
Are Descriptions of the Self More Complex Than Descriptions of Others?

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Five studies compared the complexity of explicit semantic knowledge of self and others. In Study 1, students rated targets on unipolar and bipolar trait scales. In Study 2, they used trait checklists to describe targets in various roles. Study 3 replicated Study 2 except participants generated a unique set of roles for each target. In Studies 4 and 5, judges coded the complexity of open-ended descriptions of each target. Self-other differences in complexity were found in both directions and depended on such factors as the valence of the descriptors and the closeness of the target. For example, compared to self-descriptions, descriptions of disliked others contained fewer roles and more negative traits, whereas descriptions of liked others (although generally similar to the self) contained fewer negative traits and more roles. Overall, the results contradict the common belief that people think more complexly about the self than others.

Whereas terms such as *complex* and *multifaceted* are often used to describe the self-concept (Markus & Wurf, 1987; Nowak, Vallacher, Tesser, & Borkowski, 2000), such terms are rarely used to describe conceptions of other people. Yet, there is virtually no empirical evidence that conceptions of the self are more complex than conceptions of other people.

Understanding if and when there are differences in the complexity of thinking about the self and others is important for at least two reasons. First, the assumption that people conceptualize themselves in complex ways may influence social cognitive theory and research. For instance, the presumed phenomenon of people conceptualizing themselves as multifaceted is sometimes used as an explanation of other phenomena, such as self-relevant judgment biases (Fiedler, 1996). Another example is that the ability to represent and organize complexity often arises as an important criterion in evaluating models of mental representations of the self (Linville & Carlston, 1994; Nowak et al. 2000) but rarely arises in

evaluating the adequacy of models of representations of other individuals.

A second reason for comparing the complexity of representations of the self and others is that complexity itself may have important consequences. For example, self-complexity may dampen the emotional and physical consequences of negative events (Dixon & Baumeister, 1991; Linville, 1985, 1987; Niedenthal, Setterlund, & Wherry, 1992). Similarly, the complexity of representations of others may moderate evaluative judgments of other people (Linville, 1982; Linville & Jones, 1980). If complexity influences these types of responses and evaluations, then differences in the complexity of how people conceptualize the self versus others might predict differences in how people respond to and evaluate the self versus others.

The purpose of this article is to test whether conceptions of the self and conceptions of others actually do differ in complexity. Despite the widespread assumption that conceptions of the self and others will differ, there are also good reasons to expect that they will not.

In this article, conceptions of the self and others refer to explicit semantic knowledge (of abstract behavioral, emotional, and motivational dispositions). Declarative knowledge of self and others also includes episodic knowledge (of specific behaviors and events). It is commonly assumed that people have more episodic knowledge of the self than of others—after all, “wherever you

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go, there you are." This assumption may or may not be true, but even if people do have more episodic knowledge of the self than others, more extensive episodic knowledge does not necessarily imply more complex semantic knowledge. The cognitive processes and neural pathways involved in storing and accessing semantic knowledge appear to be distinct from those involved in storing and accessing episodic knowledge. For example, case studies of individuals with amnesia and autism show them to be capable of accessing accurate semantic self-knowledge even when they cannot access relevant episodic self-knowledge (Klein, Chan, & Loftus, 1999; Klein, Loftus, & Kihlstrom, 1996; Tulving, 1989, 1993). Laboratory research similarly suggests that activation of semantic knowledge does not activate relevant episodic knowledge; for example, judging the self-descriptiveness of a trait typically does not facilitate retrieval of behavioral exemplars of that trait (Klein, Babey, & Sherman, 1997; Klein & Loftus, 1993).

Moreover, even if the semantic knowledge in long-term memory is more complex for the self than others, it would not necessarily imply that people think about and describe themselves in more complex ways. When one is thinking about and describing the self, one is referencing not the whole of self-knowledge in long-term memory but the subset of self-knowledge currently activated in working memory, that is, the working self-concept (Markus & Wurf, 1987). Because working memory can hold only a small number of pieces of information, at any given moment the working self-concept can only reference a very limited subset of self-knowledge. Of course, the same capacity limitation is faced when thinking about others. The limits of working memory may therefore limit any differences in the complexity of thinking about the self and others.

More generally, both theory and research suggests that the same types of cognitive processing (and processing limitations) are involved regardless of whether a person is thinking about the self or someone else (Greenwald & Banaji, 1989; Kihlstrom & Klein, 1994). Moreover, in neurological disorders where conceptions of other people are disturbed, there are often disturbances in conceptions of the self (and vice versa), suggesting that self- and other-representations may even use the same brain systems (Brothers, 1997). If people use the same cognitive procedures and neural systems when thinking about the self and when thinking about others, then it is plausible that they may think about the self and others in similar ways.

On the basis of the preceding considerations, we hypothesized that people may not spontaneously or automatically conceive of themselves in more complex terms than others. To test this hypothesis, we conducted a series of five studies comparing the complexity of

descriptions of the self and others, with each study using a different method for operationalizing complexity.

