). In social identity theory, one's social identity is derived by viewing similarity to others of the same background, but one's personal identity is "what makes you similar to yourself and different from others" (Deschamps & Devos, 1998, p. 3; see also Brewer, 1993). In the same vein, Simon (1993) has argued that similarities between self and others are taken for granted and provide the backdrop against which differences between self and other people are perceived. In light of this, the salient features of the perceiver's cognitive representation of others are exactly those features that the perceiver does not share with others.

The Logical Contradiction

If, as the above theoretical analyses suggest, representations of self are encoded in terms of distinctiveness, there seems to be a logical contradiction in the dual way self has been characterized in social cognition. To the extent that self is viewed as distinctive, it should not serve as the default value for making predictions about others because dissimilarity should logically preclude self's functionality as an analog for others. That is, logically, if A and B are known to be dissimilar, one would not use A to draw inferences about B. It is only in the context of similarity that A can be used for drawing inferences about B (Gentner & Markman, 1994). Distinctiveness should constitute "a structure violating" difference (Holland, Holyoak, Nisbett, & Thagard, 1986, p. 299) in drawing an analogy between self and others. In line with the above, Stapel and Winkielman (1998) have found that analogies are not drawn unless the targets are in the same category (e.g., 2 apes or 2 individuals, but not 1 ape and 1 individual).

If, in fact, representations of self are created to encode self's distinctiveness, on logical grounds, such distinctiveness would be expected to preclude the use of self-representations as the default in making predictions about others. There is a logical inconsistency, then, in accepting the validity of both of the above premises (a) that self is represented in terms of its distinctiveness and (b)

¹ Note that despite having adopted a strictly analogical perspective, Clement and Krueger (2000) have similarly argued that unknown others are assimilated to self whereas well-known others are contrasted from self.

that self and others are assumed to be similar, allowing self to be used as analog for others.

Assumed Similarity of Self and Others

If one accepts the premise of distinctiveness-based encoding of self as reflecting the way in which self-representations are constructed, then assumed similarity of self and others in self-relevant domains—which from a logical standpoint represents an error—should be the exception rather than the rule. In fact, a careful look at research in social cognition undermines the zeitgeist that self and others are viewed as similar, generally allowing self to be used as analog for others in self-relevant domains. Next, I review research relevant to demonstrating this point.

First, the false-consensus effect seems to represent a classic instance of using self as analog for others. To elaborate, the false-consensus effect refers to the finding that when individuals make choices, irrespective of whether their choices reflect minority or majority positions, they tend to predict that more others will make the same choices that they themselves have made (e.g., Alicke & Largo, 1995; Marks & Miller, 1987; Sherman, Presson, & Chassin, 1984). In the classic study by Ross, Green, and House (1977, Study X), individuals were asked to walk around campus wearing a wooden sign that read “Eat at Joe’s.” Those who agreed to do so judged that a majority of their peers would make the same choice; those who did not agree to wear the sign judged that the majority of their peers would not agree to do so. Apparently, individuals used their own choice as a gauge for judging the prevalence of the behavior in the target population. Thus, the false-consensus effect appears to be based on the assumption of similarity of self and others, allowing one to use self as an analog for others.

There are several patterns in the false-consensus literature, however, that make the generality of this assumption questionable. First, there are findings relating to the sequence in which judgments about self and others are made. In three meta-analyses of false-consensus research (Fabrigar & Krosnick, 1995; Mullen et al., 1985; Mullen & Hu, 1988), the effect has been found to be least robust when subjects first indicate their own behavioral choices and then estimate consensus rather than vice versa. If the false-consensus effect were a function of assumed self–other similarity and the use of self as analog for others, one would expect the false-consensus effect to be stronger when one’s own choices are made prior to estimating consensus.

Second, there are puzzling interactions with individual differences variables, suggesting that the phenomenon is less prevalent when individuals view themselves as different from others. For instance, on traits on which individuals differentiate self from prototypic others, false-consensus effects tend to be absent. Kernis (1984) found that individuals high in need for uniqueness and schematic for independence gave lower estimates of consensus when they thought about acting independent. Similarly, individuals low in self-esteem (Campbell, 1986) or extreme on a given dimension (e.g., introverts and extroverts) exhibit less false consensus when judging behavior that is consistent with their self-concept (Kulik, Sledge, & Mahler, 1986). This pattern suggests that in those domains in which self is perceived as distinct rather than as similar to most others, self is not used to make consensus estimates.

Studies on the self-anchoring effect, in which individuals make explicit judgments about similarity of self to others, also raise doubts about the generality of the assumption of self–other similarity. In such studies, individuals generally judge others as being more similar to themselves than they judge themselves as being similar to others. Such asymmetries in self–other comparative judgments have been found to occur across various comparison targets—typical others, typical members of stereotypic categories, members of stereotypic categories, and one’s friends (e.g., Catrambone, Beike, & Niedenthal, 1996; Holyoak & Gordon, 1983; Srull & Gaelick, 1983). The effect also appears to occur irrespective of whether participants use self in general or one’s specific traits in the comparison. The robustness of the effect depends on the particular traits being judged and the degree of familiarity with the comparison other, with less asymmetry for well-known others. Such a pattern of asymmetry is not predictable from the view of self as similar to others and serving as analog in making predictions about them. Moreover, recent research suggests that the asymmetry may well result from the tendency to adopt a similarity focus when comparing others with self and a difference focus when comparing self with others (Mussweiler, 2001a, 2001b). The adoption of a difference focus when comparing self with others is precisely the opposite of what one would predict on the basis of the assumption that self and others are viewed as sufficiently similar to allow self to be used as analog for others. Although, it is important to note that a difference focus in comparing self with others is predictable from the view of self as distinctive.

Research conducted from the perspective of SSP also raises doubts as to the use of self as analog for others. Specifically, whereas in SSP self and others are assumed to be similar in self-schematic domains (e.g., Markus & Sentis, 1982; Markus & Smith, 1981), there is a greater tendency to differentiate between self and others in domains in which self is schematic than in domains in which self is aschematic (Mandrosz-Wroblewska, 1989). This pattern flies in the face of expectations based on assumed similarity between self and others in self-relevant domains.

More crucially, one of the classic findings in attribution research is that actors do not make the same causal attributions about self as they do about others (Jones & Nisbett, 1972), tending to attribute others’ actions to their own dispositions. This phenomenon, which has been labeled the *actor–observer effect*, occurs both when the other is a friend and when he or she is a prototypic other, and the effect is even more pronounced in self-relevant domains (e.g., D. T. Miller, 1975; Snyder, Stephan, & Rosenfield, 1976). The critical point for the current analysis is that the actor–observer effect could not occur if self were used as an analog for others.

