5 What Does the Self Look Like?

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Cogitive psychology asks questions about how information is acquired, stored, and used to guide adaptive behavior: Primarily, it studies the representation and processing of knowledge. Social cognition asks these questions about social objects and events: ourselves, other people, the situations in which we encounter them, and the behavior that transpires between us. In their chapter, Klein and Loftus are especially concerned with the mental representation of a social entity that is particularly close to us: ourselves.

In a pair of papers, Cantor and I defined the self as the mental representation of one's own personality (Kihlstrom & Cantor, 1984; Kihlstrom et al., 1988; see also Cantor & Kihlstrom, 1987). From a structural point of view, we construed the self as either a feature list or a propositional network. That is, the self consisted of a summary of the personality features and attributes characteristic of oneself; or, alternatively, the self was a node linked to a web of factual statements about one's characteristics, behaviors, and experiences. However, consideration of the various forms that mental representation can take suggests that our definition, although in the right ballpark, was perhaps too narrow. From a cognitive point of view, it now appears that the self is nothing less than one's mental representation of *one's self*, including one's personality but going far beyond. Let me explain.

ALTERNATIVE MODES OF MENTAL REPRESENTATION

In an influential discussion, Anderson (1983, 1990) described two different major types of representation, perception-based and meaning-based, each with

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two subtypes. Perception-based representations store one's knowledge of the perceptual structure of objects and events, and come in two forms: spatial images and linear orderings. Spatial images encode information about the configuration, or relative position of an array of features or objects: up/down, left/right, front/back, and the like. But they are not *visual* images, although neuropsychological evidence suggests that knowledge can be represented in this form as well (Farah, Hammond, Levine, & Calvanio, 1988). This finding, in turn, suggests that there may be other forms of analog representation, corresponding to other sensory/perceptual modalities—for example, olfactory, gustatory, tactile, and kinesthetic images. Linear orderings, by contrast, encode information about the progression, sequential order, or temporal succession, of events: first/last, before/after/inbetween, and the like.

Meaning-based representations are more abstract than perception-based representations, and encode information about the semantic relations among objects and events. They too come in two forms: verbal propositions stating the relation between two arguments, such as *subject–verb–object* relations; and schemata, organized knowledge structures that contain slots for various attributes of a category, and typical values for these attributes. Propositions represent specific objects and events (e.g., *John's house was made of wood and stucco*), whereas schemata represent general categories of objects and events (e.g., *Houses are types of buildings, sometimes made of wood and stucco but sometimes made of brick, and rarely made of straw*).

For the most part, Cantor and I had meaning-based propositions in mind when we discussed the self. We had the idea that the self, as a memory structure, consists of declarative statements such as *SELF likes Stravinsky* and *SELF is kind* and *SELF helped an old man across the street on Monday* (Kihlstrom & Cantor, 1984, Figure 4). A good example of this point of view is the associative network model of person memory proposed by Hastie (1980, 1981, 1988) and Srull (1981), which in turn is based on a forerunner of Anderson's (1983) ACT* model of memory known as HAM (Anderson & Hastie, 1974). Hastie proposed that social memory is organized by persons who are represented as single nodes in a larger associative network (see also Kihlstrom & Hastie, in press). These nodes are then linked to other nodes that represent behaviors that the person has displayed, events in which the person has participated, and attributes that the person possesses. The self, then, is one of these nodes—perhaps richer than the others, because of the sheer amount of knowledge we possess about ourselves, compared to even our most intimate acquaintances; but not qualitatively different from a representation of knowledge about other people.

THE WORK AT HAND

This general point of view also appears to guide the work of Klein and Loftus, and in fact their specific proposal—a dual exemplar/summary view that includes

both abstract knowledge about general attributes and concrete knowledge about specific behaviors and experiences—closely resembles the Hastie–Srull proposal. One important difference is that models of person memory are usually tested by having the subject memorize facts, or form impressions, concerning artificial people—synthetic concoctions of the experimenter designed to satisfy the requirements of careful experimental control, but not resembling anybody the subject knows. In such a task, the subjects must rely on a small set of resources: the architecture of cognition, and of memory in particular; and their abstract knowledge about people in general, of trait-behavior relationships, and the relationships among traits.