STUDY 1

One source of evidence that self-conceptions are more complex than conceptions of others is a series of studies by Sande, Goethals, and Radloff (1988) in which participants used a set of traits composed of pairs of contrasting traits (e.g., serious and carefree) to describe the self and others. Three different procedures were used. Some participants were asked to describe the targets by endorsing one of four response options for each trait pair: "trait a," "trait b," "both," or "neither." The results showed they used more contrasting traits to describe the self than others. Other participants were asked to make ratings on bipolar scales anchored by the contrasting traits, as in the following example:

1. To what extent would you describe yourself as serious versus carefree? Serious _____ Carefree _____

The results showed that self-ratings were closer to the midpoint than were ratings of acquaintances, suggesting that people were reluctant to deny themselves either trait. Finally, other participants were asked to make ratings on unipolar scales, as in the following example:

1. To what extent would you describe yourself as
 - a. Serious not at all _____ very much
 - b. Carefree not at all _____ very much

The results showed that the sums of ratings within each pair were greater for self-ratings than for ratings of acquaintances, suggesting that people viewed the self as possessing relatively large amounts of both traits. On the basis of these findings, Sande et al. (1988) concluded that conceptions of the self were more "multifaceted" than conceptions of others.

However, Sande et al. (1988) used almost exclusively socially desirable traits, thus confounding multifaceted self-descriptions with positive self-descriptions. Locke and Horowitz (1997) replicated Sande et al.'s multiple-choice procedure using both desirable and undesirable traits and found that people applied more contrasting traits to the self than acquaintances only when the traits were desirable; that is, people conceptualized themselves as desirable, a common finding (Taylor & Brown, 1988), but not necessarily multifaceted.

However, because Locke and Horowitz (1997) only replicated Sande et al.'s (1988) multiple-choice procedure, we cannot rule out the possibility that the results of Sande et al.'s rating scale procedures would prove more

robust and would in fact generalize to undesirable traits. Study 1 was designed to settle this question by replicating the rating scale procedures using both desirable and undesirable trait pairs.

Method

Participants. The study included 188 students (124 women, 64 men) who participated for extra credit in undergraduate psychology courses.

Trait pairs. The traits were selected from a pool of more than 400 adjectives for which there were published social desirability norms from two independent samples (Hampson, Goldberg, & John, 1987; Norman, 1967). In both samples, students rated trait desirability on a 1 (*extremely undesirable*) to 9 (*extremely desirable*) scale. I eliminated traits whose ratings across the two samples differed by more than two scale points, then I averaged the ratings across the two samples to obtain a more stable index of desirability and paired together traits that were contrasting in meaning but whose mean desirability ratings were within .5 units of each other. Finally, I selected 10 desirable pairs (mean desirability greater than 6) and 10 undesirable pairs (mean desirability less than 4). The desirable pairs were as follows: ambitious–easy-going, practical–principled, lively–relaxed, independent–sociable, adaptable–stable, humble–bold, modest–daring, dignified–playful, firm–accommodating, and frank–sensitive. The undesirable pairs were as follows: highly strung–lethargic, impatient–indecisive, immodest–inhibited, submissive–argumentative, meek–demanding, self-pitying–conceited, irritable–apathetic, unsociable–nosey, distrustful–gullible, and vain–insecure.

Procedure. The participants described themselves and an acquaintance on the pairs of opposing traits by placing marks on either bipolar scales ($n = 95$) or pairs of unipolar scales ($n = 93$). All scales were 86 mm long and were presented in the format shown above. Following Sande et al. (1988), an acquaintance was defined as “someone you know fairly well but who is not a close friend—someone who is more of an acquaintance than a friend.” Approximately half of the participants in each condition described the self first; the other half described an acquaintance first. Descriptions of liked aspects preceded descriptions of disliked aspects. There were no significant effects of order or gender in any of the studies in this article; therefore, these variables will not be discussed further.

Results and Discussion

Unipolar scales. The two ratings for each trait pair were summed, yielding 20 sums for each target. The sums were subjected to a 2×2 (Target $\times$ Trait Desirability) repeated-measures ANOVA. The means for each cell

were as follows: self-desirable, $M = 112.23$ ($SD = 14.96$); self-undesirable, $M = 73.67$ ($SD = 17.81$); other-desirable, $M = 102.49$ ($SD = 18.65$); and other-undesirable, $M = 72.51$ ($SD = 23.92$). Trait desirability had a strong effect, $F(1, 92) = 170.77$, $p < .001$; people ascribed (both to themselves and others) more of the desirable than the undesirable traits. There were also significant effects of target, $F(1, 92) = 26.39$, $p < .001$, and the Target $\times$ Desirability interaction, $F(1, 92) = 4.19$, $p < .05$. Post hoc comparisons showed that ratings of the self were higher than ratings of acquaintances for desirable traits ($p < .02$) but not for undesirable traits ($p > .4$). (All post hoc comparisons in this article employed Scheffe’s procedure.)

Bipolar scales. The deviations of participants’ ratings from the scale midpoint (43 mm) were subjected to a 2×2 (Target $\times$ Desirability) repeated-measures ANOVA. The means for each cell were as follows: self-desirable, $M = 17.71$ ($SD = 7.32$); self-undesirable, $M = 15.42$ ($SD = 7.07$); other-desirable, $M = 21.27$ ($SD = 6.45$); and other-undesirable, $M = 16.83$ ($SD = 7.85$). There was a significant effect of trait desirability, $F(1, 94) = 41.89$, $p < .001$; ratings were closer to the scale midpoint for undesirable than desirable pairs. There also were significant effects of target, $F(1, 94) = 14.86$, $p < .001$, and the Target $\times$ Desirability interaction, $F(1, 93) = 4.75$, $p < .05$. Post hoc analyses showed that ratings of the self were closer to the scale midpoint than ratings of acquaintances for desirable traits ($p < .001$), but not for undesirable traits ($p > .2$).