Also in this vein, assumed dissimilarity of self and others seems to be more prevalent than assumed similarity when it comes to internal states and, especially, affective experiences. By the age of 3 years, children are apparently aware that others can have psychological states that are independent of their own states (Hoffman, 1975, 1987). Selman (1980) documented that young children often deny being able to know what another person thinks or feels. When prompted to indicate how they would feel, they reject the attempt to assume similarity and predict that others would feel different than they themselves would feel (e.g., “[I would feel] happy. But Mike is not me. He may be sad.”).

In an empirical test of this issue with 3–5 year olds, Moore et al. (1995) found that whereas younger children could only ignore their own preferences when such preferences were relatively weak, older children were able to ignore their own preferences and judge a story character's preferences independently of their own preferences, even when such preferences were strong. There are several studies focusing on affect that show self–other differentiation in kindergarten and elementary school children. Karniol and Koren (1987) asked kindergarten children to indicate how they and an unknown, same-aged child would react emotionally in a wide variety of settings. Children's predictions for themselves versus others were found to differ significantly. In similar studies (e.g., Brody & Carter, 1982; Dunn & Hughes, 1998; Strayer & Roberts, 1997) in which children had to attribute emotions to self and others, children's predictions for how they would feel versus how another person would feel were also found to differ significantly.

Self–other differentiation in the domain of affect is also evident with adults. Individuals have been found to attribute more thoughts and feelings to self than to others (White & Younger, 1988) and to describe more private aspects of self than of both significant and nonsignificant others (Andersen, Glassman, & Gold, 1998).

Turning to studies that examined actual predictions, J. T. Johnson (1987) found that individuals made distinctly different affective predictions about self, well-known others, and strangers. Similarly, in a study (Karniol, Eylon, & Rish, 1997) in which adult participants were asked to make predictions about how they, a prototypical other, and a well-known other would react in a wide variety of settings, little overlap in predictions about self and others was found. The amount of overlap in predictions about self and others was higher for contexts that have no generic representational structure (e.g., Rorschach inkblots) than contexts with generic representational structures (e.g., a photo of a ship at sunset). This pattern of findings is not intuitively interpretable from the view of self as analog for others.

Also problematic for the view of self as analog for others is the finding that explicit instructions to use self do not appear to strengthen effects that are presumably mediated by assumed self–other similarity. Studying this issue in the context of the self-anchoring effect, Biernat, Manis, and Kobrynowicz (1997), who gave some of their participants instructions to use self in making judgments of others or to use others in making judgments of self, found that explicit instructions to use self in judging others did not strengthen the self-anchoring effect. In a different line of research, Trafimow, Triandis, and Goto (1991) found that idiocentric cognitions, referring to personal qualities and attributes that do not refer to possible relations to others or to social groups to which one belongs, constitute the majority of responses about self, even in cultures that emphasize the collective. Moreover, they found that the number of idiocentric responses increased when participants were asked to think about what makes them different from their close others. Also telling in this context is the finding that fewer than 40% of Cornell students who made trait judgments about a Cornell student described in a short paragraph spontaneously reported using self in judging the target when asked in an open-ended format (Dunning & Hayes, 1996, Study 1).

Furthermore, manipulations of similarity are often used to enhance empathy (e.g., Batson, Duncan, Ackerman, Buckley, & Birch, 1981): Focusing on self's thoughts and feelings reduces empathy, whereas focusing on distressed others' thoughts and

feelings increases empathy (Thompson, Cowan, & Rosenhan, 1980). Also, imagining how one would feel versus how another person would feel apparently engenders different emotional constellations (Batson, Early, & Salvarani, 1997). These findings suggest that there are differences between first person and third person simulation and that imagining things and situations from one's own perspective yields different outcomes than imagining them from other people's perspectives. In fact, using positron emission tomography measurements, Ruby and Decety (2001) found that although simulating actions from the first and third person perspectives did produce some overlap in terms of the regions of activation, certain areas were differentially associated with each of these two perspectives. Ruby and Decety suggested that this differentiation is critical for the discrimination between self and others, consistent with the Cartesian view (Descartes, 1641/1980) that one's knowledge of one's own mental states is of a radically different nature than one's knowledge of the mental states of others.

In summary, across various spheres of research, there is evidence that undermines the assumption that self and others are generally viewed as sufficiently similar so that self can serve as analog for others. However, if individuals do not generally assume that they are similar to others, why do they sometimes make the same predictions about self as they do about others? Below, I outline an alternative conceptualization to which I now turn.

The Protocentric Alternative

The protocentric alternative I outline is similar to artificial intelligence models of default reasoning (e.g., Besnard, 1989; Reiter, 1985) in which generic representations that serve as defaults are the cornerstone of the processing system. Generic representations are developed by abstracting similarities between instances and events. Thus, similarity is primary (cf. Schank, 1982, 1999). Differences are noted relative to the similarities that are collected under the umbrella of a given category name or generic representation.

Protocentrism builds on a developmental progression from the abstraction of similarities, to the creation of generic representations that serve as defaults, and finally, to the gradual refinement of default representations via exceptions that encode instances and contexts for which use of the default would lead to errors. In keeping with this, for young children, similarity judgments appear to be easier than difference judgments (Blake & Beilin, 1975), taking less time, with this time difference decreasing with age such that adults do not differ in making the two types of judgments (Bisanz, Danner, & Resnick, 1979). Echoing this pattern, Marti (1986) has argued that the development of comparison processes goes through three sequential stages: identity, resemblance, and difference, with the finding of differences occurring later in development. In keeping with this developmental progression, Markman (2001) suggested that when new instances are compared with nascent categories, there is a tendency to focus on commonalities and alignable differences, whereas in comparison with mature categories, nonalignable differences are focused on. The same sort of transition from the use of defaults to the use of defaults with noted exceptions to these defaults has been found in novices versus experts across various domains of knowledge (e.g., M. Miller & Perlis, 1997).

In line with this, there appear to be two ways in which experiences are encoded (cf. S. J. Anderson & Conway, 1997; Baker-Ward, Ornstein, & Principe, 1997). First, experiences are encoded in a generic fashion, as scripts—generalized representations of common events that indicate what happens in these contexts and how people can be expected to behave in these contexts (Schank & Abelson, 1977). Generic representations include information regarding typical settings, typical characters, temporal sequence of events, causal relations, and the prototypic person's thoughts and feelings in these situations (e.g., Cantor & Mischel, 1979; Cantor, Mischel, & Schwartz, 1982; Karniol & Ben-Moshé, 1991). Akin to theories of mind, these generic representations encode how people in general, including self, "work." Within these generic representations, self has no privileged status; one's own psychological system is the same as that of others and functions the same way.² Generic representations, then, serve as default values for making predictions about everyone, including self.