The experimenter's situation is quite different when it comes to the self, because subjects do not come into the experiment cold. They appear at the laboratory door with a substantial fund of knowledge (or, at least, beliefs) about the self—information that is not, in principle, amenable to rigorous experimental control. Thus, it is not possible to present subjects with a set of items, and have them accept them as self-descriptive, just as they would accept them as descriptive of some other person. Moreover, subjects do not possess only a single memory structure representing their self-concept. They also own an ideal self, representing their goals and aspirations for themselves, and an "ought" self, representing others' hopes and ambitions for them (Higgins, 1987). Given the pressures to maintain self-esteem and a positive self-presentation, it is never completely clear which self is serving as the basis for the subject's response to the experimental task. And finally, subjects have an investment in themselves that is lacking in the artificial targets of the typical person-memory experiment. Thus, emotional and motivational factors come into play, and may muddy the picture considerably. In short, the instant one turns to the self, one loses a great deal of precious experimental control.

Klein and Loftus attempt to get around these problems by employing an alternative set of experimental procedures. Instead of asking subjects to form impressions and remember behaviors, the canonical tasks of the person-memory literature, they ask subjects to make judgments about themselves. In principle, this sort of task (e.g., *Are you EXTRAVERTED?*) is no different from that involved in studies of lexical access (e.g., *Is PLAUDIT a word?*) or category verification (e.g., *Is a CHICKEN a bird?*). In all three cases, the experimental task is designed to get at the structure of preexisting knowledge. Moreover, Klein and Loftus make good use of priming techniques (Meyer & Schvaneveldt, 1971; Ratcliff & McKoon, 1981), to see whether knowledge activated in one task influences performance on a subsequent task. In their basic experiment, subjects are presented with a trait word, and asked to perform one of three tasks: to indicate whether the word is self-descriptive (Describe), to retrieve and autobiographical memory related to the word (Remember), or to supply the semantic, denotative meaning of the word (Define). Then they are asked to perform another task on the same word: This task is either the same or different from the first one. In general, they found that the autobiographical memory task did not prime

performance on the self-descriptive task, nor did the self-descriptive task prime performance on the autobiographical memory task.

These results indicate that subjects do not search through autobiographical memory in the course of making judgments about themselves; nor do they access abstract self-knowledge in the course of retrieving autobiographical memories. These results, in turn, support the conclusion that autobiographical and trait information is encoded, and retrieved, independently in memory—an inference that is bolstered by a wealth of collateral evidence involving encoding specificity and encoding variability. Klein and Loftus consider their results to be inconsistent with conventional associative network models of self-structure, but this is so only for that subclass of models that assumes that nodes representing traits are interposed between nodes representing the people who possess them and others representing the behaviors exemplifying them. In fact, their conclusions are quite congruent with the associative network models of person memory offered by Hastie (1981, 1988) and Srull (1981), in which trait and behavioral information are encoded independently.

THE ROLE OF ORGANIZATION

Still, the memory structure representing the self is a very rich one, containing a vast amount of information, and it would be strange if there weren't some organization to the structure. One of the earliest discoveries leading to the development of cognitive psychology was of organization in free recall: associative clustering, category clustering, and subjective organization. This shows that perceivers have imposed some structure on their experiences, so that the mental representation of a set of events does not simply mirror the way those events occurred in the world. Items that have some preexisting associative or conceptual relationship tend to be recalled together, regardless of whether they appeared in adjacent positions during presentation; and even if the experimenter goes to great lengths to create lists of ostensibly unrelated items, subjects will impose some narrative or imagistic structure on the list.