If people think they have more contrasting traits than others, they should rate themselves higher on the pairs of unipolar scales and closer to the midpoint on the bipolar scales. This pattern was found for desirable but not undesirable traits. Using a multiple-choice format, Locke and Horowitz (1997) also found that people only applied more traits to themselves than to others when the traits were desirable. Thus, three different methods found that people described the self in more positive—but not necessarily more multifaceted—terms.

STUDY 2

Why do we find self-other differences for positive but not for negative traits? One possibility is that people conceptualize themselves in relatively positive, but not particularly complex, ways. Another possibility is that people actually have complex conceptions of both their strengths and their weaknesses but tend to see their weaknesses as more situation specific than their strengths. After all, people do make situational attributions more often for their negative behaviors than for their positive behaviors (Zuckerman, 1979). Thus, participants may be reluctant to apply negative traits to themselves when the implication is (as in Study 1) that

those traits apply globally, across all situations. For example, a student may deny that she is awkward or insecure in general but be willing to admit that she is awkward with members of the opposite sex or insecure about her academic abilities.

Moreover, theorists who suggest that the self is a uniquely large knowledge structure often go on to suggest it cannot be a unitary knowledge structure. For example, in developing an associative network model of the self, Kihlstrom and Cantor (1984) suggested that self-knowledge is organized hierarchically, with a number of context-specific self-prototypes (such as self-with-mother vs. self-with-spouse) subsumed under a broader, abstract self-prototype. Similarly, in testing a neural network model of the self, Nowak et al. (2000) suggested that "Because of the sheer size of the self-system and the enormous diversity of self-relevant thoughts and memories. . . the elements are more likely to organize into a number of coherent subsets that are relatively independent of each other" (p. 54). Thus, descriptions of the self in specific contexts may reveal the complexity of thinking about the self (especially negative aspects of the self) better than global self-descriptions.

To test this possibility, Study 2 asked participants to use trait terms to describe themselves and others in four different situations: while working, while recreating, while with same-sex peers, and while with opposite-sex peers. Also, Study 2 had participants consider each trait independently rather than in pairs. These methodological changes enabled us to calculate two additional measures of complexity or differentiation: (a) the mean correlation between roles, an index of lack of role differentiation (Block, 1961; Donahue, Robins, Roberts, & John, 1993), and (b) H , a measure of complexity derived from information theory (Attneave, 1959). (For a fuller discussion of H , and a meta-analysis of 70 studies testing if H predicts well-being, see Rafaeli-Mor & Steinberg, 2002)

Method

Participants. The study included 103 students (65 women, 34 men, 4 unknown) who participated for extra credit in undergraduate psychology courses.

Procedure. After reading and signing a consent form, the participants were asked to think of one person "that you like" and one person "that you feel neutral about or dislike" that

you have had the opportunity to observe in each of the following four contexts: (1) when he or she is engaging in school- or work-related activities, (2) when he or she is engaging in recreational activities, (3) when he or she is with peers of the same sex, (4) when he or she is with peers of the opposite sex.

The participants then were asked to describe the liked other, the disliked other, and the self by circling traits in list of 40 traits. The traits were the same as those used in Study 1 but were presented in a random order rather than in pairs. Each target was described four different times, namely, while working, while recreating, while with same-sex peers, and while with opposite-sex peers. The three target persons (self, liked other, and disliked other) were presented in one of six different orders. The participants were randomly assigned to one of these orders of presentation. After completing the trait checklists, the participants were debriefed and dismissed.

Complexity (H). H is the number of independent binary distinctions (or bits of information) needed to produce a description of a certain complexity. As H increases, it becomes harder to predict if trait y will apply to role z from knowledge of how trait y was applied to other roles or how other traits were applied across roles. Mathematically, $H = \log_2 n - (\sum_i (n_i \log_2 n_i)) / n$, where n is the total number of traits used and n_i is the number of traits that appear in a given unique combination of roles. For example, if only two roles of a target person are being described, n_1 = number of traits ascribed to role 1, n_2 = number of traits ascribed to role 2, n_3 = number of traits ascribed to both roles, and n_4 = number of traits ascribed to neither role (for a more elaborate example, see Woolfolk, Novalany, Gara, Allen, & Polino, 1985). H was computed separately on the 20 desirable traits (yielding a positive complexity score, H_{pos}) and the 20 undesirable adjectives (yielding a negative complexity score, H_{neg}) because H_{pos} and H_{neg} show distinct relationships with important outcomes such as depression and adjustment to trauma (Morgan & Janoff-Bulman, 1994; Woolfolk et al., 1985).

Results and Discussion

Number of traits ascribed (T). The mean T per role was subjected to a 3×2 ANOVA, with target (self, liked other, disliked other) and trait desirability (desirable, undesirable) as within-subjects variables. Table 1 shows the means for each cell of the design. There was an effect of trait desirability, $F(1, 102) = 295.26$, $p < .0001$; the T for positive traits (T_{pos}) exceeded the T for negative traits (T_{neg}). There was also an effect of target, $F(2, 204) = 3.45$, $p < .05$, and the Target $\times$ Desirability interaction, $F(2, 204) = 34.75$, $p < .0001$. Univariate ANOVAs showed target had a significant effect on both T_{pos} , $F(2, 204) = 30.48$, and T_{neg} , $F(2, 204) = 28.17$, $ps < .0001$. Whereas T_{pos} was lower for disliked others than for the self or liked others, the opposite was true for T_{neg} ($ps < .0001$). There were no differences between the self and liked others.