Such generic representations emerge very early in development and are evident when preschool children are asked questions about the structure of a situation; for instance, what happens at birthday parties? Because experiences are encoded generically in representations that abstract their commonality with previous experiences, their specific features are lost (Bower & Forgas, 2000). Thus, children respond to such questions using the general pronoun and the timeless present tense (e.g., "You bring presents, sing songs, and you eat cake."), indicating that they have formed generic representations that are applicable across individuals and occasions. This implies that children look for similarities between events and use such similarities to create generic representations that transcend their own personal experiences in these situations (Bauer & Wewerka, 1997).

In addition to generic representations, experiences are also encoded by way of specific event representations or episodes in autobiographic memory. For instance, when asked what happened at a birthday party yesterday, children can accurately report specifics (e.g., "There was a magician and he made a rabbit disappear."). When specific events are recalled, they are usually ones that encode emotionally charged or unique experiences (Betz & Skowronski, 1993; Bower, 1992; Fivush & Hamond, 1990; Stein & Liwag, 1997). These specific events are unique relative to the stream of experience and are encoded in highly insulated event representations that are created to encode deviations from generalized representations (e.g., daily walks in Central Park as a generic representation vs. the walk during which one witnessed or experienced violence).

In this context, it is important to note that depression and posttraumatic stress disorder are both associated with a preponderance of generic memories and a paucity of specific memories in autobiographic memory (McNally, 1998; Williams, 1992), suggesting that there is a reversion to using default representations. The primacy of generic representations is also evident in children's memory. Thus, when they relate their experiences, children often include features that are part of the generalized representation but that did not in fact occur on the occasion being recounted (Fivush, 1984; Hudson & Nelson, 1986), indicating use of the generic representation in "recalling" self-events, a point I return to later.

Prototypic and Idiosyncratic Knowledge Structures

Up to this point, I have discussed the proto-centric alternative in general terms, indicating that generic representations are used as the default in making inferences and predictions both about others and about self. However, this is only half the picture. The remaining half of the picture concerns how people encode that specific others are different in some way and that their responses and psychological makeup are not the same as those of most others. In other words, there has to be some means of representing differences between people—if such differences are relevant for making predictions about people's likely psychological experiences.

Consequently, not only are there generic knowledge representations that serve as the default, but there are knowledge representations that encode exceptions to these generic representations. To cite Minsky (1997), much of people's knowledge is negative. People need to encode that ostriches are birds that do not fly and that introverts are individuals who, in contrast to most others, do not enjoy social events like birthday parties. I call the representations that encode exceptions *idiosyncratic representations*. If people think of generic representations as ones that encode information regarding prototypic settings, characters, event sequences, causal relations, and prototypic thoughts and feelings, then idiosyncratic representations encode how specific individuals, categories, and groups differ from prototypic others in behavior, past history, and reactions (e.g., Bond & Brockett, 1987; Bond & Sedikides, 1988). Idiosyncratic knowledge, then, serves to modify predictions that would be generated on the basis of generic knowledge. In artificial intelligence, there are many models in which generic knowledge structures serve as default values, with idiosyncratic knowledge structures encoding exceptions that indicate how other people and social categories differ from the prototypic person in their histories, goals, behavior, and reactions (cf. Carbonell, 1980, 1981; Kolodner, 1984; Schank, 1982).³

From this point of view, idiosyncratic knowledge structures are created only when targets and social categories are known to differ from prototypic individuals in their behavior or reactions. Generic or prototypic knowledge serves as the anchor of comparison for knowledge about other people (Karniol & Shomroni, 1998). In this type of representational system, then, only distinctive information about others and social categories is represented in the knowledge representations that encode information about them; all other in-

² As one reviewer argued, the idea of generic representations in which one's own experience has no privileged status appears to be inconsistent with the fact that experiences are phenomenologically given, rich in context, and have a deep emotional texture. However, as I elaborate below, the memory system is versatile; it differentiates those experiences that are emotionally charged and self-relevant from those that are not, allowing people to retrieve experiences in an affect-dependent manner (Bower & Forgas, 2001). This is precisely why predictions about people's own affective experiences differ from those about others' affective experiences, as discussed earlier.

³ In artificial intelligence models, those representations I call idiosyncratic are often discussed as exceptions from the default and are generally associated with difference-based indexing, similar to the SAD tags I discuss below. In their model, Klein et al. (2002) make a similar differentiation between derived memories and inceptive memories, in which the former are generic and the latter are ones that specify exceptions or boundary limits to these generic memories.

formation about them is found by accessing the relevant generic representation that serves as the default representation in the absence of relevant distinctiveness knowledge about others.

This line of argument echoes Jones and Nisbett's (1972) claim that "in the absence of precise knowledge of the actor's history, the observer is compelled to deal with him as a modal case" (p. 85).⁴ Holland et al. (1986) have similarly discussed the use of "default values" (p. 214), generalizations about classes of people in the same or similar situations, when little relevant information is available about target others in social contexts. In this context, Kunda and Thagard (1996) similarly assumed that stereotypes of the typical, ordinary person inhibit all other stereotypes and that "this is because any other stereotype is noteworthy only inasmuch as it implies that members of the stereotyped group differ significantly from ordinary people" (p. 297). Finally, Smith and Zarate (1992) have argued that within a culture particular person attributes are perceived as expected or *default values*. If a cultural default exists, departure from the expected attribute value attenuates attributions and can be the basis of categorization. Therefore, perceivers "preferentially attend to attributes that differ" from a culturally defined default (Smith & Zarate, 1992, p. 15).

There is some empirical evidence for this line of argument. For instance, L. J. Nelson and Miller (1995) reasoned that an individual will be categorized on the basis of his or her most distinctive social features because these features best differentiate him or her from other individuals in the relevant population. L. J. Nelson and Miller (1995, Study 3) found that individuals used information about targets belonging to a distinctive group to make predictions about another likely behavior of that distinct group rather than a nondistinct group of which the target person was also a member. Similarly, Stroessner (1996) tested the hypothesis that targets are categorized on the dimensions on which they differ from a perceived norm. First, he found that nonnormative targets are categorized more quickly than normative ones. Second, he found that for targets who differed from the perceived norm (i.e., a White male) on two dimensions, the speed to correctly identify their membership in both categories was facilitated. These findings are consistent with a representational system in which generic representations serve as default structures and knowledge about others and about social categories is encoded with reference to its distinctiveness from these generic representations.