Obviously, organizational recoding of this sort is an adaptive feature of large knowledge structures, because it permits easy access to information. And just as the sorts of items that appear in word lists may be organized by conceptual category, it makes sense that social information be organized as well. If so, traits would seem to be a prime candidate for an appropriate organizational rubric: Neurotic behaviors would fan out from a node representing neuroticism, whereas conscientious behaviors would fan out from another node representing conscientiousness. In the same fashion, traits themselves would be organized by higher order traits: Qualities like talkative and frank would fan out from a node representing extraversion, whereas qualities like gentle and cooperative would fan out

from another node representing agreeableness. It is a rational way to build a memory.

The paradox is that this sort of organization is hard to detect (Smith & Kihlstrom, 1987). Klein and Loftus show clearly that memory search does not pass through subjects' traits on its way to their behaviors. And unpublished research in my laboratory by Jeanne Sumi Albright (for a brief description see Kihlstrom et al., 1988) and by Shelagh Mulvaney failed to reveal priming in the recall of interpersonal or emotional events. That is, recalling one ambitious-dominant behavior facilitate recall of another ambitious-dominant behavior on the very next trial; nor did recall of one pleasant event did not facilitate recall of the next. Similar findings have been obtained in more conventional person-memory paradigms (e.g., Hamilton, 1981; Hamilton, Katz, & Leirer, 1980; Hoffman, Mischel, & Mazze, 1981; Jeffrey & Mischel, 1979; Ostrom, Lingle, Pryor, & Geva, 1980; Ostrom, Pryor, & Simpson, 1981). And Smith and Kihlstrom (1987) found little evidence that recall of primary traits (e.g., talkative and adventurous, tidy and persevering) was organized by superordinate trait categories (e.g., extraversion, conscientiousness)—although they did find evidence for illusory correlations between related traits created by subjects' implicit theories of personality.

On the other hand, there is good reason to believe that behavioral information does come into contact with trait information as it is processed in memory. One of the most well-established results in the person memory literature is the schematic processing effect (Hastie, 1980, 1981): Given that a subject has formed a personality impression (or schema) of a target person, behaviors congruent with that impression are remembered better than those that are wholly irrelevant, whereas behaviors that are incongruent with the impression are remembered best of all. The theory is that subjects are surprised by schema-incongruous behaviors, attempt to explain them, and this extra processing at the time of encoding yields a more memorable trace; and that the subject can draw on the personality impression to generate cues that facilitate access to schema-congruent behaviors. Given this experimental outcome, and the obvious advantages of an organized memory system, the problem is to determine how trait and behavioral information are related. Apparently, this problem remains unsolved by Klein and Loftus.

SELF-SCHEMATA

The question of organization is central to the question of the self as a schema, a mental structure that preserves information about the interrelationships among objects, events, and their features. Social cognition is full of such schemata. Some of these are reflected in what has come to be known as implicit personality theory (Bruner & Tagiuri, 1954; Schneider, 1970): The halo effect, or the assumption that socially desirable traits are positively correlated (Rosenberg &

Sedlak, 1972); and the "Big Five" notion that extraversion, agreeableness, conscientiousness, emotional stability, and intelligence (or openness; see Glisky, Tataryn, Tobias, Kihlstrom, & McConkey, 1991) are the basic dimensions of personality. Natural language contains a number of personality-type terms that label categories of people: On today's college campus, jargon terms such as wonk, nerd, jock, hippie, hood, preppie, and princess abound (Cantor & Mischel, 1979; Cantor, Mischel, & Schwartz, 1982). We carry in our heads an assortment of scripts that describe generic sequences of actions that take place in broadly defined situations such as restaurants (Schank & Abelson, 1977) and sexual encounters (Gagnon, 1974). And, as much as we might try to deny or overcome them, we all hold social stereotypes about outgroups: men about women, Whites about Blacks, Anglos about Hispanics, straights about gays and lesbians, young about old, Israelis about Palestinians, Greeks about Turks (and vice-versa, of course).