Complexity (H). H was subjected to a 3×2 ANOVA, with target and trait desirability as within-subjects variables.

TABLE 1: Number of Traits Per Role (*T*), Mean Correlation Between Roles (*r*), and Complexity (*H*) as a Function of Trait Desirability in Descriptions of Self, Liked Others, and Disliked Others

Measure	Desirable Traits						Undesirable Traits					
	Self		Liked		Disliked		Self		Liked		Disliked	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
<i>T</i>	7.06	3.52	7.54	3.00	4.75	3.42	2.37	2.28	2.07	1.92	4.15	2.93
<i>H</i>	2.43	0.64	2.60	0.54	1.91	0.80	1.26	0.73	1.16	0.84	1.77	0.77
<i>r</i>	0.26	0.20	0.26	0.20	0.23	0.21	0.14	0.20	0.13	0.17	0.27	0.21

NOTE: Greater *H* values indicate greater complexity.

Table 1 shows the means for each cell. There was a main effect of trait desirability, $F(1, 102) = 268.92, p < .0001$; H_{pos} was greater than H_{neg} . There was also a significant Target $\times$ Desirability interaction, $F(2, 204) = 33.54, p < .0001$. Univariate ANOVAs showed target had a significant effect on both H_{pos} , $F(2, 204) = 33.14$, and H_{neg} , $F(2, 204) = 22.83, ps < .0001$. Descriptions of disliked others had a lower H_{pos} and a higher H_{neg} than did descriptions of self and liked others, $ps < .0001$. There were no differences between the self and liked others.

Average between-role correlation. In each role, each trait was coded either “1” if it was endorsed or “0” if it was not. A Pearson r ($r\phi$) was then computed between every pair of roles. The average r for each subject was subjected to a 3×2 ANOVA, with target and trait desirability as within-subjects variables. The r s were not transformed prior to the analysis because the data did not violate any ANOVA assumptions and applying Fischer’s z transformation (as is sometimes recommended) did not alter the results. Table 1 shows the means for each cell. There were significant effects of desirability, $F(1, 102) = 23.80, p < .0001$, and the Target $\times$ Desirability interaction, $F(2, 204) = 17.75, p < .0001$. When describing the self and liked others, the mean r for positive traits (r_{pos}) exceed the mean r for negative traits (r_{neg}), $ps < .0001$. Conversely, when describing disliked others, r_{neg} exceeded r_{pos} , although the difference was not significant. Univariate ANOVAs showed that target only influenced r_{neg} , $F(2, 204) = 20.80, p < .0001$; the r_{neg} for disliked others exceeded the r_{neg} for the self or liked others, $ps < .0001$. Thus, the negative qualities of disliked others were described as more consistent across roles—as less situation specific—than those of the self and liked others.

That participants offered relatively impoverished descriptions of the merits and rich descriptions of the defects of disliked others is no surprise. More intriguing is the lack of any differences between the descriptions of the self and liked others. Locke and Horowitz (1997) similarly found no difference in the number of contrasting traits ascribed to the self and liked others, for both desirable and undesirable trait pairs. One important dis-

inction between that study and the current study is that the current study asked for descriptions of specific roles rather than for a global description. However, the roles described (e.g., self during recreational activities) were admittedly somewhat generic and were not generated by the participants themselves. If people really are experts on themselves, then they may organize information about themselves in unique ways. If given more freedom to express their unique ways of conceptualizing themselves, perhaps then people might show greater complexity of thinking about themselves than others.

STUDY 3

To give participants more flexibility in how to describe themselves and others, Study 3 replicated Study 2 with one important difference. Whereas the participants in Study 2 described the same four aspects of each target person, the participants in Study 3 made up their own lists of aspects for each person. Thus, the number and type of aspects described varied across participants and across target persons. The resulting procedure was similar to Morgan and Janoff-Bulman’s (1994) paper-and-pencil version of Linville’s (1985) card-sorting task.

Method

Participants. The study included 104 students who participated for extra credit in undergraduate psychology courses.

Procedure. After reading and signing a consent form, the participants were asked to list aspects of three target persons: the self, a liked well-known other, and a disliked well-known other. The instructions for the self were as follows: “List some different aspects of yourself or your life—for example, different roles, or activities, or personality facets, or relationships, and so on. You can list as many or as few as you want (up to a maximum of 12).” The instructions for the other targets were identical except for replacing “yourself” with either “someone you know well and like” or “someone you know well and dislike.” The three target persons (self, liked other, and disliked other) could be presented in one of six different

TABLE 2: Number of Traits Per Role (*T*), Mean Correlation Between Roles (*r*), and Complexity (*H*) as a Function of Trait Desirability in Descriptions of Self, Liked Others, and Disliked Others

Measure	Desirable Traits						Undesirable Traits					
	Self		Liked		Disliked		Self		Liked		Disliked	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
<i>T</i>	4.75	2.49	5.11	2.43	1.36	1.28	1.17	1.24	0.74	0.88	3.95	1.89
<i>H</i>	3.27	0.83	3.43	0.70	1.36	0.93	1.37	1.05	1.00	0.93	2.63	0.80
<i>r</i>	0.12	0.12	0.14	0.12	0.10	0.14	0.06	0.11	0.05	0.09	0.24	0.18

NOTE: Greater *H* values indicate greater complexity.

orders. The participants were randomly assigned to one of these six orders of presentation.