Integrating Protocentrism With Self-Knowledge: The Self-as-Distinct (SAD) Model

Thus far, I have discussed generic representations and idiosyncratic representations that encode exceptions to generic representations. Extending this to the representation of self, I contend that just as knowledge representations about known others and social categories encode how they differ from prototypic others, knowledge representations about self encode how self is distinct. That is, self-knowledge serves to encode domains of contrast with generic knowledge about prototypic others (cf. Kelly, 1963; McGuire & McGuire, 1988).

Developmental data support distinctiveness-based encoding of self and point to middle childhood as the point of its emergence. For instance, in their study of self-understanding, Damon and Hart (1988) found evidence for distinctiveness-based encoding of self emerging in middle childhood (e.g., "I'm not as smart as most

kids," "I'm not a stiff grind," and "I'm very, very shy," pp. 63, 66). In the context of a longitudinal study of children's play, Torres (1990) similarly found that between the ages of 5 and 7 years children start to describe themselves in distinct and unique ways, emphasizing how they differ from others.

Why would distinctiveness-based encoding of self emerge in middle childhood? First, social comparison processes emerge around this time (Butler, 1989; Ruble & Frey, 1991). Also, distinctiveness has to be noted relative to some other representation. In fact, generic representations appear to develop prior to representations that encode distinctiveness (e.g., Farrar & Goodman, 1992; Fivush & Hamond, 1990). Research on young children's knowledge representations suggests that they originally have personal scripts that represent private expectations about the situations they encounter. As development proceeds, children realize the cultural nature of many of these expectations and they appear to replace these personal scripts with generic representations of situations (Hudson & Nelson, 1986; K. Nelson, 1986). It is only after such generic representations develop that children appear to note how they themselves differ from these generic representations and they start to use "I" to denote deviations from the prototypical agentive perspective (Budwig, 1996; K. Nelson, 1988, 1997). In fact, even though children below the age of 7 years do not appear to make psychological or dispositional generalizations about themselves (Flapan, 1968; Livesely & Bromley, 1973), they do have elaborate representations of prototypic individuals' psychological experiences in emotion-relevant contexts (Masters & Carlson, 1984; Schwartz & Trabasso, 1984).

In keeping with the above, McGuire and Padawer-Singer (1978) found that children define themselves in terms of salient traits on which they differ from their immediate environment. Also, in both children and adults, self is apparently described in negative terms of what one is not rather than in positive terms of what one is, suggesting that self is contrasted with some generic representation of other people (McGuire & McGuire, 1986, 1988). This tendency is also evident in adult conversation (e.g., Dickerson, 2000), in which the terms *people* and *Joe Public* are often used to represent the generic representation of others with whom self is contrasted.

In empirical research with adults, distinctiveness-based encoding of self is evident when extremity of self-rated traits is used as a criterion. For instance, Dunning and Hayes (1996) found that self-judgments were made more quickly when self was extreme on the relevant dimension as compared with a similar target person. Also, self-schematicity has been operationalized in terms of trait extremity—and being self-schematic leads to shorter processing latencies for schematic information (Markus, 1977).

⁴ Jones and Nisbett (1972) implicitly adopted a theory of mind view when they suggested that one can infer others' internal experiences by using cues generated by the target and "the logic of the situation" (p. 84) generalizations based on the observer's knowledge of what others and oneself have felt in similar situations, judgments they call "the inferred history of everyman" (p. 84). In contrast with the theory of mind view, they suggested that in cases of ambiguity the observer's tendency is to use the logic of the situation rather than his or her own personal experiences as the criterion for determining the target's internal experiences. Further, they suggested that not using the logic of the situation is difficult and that the individual would have "to strain his empathic abilities to imagine the vividness for the actor of the environmental cues he confronts" (p. 87).

To recapitulate, I have argued that self-representations emerge to encode how one differs from generic others. Within a protocentric model, then, self-knowledge is distributed. First, self-knowledge is available within generic representations that encode how individuals, including self, generally react. Such generic representations serve as the default, and in this context, one does not represent those aspects of self that are shared with others. Most of one's self-knowledge, then, is in fact generic knowledge about people in general. Second, there is a self-representation that develops to encode one's distinctiveness (e.g., "Most people go to the cottage in the summer, I travel."⁵ It is this self-representation that serves in answering questions like "Tell me about yourself?"

The SAD Paths for Making Predictions About Self and Others

How are generic representations and idiosyncratic representations used in making predictions about self and about others? Following Graesser (1981) and Holland et al. (1986), I assume that generic representations are "tagged" to indicate that self-experience or generalizations about the self differ from those of prototypic others. This *distinctiveness* tag is attached directly to the label of the generic representation and is independent of access to the representation itself. The presence of a tag serves to signal that self is distinct in the relevant domain. This means that making *me-not me* decisions essentially involves a tag-verification process.

The tag then serves as an entry gate via which all self-knowledge in the relevant domain becomes accessible. Predictions about self in tagged domains are based on the self-representation (e.g., "Yes, I'm friendly. How exactly am I friendly? Well, when the neighbors moved in, I brought over some home-baked cookies."). In those domains in which self is tagged as distinct, the path to self is via the SAD tag, and only aspects of self that are distinct in the relevant domain are accessed by "reading off" the tag (see Path A, Figure 1).

In contrast, when there is no tag indicating one's distinctiveness in a given domain, all information about the self is derived from the generic representation of the domain in question (see Path B, Figure 1). Notice that the self-representation and the generic rep-

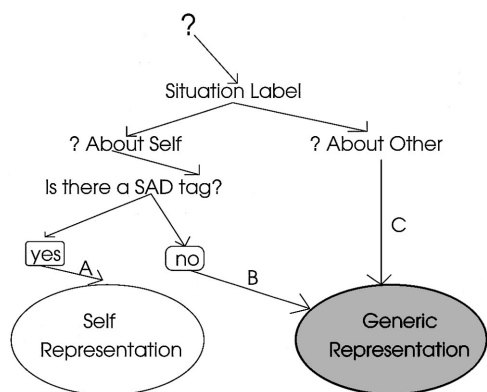


Figure 1. Self-as-distinct (SAD) paths for predictions about self with a SAD tag (Path A), about self without a SAD tag (Path B), and about prototypic others (Path C).

resentation do not overlap. That is, in the absence of a SAD tag, generic representations of prototypic situations and prototypic others serve as the default and are used to generate answers about self. This necessarily occurs because information about self that matches the generic representation is assimilated to it and becomes undifferentiable from other content within this representation (cf. Watkins & Kerkar, 1985). Consequently, the generic representation serves as the default value for predicting self's thoughts and feelings in the absence of a SAD tag. Notice that this implies that in all domains in which self is not encoded as distinctive, the generic representation is used to make predictions about self, resulting in many predictions that are the same for self and for prototypic others.