These all are schemata, with slot structures that specify characteristic attributes and typical values on these attributes, embedded in a hierarchy of supersets and subsets, wholes and parts. Propositions represent the specific, although schemata represent the shared; they permit us to make inferences about unseen attributes of objects, events, people, and situations. Schemata are important mental structures, and it would be interesting to know whether the self participates in them. Klein and Loftus approach the self as if it were a person like any other. And because we have schemata for other people, it may very well be that we have schemata for ourselves, as well.

In an influential line of research, Markus (1977) described the self as a schema, but she used the term *schema* to refer to those characteristics that were highly descriptive of and very important to one's self-concept. The schema concept as used here, however, refers to something a little different—actually, two things. First, knowledge about the self must somehow cohere into a unified whole: It must be possible to capture the "gist" of oneself, or what one is like in general, just as it is possible to capture the gist of another person, or of a story, or of a category of natural objects; and second, that the self itself (pardon the expression) participates in a larger structure that somehow defines the relationship(s) between self and others. Cognitive psychology has developed a large number of paradigms for establishing the psychological reality of schemata in the domain of natural objects and for exploring the structure of these representations. This was once a hot topic in social cognition as well, and perhaps it is time to return to it.

One difficulty with thinking of the self as a schema is that schemata represent categories, while each self is, almost by definition, unique. However, each individual is a member of a number of different social categories. A person may be a White male, young, and a former hippie; he may also be an Easterner, highly educated, a member of the professional class, and a registered Independent. These groups confer attributes upon their members, and if they do not they

are perceived as doing so; in any event, they are a part of that individual's identity, and they make him more like some people, and less like others. Similarly, each individual plays a number of different social roles. She may be a doctor, sit on the zoning board, and coach a soccer team; she may also be a daughter, spouse, sister, aunt, mother. These roles also confer attributes on the individual (or are perceived as doing so); they too are part of that individual's identity, and make her more like some and less like others. An individual may be a typical Easterner, with his intellectual airs and contempt for the provinces; or he may be quite atypical; either way, these relationships must be somehow represented in the self-schema. Klein and Loftus rightly focus their work on the specific knowledge that one has about oneself; but it is also important to locate the self in the broader interpersonal space (Kihlstrom & Cunningham, 1991), and take into account the impact of the person's group memberships and social roles.

Moreover,, the self may not be a monolithic, unitary cognitive structure. Rather, there may well be a whole host of selves. We know that human social behavior is very flexible, and can vary markedly from one situation to the next (Mischel, 1968; Ross & Nisbett, 1991). And because we are usually conscious of what we do, there is no reason to think that this cross-situational flexibility is not given mental representation.[1] Thus, there may well be multiple mental representations of self, corresponding to the broad social categories of social situations (at home alone; at home with family; at work with colleagues; at work with students; at the bowling alley; in the tavern) where the self resides. There are also those moments when we recognize that our thoughts, feelings, desires, and behaviors, are uncharacteristic of the self we (and others) know. Under these circumstances, we are likely to say "That wasn't me" or "I'm just not myself today." Such perceptions imply a hierarchical arrangement of context-specific selves, with some selves more typical than others; this conceptual hierarchy also constitutes a self-schema.

PERCEPTION-BASED REPRESENTATIONS
OF THE SELF

Schemata are meaning-based knowledge structures, but they are not comprised wholly of propositions. They can include perception-based knowledge structures as well, including spatial images, visual images (and perhaps images in other modalities as well), and linear orderings (of course, scripts themselves are linear

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[1]There are exceptions to this proposition, in the case of multiple personality and other dissociative disorders (Kihlstrom, 1992; Kihlstrom, Tataryn, & Hoyt, in press; Spiegel & Cardeña, 1991). In this case, an amnesic barrier appears to prevent normal communication and interaction between subordinate selves—a point that cannot be pursued here.

orderings). This fact raises the question of the role that these forms of mental representation might play in the self, and how we would study them.