Next, the participants were asked to complete an adjective checklist (similar to that used in Study 2) for each aspect of each target. (Thus, a participant who listed 10 aspects for each target would complete a total of 30 checklists.) The participants wrote the name of the aspect at the top of each checklist and then circled those adjectives that best described that aspect. The participants completed the adjective checklists in the same order as they listed the aspects. After completing the adjective checklists, the participants were debriefed and dismissed.

Results and Discussion

Number of roles. A one-way ANOVA on the number of aspects listed revealed a significant effect of target, $F(2, 206) = 25.27, p < .0001$. Post hoc comparisons showed that participants listed more aspects of liked others ($M = 9.62, SD = 2.78$) than of the self ($M = 8.92, SD = 2.34$) and listed more aspects of the self than of disliked others ($M = 8.37, SD = 2.81$), $ps < .01$.

Number of traits ascribed (*T*). The mean *T* per role was subjected to a 3×2 ANOVA, with target and trait desirability as within-subjects variables. Table 2 shows the means for each cell. There was a main effect of trait desirability, $F(1, 103) = 181.94, p < .0001$; T_{pos} exceeded T_{neg} . There was also an effect of target, $F(2, 206) = 6.73, p < .01$, and the Target $\times$ Desirability interaction, $F(2, 206) = 284.28, p < .0001$. Univariate ANOVAs showed the effect of target was significant both for desirable traits, $F(2, 206) = 207.08$, and undesirable traits, $F(2, 206) = 235.48, ps < .0001$. T_{pos} was lower and T_{neg} was higher for disliked others than for the self or liked others ($ps < .0001$). The self and liked others did not differ with regard to T_{pos} , but T_{neg} was slightly lower for liked others than for the self ($p < .05$).

Complexity (*H*). *H* was subjected to a 3×2 ANOVA, with target and trait desirability as within-subjects variables. Table 2 shows the means for each cell. There was a significant effect of trait desirability, $F(1, 103) = 371.95, p < .0001$; H_{pos} was greater than H_{neg} . There was also an effect

of target, $F(2, 206) = 20.73$, and the Target $\times$ Desirability interaction, $F(2, 206) = 364.46, ps < .0001$. Univariate ANOVAs showed target had significant effects on both H_{pos} , $F(2, 206) = 368.12$, and H_{neg} , $F(2, 206) = 163.60, ps < .0001$. Descriptions of disliked others had a lower H_{pos} and a higher H_{neg} than did descriptions of self and liked others, $ps < .0001$. H_{neg} was also higher for the self than liked others ($p < .001$).

Average between-role correlation. The average Pearson *r* between roles was subjected to a 3×2 ANOVA, with target and trait desirability as within-subjects variables. The *r*s were not transformed prior to the analysis because they met the ANOVA assumptions and applying a *z* transformation did not alter the results. Table 2 shows the means for each cell. There were significant effects of target, $F(2, 206) = 30.55, p < .0001$, and the Target $\times$ Desirability interaction, $F(2, 206) = 83.70, p < .0001$. Whereas r_{pos} exceeded r_{neg} when describing the self and liked others, r_{neg} exceeded r_{pos} when describing disliked others, $ps < .0001$. Univariate ANOVAs showed target had significant effects on both r_{pos} , $F(2, 206) = 4.95, p < .01$, and r_{neg} , $F(2, 206) = 92.68, p < .0001$. Whereas r_{pos} was greater for liked others than disliked others, r_{neg} was greater for disliked others than liked others or the self, $ps < .01$. There were no differences between the self and liked others. Thus, as in Study 2, negative behaviors were perceived as more consistent across roles for disliked others than for the self or liked others. Indeed, for disliked others, negative behaviors were more consistent across roles than were positive behaviors, whereas for the self and liked others the reverse was true.

Overall, the results were similar to those of Study 2, with the clearest (and least surprising) finding again being that disliked others were described as poor in virtues but rich in sins. Nevertheless, whereas Study 2 found no differences in descriptions of the self and liked others, Study 3 did find some. However, the differences offer competing conclusions concerning the relative complexity of descriptions of the self and liked others. On one hand, participants listed more aspects of liked others than of the self, suggesting a more differentiated organization of knowledge about liked others. On the

other hand, T_{neg} and H_{neg} were higher for the self than liked others, suggesting a more differentiated conception of the self, at least with respect to flaws. For both targets, however, T_{neg} was only about one trait per role; therefore, in absolute terms, participants did not display a complex view of the faults of either the self or liked others.

STUDY 4

Although Study 3 allowed people to choose what aspects to describe, it required them to describe those aspects in terms of a standard list of traits. Perhaps if people had no constraints on the types of words and narrative constructions they used, they could finally express the greater complexity of their self-knowledge. After all, although models of self-representation typically focus on traits, spontaneous self-descriptions often focus on activities, relationships, and attitudes. Therefore, Study 4 simply asked people to write descriptions of liked and disliked aspects of themselves and others. The only constraint was how much time they had to write. Trained judges then scored the complexity of their open-ended descriptions.

Method

Participants. The study included 65 students (49 women, 16 men) who participated for extra credit in undergraduate psychology courses.