The path involved in making predictions about prototypic others differs considerably. For making such predictions, the individual finds the label of the relevant generic representation and then accesses the generic representation—without checking for the presence of a SAD tag. The generic representation is then searched for a prediction to be made. The most important implication of this type of representational system is that tags that indicate one's own distinctive standing in a given domain are ignored in making predictions about others (see Path C, Figure 1); the tag-verification process is not involved in making predictions about prototypic others, and one makes such predictions by using the label to access the generic representation directly. Hence, self-information is not used for making predictions about others' thoughts and feelings, precisely because it is atypical and indicates that self differs from the generic representation relevant to the context.

To extend this analysis, making predictions about well-known others differs from the way predictions are made both about self and about prototypic others (See Figure 2). In the model, well-known others are independently represented in terms of their distinctiveness from prototypic others. However, whereas self's distinctiveness is tagged at the level of the generic representation, given the number of well-known others coded for their distinctiveness in various domains, it is unlikely that there are distinctiveness tags attached to the representation label for each well-known other. Rather, the representation of the individual encodes all the distinctive features of that person. Consequently, predictions about well-known others are made by creating ad hoc intersections between the predictive context and the representation of the individual in question to examine whether there is any context-relevant information that can be called about the person in question (e.g., "Mary and steaks? Let's see, my friend Mary, the vegetarian jogger who eats nothing but salads, she'll think . . ."; see Path A, Figure 2). In the absence of context-relevant information, the generic representation is used for predictions about well-known others as well (e.g., "Most people like steaks. I don't know anything special about Mary's eating habits or health-related ideas, so Mary will think . . ."; see Path B, Figure 2).

However, well-known others are not only coded for their distinctiveness from prototypic others. Their representational uniqueness is that in addition one codes whether well-known others are distinctive from the prototype in the same way as self (e.g., "She's

⁵ Note that from this perspective distinctiveness and self-relevance are confounded because any domain in which one is distinctive necessarily means that the domain is self-relevant.

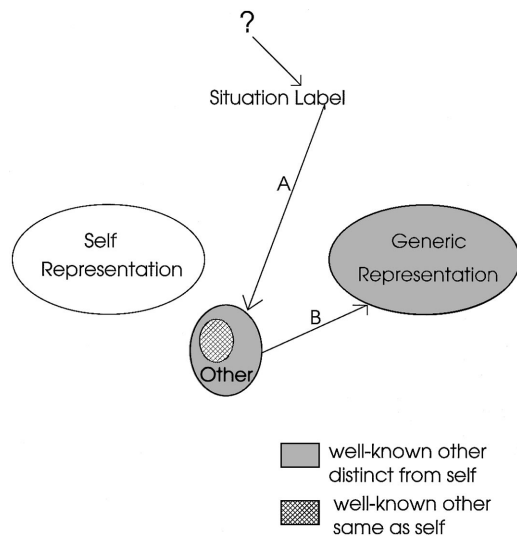


Figure 2. Self-as-distinct (SAD) paths for predictions about well-known others when the representation is informative (Path A) and when it is uninformative (Path A, then Path B).

like me—we both spend our summers as counselors at summer camp—we both love kids.”). This implies that in those domains in which self and well-known other share characteristics or history, self-information is activated in the process of making predictions about well-known others.⁶ However, that self is activated in making predictions about well-known others does not mean that one uses self to make predictions about well-known others, but rather that it is important to code those domains in which well-known others and self share distinctiveness from generic others, often by virtue of their shared history and relationship.

Note that within this type of representational system, even though one may be asked about self, when the domain is not self-relevant, predictions about self and about prototypic others are based on the same generic representation. In contrast with Nickerson’s (1999) model, SAD assumes that once the default model of generalized others develops, there is no independent model of one’s own knowledge.⁷ Within this model, then, apparently egocentric responses (i.e., ones that are the same for self and other) are in fact protocentric and reflect the use of information about prototypic others to make predictions and draw inferences about self. By extension, then, it is possible to define what constitutes an egocentric mistake in making predictions about others. In self-relevant domains, one only represents how self is distinct from prototypic others. When one makes the same prediction about others as about self in self-relevant domains, this would constitute an egocentric mistake because the very distinctiveness of self in such domains should, by definition, obviate the use of self for making predictions about prototypic others. Although, note that such mistakes should be very rare because individuals should be aware of being distinctive in those domains that are tagged, should ignore the distinctiveness tag, and should proceed directly to the generic representation for making predictions about others.

From this perspective, protocentric responses—those in which generic knowledge is used to generate predictions about self—do not constitute errors because they reflect the standard route in the

absence of distinctive self-knowledge in any given domain. Hence, when responses about self and others are the same, this ordinarily occurs because the generic representation is used to generate both predictions in the absence of self-information in the domain in question. Procentric responses, then, are more common within the SAD model.

Evidence for protocentrism can be garnered from a recent series of studies (Karylowski, Konarzewski, & Motes, 2000) in which participants judged preferences for one of two activities. In one of the studies, such preferences were judged for self or same-sex friend prior to those for most people. In terms of reaction times, self was a less effective prime in making judgments about most people than was a same-sex friend (Study 1). More important, if one compares across these studies, making judgments about most people was a more effective prime for making judgments about self than vice versa. This pattern is consistent with a protocentric view but inconsistent with an egocentric one.

My own research (Karniol, 2002) provides strong support for the protocentric view. In three studies conducted to test the SAD model, participants made sequential, verbal predictions about the likely cognitions or affective reactions that they and a prototypic other would have to a variety of situations, with target order varied across participants. In Studies 1 and 2, written predictions were made, and in Study 3, oral predictions were made and sentence-onset latencies were measured. In all three studies, the majority of findings support the predictions of the SAD model. In Studies 1 and 3, in self-relevant domains, predictions that differed for self and prototypic others were more common than predictions that were the same for self and prototypic others. In non-self-relevant domains, predictions that are the same for self and prototypic others were more common than in self-relevant domains. It is important to note that there was no correlation between the number of predictions that were the same about both targets in self-relevant and in non-self-relevant domains. This pattern is consistent with the self-representation being used for making predictions about self in self-relevant domains and the generic representation being used for making predictions about both self and about prototypic others in non-self-relevant domains.