That we possess something else besides verbal, meaning-based, propositional knowledge about the self is betrayed by one of our most familiar self-idioms: the self-image. Perhaps it is time to get concrete about this metaphor. There cannot be much doubt that we have analog representations of our bodies, with respect to both their external appearance and their internal sensations. Monkeys and infants recognize when their faces have been painted; adolescents perceive changes in their bodies; amputees experience phantom limbs; the obese are conscious of what their bodies look like, and feel like, as they move about; lovers recognize each others' touch, and smell, and taste; anorectics have views of themselves as fat that depart so radically from objective reality as to be marked as quasi-delusional. Cognitive psychologists have developed a number of ingenious techniques, such as mental scanning, mental rotation, mental comparison, and mental mapping, for studying the structure and processing of spatial images (see, e.g., Kosslyn, 1980; Shepard & Cooper, 1982), but these images have been of nonsocial objects. Perhaps it is time to deploy them in the study of the self.

In their research, Klein and Loftus honored the distinction between two types of declarative knowledge concerning oneself: autobiographical and trait information, or episodic and semantic memory (Tulving, 1972). And episodic memory is a prime candidate for yet another form of representation, linear orderings. Specific episodes in our lives may be represented by single propositions (e.g., *SELF helped an old man across the street on Monday*), but as we unpack these events they often reveal a plot structure, so that the event has a prologue, a beginning, a middle, an end, and an aftermath (Pennington & Hastie, 1986). For example, when subjects remember the events and experiences that transpired during a hypnosis session, they tend to recall them in the order in which they occurred—unless this temporal organization is disrupted by posthypnotic amnesia (Evans & Kihlstrom, 1973; Kihlstrom & Evans, 1979). Similarly, the fact that people can correctly order the personal and public events of their lives (Fuhrman & Wyer, 1988; Wyer, Shoben, Fuhrman, & Bodenhausen, 1985) indicates that the representations of these individual events are also related to each other by a temporal string.

But even allowing for gaps caused by infantile and childhood amnesia, normal forgetting, and the memory failures of old age, the entire life span of an individual, from birth to death, encompasses a lot of events. If a string as short as the alphabet is divided into chunks, yielding the strings-within-strings phrase structure of the "Alphabet Song" we learned as children (Anderson, 1990), this must also be true for autobiographical memory. The question is: Where are the phrase boundaries? What are the natural chunks in a person's life? It seems hardly likely that autobiographical memories are organized like desk calendars, week by week, month by month, year by year. Perhaps, in schooled, literate, industrial, and postindustrial cultures, some of a person's life history may be organized by

school and work: preschool, elementary, junior high, high school, college, graduate or professional school, job entry, first promotion, new job, next promotion, retirement. In addition, the natural divisions of the life cycle, similar to Erikson's "eight ages of man," may provide the structure: infancy, toddlerhood (both fairly completely covered by infantile and childhood amnesia; see Kihlstrom & Harackiewicz, 1982), early childhood, preadolescence, adolescence, young adulthood, middle age, and old age. Another plausible scheme is provided by important cultural rituals: first day at school, bar/bat mitzvah or first communion, first sweetheart, first lover, marriage, first house, childbirth, divorce, remarriage, and the like. Obviously, each individual has all these schemes, and others, available to him or her; and the precise location of the divisions varies markedly from person to person. This fact of human complexity and individuality makes nomothetic research difficult, but the problem is an interesting one nonetheless.

THE ROAD NOT TAKEN

Klein and Loftus address few of these issues directly, but the fact that they are raised here should not be construed as any sort of criticism. Rather, they are raised as a sort of tribute to the stimulating nature of their research. Klein and Loftus epitomize that all too small group of personality and social psychologists who try to take cognition seriously, and who seek to work within the framework of concepts, principles, models, and methods provided by cognitive psychology and cognitive science. They have gone far beyond the hand waving that characterizes so much work in the field, and put detailed formal models of mental representation to rigorous empirical test. Their work is a stimulus to the imagination, and it reminds us that, for all the attention paid these days to everyday cognition, interesting questions still can be addressed and answered within the confines of the laboratory.

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