Procedure. The participants received four sheets of lined paper. The instructions at the top of each page asked them to describe either liked or disliked aspects of either themselves or someone they knew well. Thirty-four participants described themselves first; thirty-one participants described the other person first. Descriptions of liked aspects preceded descriptions of disliked aspects. The participants were given 5 1/2 min for each of the four descriptions.

Complexity coding measure. Complexity was assessed using the "Categories of Cognitive Complexity" scoring system developed by Woike (1989; see also Woike, 1994; Woike & Aronoff, 1992). Based on a review of the existing measures of complexity, Woike (1989) concluded that the construct of cognitive complexity could be divided into four categories: simple differentiation, elaborated differentiation, simple integration, and elaborated integration. The following is an outline of the scoring system.

1. Simple differentiation involves articulating distinct characteristics. There are two subcategories: new aspects and new aspects with context. An example of a new aspect was "dishonest." (All examples were actual responses from the present study.) An example of a new

aspect with context was "I can sometimes not be totally honest with my parents."

2. Elaborated differentiation refers to comparisons, contrasts, and restrictions. There are three subcategories. First, relative comparison involves comparisons along a single dimension (e.g., "I know things in general more than people at the same age because of my hard childhood"). Second, contrast involves comparisons using opposing aspects ("Although I'm usually laid back, when I get mad I get really mad"). Third, restriction of meaning involves acknowledging the role of a particular subjective perspective in creating an impression ("People that don't know me very well think I'm shy").
3. Simple integration involves extending or enhancing the meaning of a previously articulated aspect ("She's messy—her room is never clean"). There are no subcategories of simple integration.
4. Elaborated integration involves perceiving relationships among features. There are three relevant subcategories. First, causal links refers to perceiving dynamic relationships between people or between differentiated aspects within a person ("I have many people who treat me nice because that's how I treat them"). Second, similarity involves perceiving commonality between two targets (e.g., "I dislike the same procrastination trait in him as I do in myself"). Third, resolution of the impression involves a general theme that persists throughout the entire description (e.g., I like my psychological side [and the rest of the page described his "psychological side"]).

Coding the Descriptions

Three coders (two undergraduates and a psychologist) were trained to score the descriptions using the Categories of Cognitive Complexity scoring manual (Woike, 1989). The three coders independently coded each description. We then counted the number of instances of simple differentiation, elaborated differentiation, simple integration, and elaborated integration identified by each coder. The interrater reliabilities were as follows: simple differentiation, Cronbach's $\alpha = .96$; elaborated differentiation, $\alpha = .61$; simple integration, $\alpha = .74$; and elaborated integration, $\alpha = .65$. The coders resolved all disagreements through discussion. The frequencies per description for each of the complexity categories were as follows: simple differentiation, range = 1-29, $M = 7.17$, $SD = 3.51$; elaborated differentiation, range = 0-3, $M = .30$, $SD = .30$; simple integration, range = 0-12, $M = 2.40$, $SD = 1.26$; elaborated integration, range = 0-5, $M = .43$, $SD = .42$.

Results and Discussion

Following Woike (1994), for each participant we divided the number of statements in each category (multiplied by 100) by the total number of statements across all four descriptions made by that participant. The resulting percentages were subjected to a $2 \times 2 \times 2 \times 2$ (Target [self-other] $\times$ Valence [liked-disliked] $\times$ Type of Complexity [differentiation-integration] $\times$ Level of

TABLE 3: Complexity of Descriptions of Liked and Disliked Aspects of Self and Well-Known Others

Complexity Category	Self				Other			
	Liked		Disliked		Liked		Disliked	
	M	SD	M	SD	M	SD	M	SD
Differentiation								
Simple	20.7	10.9	13.9	6.5	21.5	8.2	12.1	5.2
Elaborated	0.6	1.2	0.5	1.0	1.0	1.6	0.9	1.5
Integration								
Simple	7.0	5.9	6.6	5.0	6.8	4.5	4.0	3.7
Elaborated	0.6	1.4	0.3	0.9	2.4	3.4	1.3	2.5

NOTE: The numbers represent the percentages of all statements that were statements of a particular type; thus, the sum of the numbers is 100.

Complexity [simple-elaborated]) repeated-measures ANOVA. Table 3 shows the mean percentages for each cell of the design.

Effect of coding category. There were large effects of type of complexity, level of complexity, and the Type $\times$ Level interaction, $F(1, 64) > 133$, $ps < .001$. The most common type of statements was simple differentiation (68.2% of all statements), the second most common was simple integration (24.3%), and the least common were elaborated integration (4.6%) and elaborated differentiation (2.9%).

Effect of target. The main effect of target was not significant. There were significant effects of the Target $\times$ Level interaction, $F(1, 64) = 11.44$, $p = .001$, and the Target $\times$ Valence interaction, $F(1, 64) = 5.55$, $p < .05$. Self-descriptions contained more simple and fewer elaborated statements and also more negative and fewer positive statements than did descriptions of others, but post hoc comparisons showed that none of these differences were statistically significant. Low interrater reliability may have contributed to the lack of differences with respect to the categories of elaborated differentiation and integration. The lack of self-other differences cannot be attributed to the time limit on the descriptions. Almost all of the participants finished writing their descriptions within the time limits. Moreover, as the next section shows, although people had the same amount of time to write positive and negative descriptions, they nonetheless wrote more complex positive descriptions.