In addition, in both of the above studies (Karniol, 2002), the observed sequence effects were also consistent with the protocentric view. Specifically, because accessing the self-representation in self-relevant domains makes the distinctiveness of self in that domain salient, self should not be used for making subsequent predictions about prototypic others in self-relevant domains. Consequently, in self-relevant domains, predictions that are the same about self and prototypic others should be less prevalent when

⁶ Note that in this model there is no overlap between representations of self and well-known others (cf. Smith, Coats, & Walling, 1999) because overlapping representations would entail bidirectional activation; one would be unable to think of self in a given domain without automatically and concomitantly thinking of relevant others in the same domain. Although one can, at will, think of relevant others in a given domain, this does not seem to occur automatically (e.g., I can think of myself as a person who enjoys a given TV show or eating tapioca without necessarily thinking of all those I know who may be similar to me in this respect).

⁷ In his discussion of the transformation rule model, Nickerson (1999) has interpreted it as meaning that self is used analogically, which is not what the transformation rule model claims, as I elaborate below.

predictions about self precede those about prototypic others than vice versa. This pattern was in fact found in Studies 1 and 3. Also, in Study 2, I demonstrated that the prevalence of egocentric errors can be reduced by inducing individuals to focus on self prior to making predictions about prototypic others. That is, to the extent that they are aware of focusing on self, the likelihood that they will erroneously use self for making predictions about prototypic others in self-relevant domains should be reduced. This expectation was confirmed. Finally, in Study 3, the pattern of reaction times in making sequential predictions about self and prototypic others and vice versa was also largely in line with hypotheses generated on the basis of the protocentric model.

Relating the SAD Model to Extant Models

Some aspects of my model are not entirely novel. A preliminary step in a protocentric direction was taken by Higgins (1981) when he suggested that one may be able to answer questions about self by accessing a representational structure other than self. Higgins claimed that just as one can answer questions about other people's thoughts and feelings by accessing prototypic representational structures, one may be able to answer questions about oneself by accessing the same prototypic representational structures.

To continue this line of reasoning, I (Karniol, 1990) argued that to know whether a given response represents egocentrism and the failure to suppress the self, one needs to verify that the direction of prediction is from self to others rather than from others to self. That is, responses about self that are identical to responses about others can be identical for at least two reasons. First, as is assumed in an egocentric model, such identity can arise because self-knowledge is used to make predictions both about self and about others. Second, as the SAD model specifies, it is possible for such identity to arise because knowledge about other people is used to make predictions both about others and about self (cf. Barresi & Moore, 1996).

The current model differs from extant models in two ways. First, similar to artificial intelligence models of default reasoning, it posits that generic representations are the foundations of the memory system, which uses these representations as the backdrop against which distinctiveness is gauged. Idiosyncratic representations are only created to code distinctiveness. As a consequence of this type of representational system, self does not serve to filter information about others and predictions about them are not made by using self-knowledge. Because self-knowledge is available both within the self-representation and within generic representations of prototypic others, from the perspective of SAD, different questions about the self invoke different paths (cf. Klein, Cosmides, Tooby, & Chance, 2002). To answer self-descriptiveness questions, one need only check for the presence of a SAD tag—without accessing the self-representation—thus resulting in very fast response times. Consequently, answering self-descriptiveness questions would not be expected to serve as a prime for answering questions that require access to the self-representation or to the generic representation because neither of these representations is involved in answering self-descriptiveness questions.⁸ Because self-knowledge is distributed in SAD, generating hypotheses about reaction times in answering questions about self becomes a matter of delineating the path that needs to be followed to answer the question of interest in any given context.

Second, the SAD model contrasts with models in which two types of self-representation are assumed to exist, the personal self and the social self (e.g., Brewer & Gardner, 1996; Stapel & Koomen, 2001), where the former represents those aspects of the self that differentiate self from others and the latter represents self's inclusion in the social world. In Brewer's (1991, 1993) *optimal distinctiveness* model, for instance, the sense of self is shaped by opposing needs of assimilation and differentiation between self and others. Assimilation is the inclusion of self and others in social categories by shared features or common interests. Differentiation is the exclusion of others from the definition of self. When social identity is salient, the individual assimilates his or her own self-concept to that of the typical in-group member; when personal identity is more salient, self-other comparison within the in-group becomes more important.

From the perspective of SAD, alternatively, there is only one self-representation, with this representation reflecting one's distinctiveness from the default representation that encodes generic others. In this context, in-groups and out-groups are represented both in terms of their own distinctive features relative to generic others (e.g., "Skinheads are . . .") and in terms of those distinctive features or history they share with self (e.g., "Skinheads are bald like me but . . ."). The degree of perceived overlap between self and well-known or loved others and self and in-groups is much greater than between self and out-groups, by virtue of shared experiences and greater familiarity (cf. Aron, Aron, Tudor, & Nelson, 1991; Smith & Henry, 1996). Viewed in this light, motivational processes can influence whether areas of overlap between self and social groups are focused on or whether distinctive features, which involve disjunctions of the relevant representations, are focused on (cf. Mussweiler, 2001a, 2001b). However, in SAD, these processes are an *intrinsic product* of the way self-knowledge is represented and contrasted with generic knowledge structures.

The advantage of a protocentric representation system of this kind is twofold. First, it is more economical because in all those domains in which people are assumed to function in the same way, generic representations can be used to make predictions about people's likely psychological experiences and reactions. As Rips (2001) has argued with respect to natural categories, generic representations tell what is possible within the domain. Second, a generic representation system that is used as the default with noted exceptions obviates the need to engage in self-suppression. Self-suppression is problematic for several reasons. First, as noted by SSP researchers, it requires attentional resources. Wegner's (1994) research on ironic processes has illustrated the difficulty of suppressing unwanted thoughts, especially when the person is cognitively busy. Second, inhibitory phenomena are rarely found and are not well understood when they are found (M. C. Anderson & Spellman, 1995; Dagenbach & Carr, 1994). Third, despite the important theoretical status accorded to self-suppression in ego-

⁸ In this light, recalling episodes exemplifying a given trait requires access to both the self-representation and the generic representation of the relevant trait. In contrast, recalling how one typically exemplifies a given trait only requires access to the relevant generic representation. This could account for the finding that the time to retrieve self-typical behaviors for a given trait is about half the time to retrieve specific behavioral episodes that exemplify the trait (Klein, Loftus, & Sherman, 1993).

centric models, empirical evidence for such suppression has not been forthcoming.

Applying the SAD Model to Social Cognition Research

Using the SAD model, one can derive a range of counterintuitive hypotheses and can account for a number of inconsistencies in several domains of social cognition. For instance, because the SAD model assumes that knowledge structures about social categories and well-known others are constructed with reference to the generic representation and encode distinctiveness, there is a straightforward prediction about the degree of overlap between self and others versus self and well-known others. Specifically, from the perspective of SAD, there should be more overlap perceived between self and a prototypic other than between self and a well-known other. Consistent with this analysis, Prentice (1990) found more overlap in describing self and unfamiliar others than in describing self and familiar others. In the same vein, Karniol et al. (1997) found that the transformation rules used for making predictions about self and prototypic others were more similar to each other than the transformation rules used for making predictions about self and well-known others in the same context. Finally, in this context, Fuhrman and Funder (1995) found that peers' own self-schemas had no appreciable effect on judgments of their friends. This is consistent with the SAD view of well-known others as distinctive, a view that also receives support from Andersen and Cole's (1990) finding that well-known others are represented as having more distinctive attributes (called *nonredundant attributes*) than others who are not well-known, members of stereotypic social categories, and members of trait-based social categories.

The SAD model can also be used to account for many of the problematic findings in false-consensus research (e.g., Alicke & Largo, 1995; Kernis, 1984; Marks & Miller, 1987; Sherman et al., 1984). From the perspective of SAD, false-consensus effects would only be expected in those domains in which there is no SAD tag attached to the relevant generic representation. Specifically, when there is no SAD tag, false-consensus effects should be evident because predictions about self and about others are both based on the generic representation. When there is a SAD tag, to answer about oneself, one accesses the self-representation; but to answer about others, one accesses the generic representation. For further clarification of this point, when I am weird or atypical in a given domain, there is no reason to assume that I will be like others in that domain or that they will be like me. Consequently, predictions about self and others will not evidence false-consensus effects in those domains in which there is a relevant SAD tag. This analysis implies that only in those domains in which one perceives oneself as generally normal (e.g., willingness to carry an "Eat at Joe's" sign, as in Ross et al., 1977) that false-consensus effects emerge.

There are studies that support the protocentric view although they were not conducted within the SAD framework. For instance, Brodt and Ross (1998) found that 43% of all predictions about others differed from predictions about oneself. Although the remaining 57% of predictions were ones in which one's own choice was apparently attributed to others, in fact, 39% of these choices represented predictions in which one's own choice matched the choices attributed to relevant stereotypic categories. Thus, only 18% of all predictions were in fact egocentric. The argument, then,

is not that egocentric responses are not possible but rather that they do not represent the majority of responses.

From this perspective, because self is coded to reflect how it differs from prototypic others, responding about self first should result in less false consensus than responding about others first, as has been found. Also, one would expect less false consensus in those individuals who tend to see themselves as unique in some way. The findings that those high in need for uniqueness, low in self-esteem, or extreme on a given dimension (e.g., introverts and extroverts) exhibit less false consensus are consistent with SAD because all these personality variables are conceptualized as equivalent to having a SAD tag. Extant accounts of false consensus do not provide a comprehensive explanation of this pattern of findings.

SAD can also parsimoniously account for self-anchoring effects. To do so, first one needs to consider how well-known others and unknown others are represented. Because in SAD representations of specific others are created to reflect how they differ from prototypic others, accessing these representations yields only information about distinctiveness. The representational structures for close others with whom people interact on a regular basis are much more embellished in terms of their distinctive features than the representational structures for those with whom people do not have close contact. In light of this, to answer questions about close or well-known others, one may use the representation of these others because it may yield relevant information (e.g., "My mother is unique in the following 50 ways . . .").

To answer questions about public figures, however, one must access the generic representation, and computations based on what is known about the public figure are made "on the fly." So, when I am asked how similar I am to Walter Cronkite or any other public figure, my limited knowledge of their past and current undertakings (e.g., "What exactly do I know about Walter Cronkite other than that he was the CBS evening newsman?") may serve to yield a judgment of how similar they are to prototypic others on the relevant dimension and, by inference, how similar they are to me. Although, note that accessing representations of public figures yields primarily the overlap between them and the generic representation. In contrast, when I am asked how similar I am to the above public figures, I first examine how similar I am to the generic representation and then how similar these public figures are to the generic representation on the relevant dimension. Because self is coded to reflect distinctiveness from prototypic others, accessing the self yields primarily information about one's own distinctiveness. Hence, public figures are viewed as more similar to the generic representation of prototypic others (and thereby to me) than I am viewed as similar to the generic representation (and thereby to them). This analysis is highly consistent with Mussweiler's (2001a, 2001b) research on the adoption of a similarity focus when comparing others with self and a difference focus when comparing self with others.⁹

⁹ One reviewer suggested that Tversky's (1977) feature-matching hypothesis can account for the self-anchoring effect by assuming differences in the elaborateness of knowledge about self versus knowledge about others. Although, in fact, Tversky's point regarding elaborateness is secondary to his tenet that similarity is determined by the number of unique

One implication of this analysis is that on those dimensions on which self is perceived to be similar to well-known others, the self-anchoring effect should not hold. Although this hypothesis has not been directly tested, it is fully consistent with the finding that only when individuals see themselves as similar to a target on a relevant dimension do their self-schemata affect their predictions about that person's behavior in the relevant sphere (Catrambone & Markus, 1987). Also in keeping with this analysis, perceptions of self as typical group members or individuals have been found to vary by whether participants performed a self-descriptive task prior to or subsequent to answering as to one's typicality or individuality (Simon & Hastedt, 1997). That is, as SAD would predict, when participants first described themselves, they indicated greater perceptions of individuality and less typicality than when the opposite order was used.

Applying the SAD Model to Empathy Research

A counterintuitive implication of the SAD model is that individuals who see themselves as more distinctive or differentiated from prototypic others and see well-known others or social categories as more distinctive from prototypic others will evidence more empathic social perception. This will be the case because such individuals will not use the generic representation of others to make predictions about various targets for whom they have a representation that codes their distinctiveness from prototypic others. Evidence for this counterintuitive prediction comes from several unrelated sources. First, Karniol and Shomroni (1998) found that individuals high on Davis's (1983) Interpersonal Reactivity Index, which assesses self-perceived empathy, differentiated more in terms of the variety of their predictions between younger and older targets than did those low on the scale. That is, those individuals high in empathy and perspective taking were more likely to use their knowledge of how older targets differ psychologically from younger ones to make different predictions about how older people would think and feel in a variety of contexts. Second, Jarymowicz (1993, 1998) has shown that individuals who see themselves as more distinct, both as compared with "we" and as compared with others in general, evidence less egocentrism across a wide variety of dependent measures. In particular, the more distinctive individuals saw themselves as being, the more likely they were to justify prosocial behavior by using exocentric justifications that focused on others' feelings rather than endocentric justifications that focused on their own feelings.