Effect of valence. There was a significant effect of valence, $F(1, 64) = 116.06$, $p < .001$; positive descriptions were more complex than negative descriptions. There were also significant effects of the interactions of Valence $\times$ Type, $F(1, 64) = 23.18$, $p < .001$; Valence $\times$ Level, $F(1, 64) = 86.92$, $p < .001$; and Valence $\times$ Level $\times$ Type, $F(1, 64) = 33.94$, $p < .001$. Post hoc comparisons showed that the effect of valence was significant for simple differentiation ($p < .0001$) but not for the other categories ($ps > .4$). Thus, positive descriptions contained

more new aspects but not more elaboration or integration.

Subcategories of simple differentiation. Although there are also subcategories of elaborated differentiation and elaborated integration, only the subcategories of simple differentiation (new aspects with vs. without context) had reliabilities adequate to perform analyses at the subcategory level. A $2 \times 2 \times 2$ (Target $\times$ Valence $\times$ Subcategory) repeated-measures ANOVA on the subcategories of new aspects revealed a significant Subcategory $\times$ Valence interaction, $F(1, 64) = 69.26$, $p < .001$. Post hoc comparisons showed that new aspects without context were more common in descriptions of liked than disliked aspects ($M = .39$ vs. $.22$, $p < .0001$), but new aspects with context were not ($M = .03$ vs. $.04$, $p > .4$).

Thus, valence only affected new aspects without context, that is, global traits of the sort used in Study 1. Other types of information occurred with similar frequencies in descriptions of liked and disliked aspects.

STUDY 5

Study 5 was a replication of Study 4, with two modifications. First, participants described the targets as a whole (rather than describing liked and disliked aspects separately). Second, as in Studies 2 and 3, participants described a liked well-known other and a disliked well-known other (rather than describing an unspecified well-known other).

Method

Participants. The study included 67 students (51 women, 16 men) who participated for extra credit in undergraduate psychology courses.

Procedure. The participants received three sheets of lined paper. The instructions at the top of each page asked them to describe one of the following targets: "yourself," "someone you know well and like," or "someone you know well and dislike." The targets were presented in one of six different orders. The participants

were given 10 min for each description. Five participants did not describe a disliked other (claiming that they could not think of anyone they disliked) and so were not included in the following analyses.

Coding the Descriptions

Three coders (two undergraduates and a psychologist) used a revised version of the Categories of Cognitive Complexity scoring manual used in the previous study (Woike, 1997) to independently code each description. For each description, we counted the number of instances of simple differentiation, elaborated differentiation, simple integration, and elaborated integration identified by each coder. All categories showed good interrater reliability: simple differentiation, Cronbach's $\alpha = .97$; elaborated differentiation, $\alpha = .82$; simple integration, $\alpha = .91$; and elaborated integration, $\alpha = .80$. Therefore, the analyses below used the mean frequencies averaged across the raters. The mean frequencies per description for each of the complexity categories were as follows: simple differentiation, range = 2.3-41.3, $M = 14.12$, $SD = 6.88$; elaborated differentiation, range = 0-7, $M = 1.18$, $SD = 1.17$; simple integration, range = 0-23, $M = 7.17$, $SD = 4.67$; elaborated integration, range = 0-8, $M = .80$, $SD = 1.16$.

Results and Discussion

The percentages of statements in each category were subjected to a $3 \times 2 \times 2$ (Target [self-liked-disliked] $\times$ Type of Complexity [differentiation-integration] $\times$ Level of Complexity [simple-elaborated]) repeated-measures ANOVA. Table 4 shows the mean percentages for each cell of the design.

Effect of coding category. As in Study 4, there were large effects of type of complexity, level of complexity, and the Type $\times$ Level interaction, $F(1, 61) > 148$, $ps < .001$. The most common type of statement was simple differentiation (61.3% of all statements), the second most common was simple integration (30.2%), and the least common were elaborated differentiation (4.9%) and elaborated integration (3.5%).

Effect of target. There was a significant effect of target, $F(2, 122) = 29.97$, $p < .001$. Fewer statements were made about disliked others than about the self or liked others. There were also effects of the interactions of Target $\times$ Type, $F(2, 122) = 16.00$; Target $\times$ Level, $F(2, 122) = 41.12$; and Target $\times$ Type $\times$ Level, $F(1, 122) = 7.66$, all $ps < .001$. Therefore, we tested the effect of target on each coding category separately. The effect of target on simple differentiation was significant, $F(2, 122) = 40.43$, $p < .001$. Descriptions of disliked others contained fewer new aspects than did descriptions of the self or liked others. Target also had significant effects on elaborated

TABLE 4: Complexity of Descriptions of the Self and Liked and Disliked Well-Known Others

Complexity Category	Self		Liked		Disliked	
	M	SD	M	SD	M	SD
Differentiation						
Simple	23.8	6.1	22.2	5.9	15.3	5.8
Elaborated	2.0	1.5	1.7	1.6	1.3	1.4
Integration						
Simple	11.4	5.6	10.3	4.9	8.6	4.2
Elaborated	0.4	0.8	1.6	2.2	1.5	1.6

NOTE: The numbers represent the percentages of all statements that were statements of a particular type; thus, the sum of the numbers is 100.

differentiation, $F(2, 122) = 3.21$, $p < .05$, and simple integration, $F(2, 122) = 5.37$, $p < .01$. Descriptions of disliked others contained fewer instances of elaborated differentiation and simple integration than did descriptions of the self. Finally, target had a significant effect on elaborated integration, $F(2, 122) = 11.83$, $p < .001$. Self-descriptions contained fewer instances of elaborated integration than did descriptions of liked or disliked others, $ps < .001$.