To continue this line of analysis, instructions to empathize with another person should serve to render that person less prototypical than he or she would otherwise be perceived as being. However, another person can be viewed as distinctive from prototypic others

either in ways that are similar to oneself (e.g., "He's just like me!") or in ways that are distinctive not only from prototypic others but also from self (e.g., "A person who's been institutionalized for emotional disorders is neither like me nor like prototypic others."). Consequently, when one is told that the target person is in the same social category as oneself (i.e., an average college student), has no unusual positive or negative characteristics, and is relatively normal socially, instructions to empathize with such a target should serve to make him or her distinctive but more similar to oneself and, consequently, should also lead to more perceived overlap between the target person and oneself. From this perspective, then, it should make no difference whether instructions to empathize focus on the target person's feelings or one's own anticipated feelings in the same context because in either case the result is a differentiation from prototypic others in a way that suggests greater similarity to self.

A fascinating study by Davis, Conklin, Smith, and Luce (1996, Study 1) provides support for this line of analysis. They found that individuals who were asked to imagine either their own or the target person's feelings while viewing a taped discussion increased their perceived similarity to the target and saw more trait overlap between themselves and the target than did participants who were asked to concentrate on visible details. More important from my perspective, no differences in trait overlap or perceived similarity to the target were found between the condition in which participants were asked to imagine the target person's feelings versus the condition in which they were asked to imagine their own likely feelings in the same situations.

General Discussion

I have outlined a protocentric representational system in which generic representations are used to make predictions about self and not vice versa. In a protocentric representational system, individuals use generic representational structures that encode how the prototypic person behaves and reacts in different settings as their default representation. Other representations that encode distinctive or idiosyncratic knowledge about self, social categories, and known others are created to indicate how these individuals and groups deviate from the generic representations that are used as the default.

On the basis of this differentiation between generic and idiosyncratic knowledge representations, I claim that generic knowledge about prototypic others serves as the anchor of comparison for knowledge about specific other people and social categories. Thus, in the absence of information about another person, default values are assigned and the target is assumed to function like a prototypic individual. Similarly, unless self is known to be distinctive in a given domain, self too is assumed to function like a prototypic individual.

In the context of the SAD model, individuals know how to answer questions about covert psychological processes, accessing the self-representation when asked about self in self-relevant domains and answering about generic others when self or others are the target of the question in non-self-relevant domains. This does not mean that individuals are infallible in answering such questions; they can and do make mistakes, occasionally using the self-representation to make predictions about others. However, in a wide range of studies that my students and I have conducted with

features of the subject of comparison, that is, features not shared with the referent. As such, the more unique features that the subject has, the less similar it is judged to the referent. Tversky assumed that the number of unique features may depend on the relative elaborateness of representations. Consequently, finding an asymmetry implies that the subject of comparison has more unique features but does not necessarily imply that the subject of comparison is also more elaborately represented. Tversky's model, then, is fully consistent with my model of self as represented in terms of its distinctiveness.

children and adults (e.g., Karniol, 2002; Karniol et al., 1997; Karniol & Koren, 1987; Karniol & Shomroni, 1998), erroneous predictions were rare and the majority of predictions about self, prototypic others, and well-known or nonprototypic others were found to be consistent with the SAD model. First, predictions about self and about others tend to be largely differentiated from each other across a wide variety of stimulus contexts and types of psychological experience (i.e., thoughts vs. feelings). Second, the degree of overlap in predictions between self and others can be increased or decreased by manipulating the sequence in which predictions about self and others are made, the stimulus contexts about which predictions are made, and the individual's state of self-awareness. Third, predictions that are the same about self and about others tend to be made in those domains that are not self-relevant for the individual making the prediction rather than in those domains that are self-relevant.

In general, then, in SAD, self does not serve as the default representation in social perception. Much theorizing in social psychology implicitly or explicitly assumes that self is the center of the social universe and filters all incoming information. However, there has been no previous attempt to elucidate the kind of representational structure that would be implicated if self did in fact serve as default. As I have shown, the SAD model can account for many discrepancies across a range of phenomena, each of which otherwise requires ad hoc theorizing. Thus, the challenge at this point would seem to be to posit a representational structure other than SAD to account for the pattern of inconsistent results in the domain of self-reference, false consensus, empathy, and my findings across the studies I cited.

More generally, I (Karniol, 1995) have suggested that social cognition research can be viewed as involving question-answering systems. The major assumption of a question-answering approach (e.g., Graesser, Byrne, & Behrens, 1992; Kolodner, 1984; Lehnert, 1981; Singer, 1991) is that only one representational system exists and that the representational structures within this system and the relations between them must account for all relevant phenomena when answering questions (cf. Jost, Kruglanski, & Nelson, 1998; Trabasso, 1997). Various domains in social cognition, then, are viewed as requiring individuals to use the same representational system to generate different answers to different questions. In attribution research, participants are asked about the likely covert psychological processes that may have caused prototypic others' behavior. In research on social perception, participants are generally questioned regarding other people's or their own traits, likely behavior, thoughts, and feelings. Perspective-taking research tends to focus primarily on others people's likely thoughts and feelings, making theories of other minds of central concern. However, the representational structures and memory search used to answer questions across these domains are the same; one representational system, containing structures representing self, prototypical others, well-known others, and social categories, yields answers to all questions across these domains. This representational system is highly sophisticated, using the knowledge that is represented within it in different ways, depending on the questions to which an answer is being sought. Each question determines those answers that are considered "legal" in the specific context.

Once the generic representational structures that serve as the default are made explicit and the relations between them and those idiosyncratic representations that encode distinctiveness from the

default are elaborated, the commonality in the search process used to answer questions across these domains of research becomes clear. Thus, the major benefit of this approach lies in that it serves to bridge between diverse domains of research in social cognition and perspective taking, making it clear that social cognition theory and research can no longer avoid dealing head-on with issues involving theories of mind. Such an integrative endeavor is necessary to develop a coherent view of social cognitive processes. The SAD model represents a step in that direction.

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