Subcategories of simple differentiation. A 3×2 (Target $\times$ Subcategory) repeated-measures ANOVA on new aspects with versus without context revealed a significant Target $\times$ Subcategory interaction, $F(2, 122) = 18.72$, $p < .001$. Simple effects analyses showed the effect of target was significant for new aspects without context, $F(2, 122) = 31.75$, $p < .001$, but not for new aspects with context, $F(2, 122) = 1.54$, *ns*. Post hoc comparisons showed that new aspects without context occurred with similar frequency in descriptions of the self ($M = .20$, $SD = .07$) and liked others ($M = .19$, $SD = .07$) but less often in descriptions of disliked others ($M = .13$, $SD = .06$).

In summary, self-descriptions showed (a) more differentiation and simple integration than did descriptions of disliked others, (b) no more or less differentiation and simple integration than descriptions of liked others, and (c) less elaborated integration than descriptions of either liked or disliked others.

GENERAL DISCUSSION

A series of five studies compared descriptions of the self and others. Each successive study provided participants greater freedom to express the complexity of their thinking. Study 1 asked participants to make global ratings on pairs of opposing traits. Study 2 asked participants to use traits to describe themselves and others in different roles. Study 3 permitted participants to generate the list of roles to describe for each target. Study 4 asked participants to write narrative descriptions of liked and disliked aspects of each target. Study 5 asked partici-

pants simply to write descriptions of each target with no constraints. Let us now summarize the findings concerning whether self-descriptions are more complex than descriptions of acquaintances, liked others, and disliked others.

Are Self-Descriptions More Complex Than Descriptions of Acquaintances?

Overall, the answer is no. Three studies (Study 1, Study 4, and Study 1 of Locke & Horowitz, 1997) compared self-descriptions and descriptions of acquaintances. No study found differences in the complexity of undesirable aspects of self and acquaintances. The results for desirable characteristics were more varied. Narrative descriptions of liked aspects of self and acquaintances revealed no differences in either the number of traits applied or any other index of complexity. However, when presented with a set of desirable traits pairs, the self was ascribed more traits, rated higher on unipolar trait scales, and rated closer to midpoint on bipolar scales. Collectively, the results suggest that people do not spontaneously apply more positive or fewer negative terms to themselves than to their acquaintances. However, when presented with a positive trait, it is harder for people to deny themselves that virtue than to deny an acquaintance that virtue.

Are Self-Descriptions More Complex Than Descriptions of Liked Others?

Overall, the answer is again no. Four studies (Study 2, Study 3, Study 5, and Study 2 of Locke & Horowitz, 1997) compared self-descriptions and descriptions of liked, well-known others. Only one study found evidence that self-descriptions were more complex: In Study 3, the number and complexity of negative traits endorsements (although in absolute terms low for both targets) was greater for the self than for liked others. In contrast, two studies found evidence that self-descriptions were less complex. In Study 5, the frequency of "elaborated integration" (although again in absolute terms low for both targets) was greater for liked others than for the self. Because elaborated integration generally involves noting similarities or causal links between people, this result fits with research showing that people are more likely to use the self as a reference point in describing others than vice versa (Holyoak & Gordon, 1983). Finally, in Study 3, participants generated a longer list of aspects (roles, activities, and so on) for liked others than for themselves. Perhaps the reason is that identifying with multiple roles or activities or relationships makes deciding what to do more difficult, confusing, and stressful. Consequently, there may be a greater press for people to streamline their self-concepts than their concepts of others.

Are Self-Descriptions More Complex Than Descriptions of Disliked Others?

Once again, differences between the self and disliked others were not consistently in one direction, although they were more sizable and numerous than the differences between the self and liked others or acquaintances. Both the number of positive traits used and positive complexity (H_{pos}) was greater for the self than for disliked others, and both the number of negative traits used and negative complexity (H_{neg}) was greater for disliked others than for the self. Because complex descriptions cannot be formed from just a few traits, however, the differences in H_{pos} and H_{neg} were probably due to the relative paucity of negative traits ascribed to the self and the relative paucity of positive traits ascribed to disliked others.

In addition, there were three differences between the self and disliked others that cannot be explained by the numbers of traits ascribed. First, people spontaneously listed more roles for the self than for disliked others. Second, people described the negative behaviors of disliked others as less tied to specific roles—as more dispositional—than their own negative behaviors. Indeed, the negative behaviors of disliked others were described as more consistent across situations than their positive behaviors, whereas the reverse was true for the self. Third, descriptions of disliked others contained more elaborated integration—especially descriptions of their impacts on other people—than did self-descriptions.

Conclusions and Limitations

In summary, the differences in the complexity of descriptions of self and liked others or acquaintances were weak and inconsistent. Indeed, Study 2 and Study 4 found no differences at all. The numerous null results should not be dismissed offhand as due to insensitive measures or weak study designs, given that all of the studies also yielded some large effect sizes, namely, effects of whether the traits were desirable, whether the targets were likeable, or the interaction of those two variables. Moreover, most studies also revealed some differences between the self and liked others or acquaintances; those differences just did not consistently show the self to be more complex. The differences between the self and disliked others were greater in number and magnitude than the difference between the self and liked others, but even in this case there were differences in both directions.

But the existence of self-other differences in complexity, regardless of direction, raises another question: Why should there be any differences if the process of accessing and articulating semantic knowledge is the same whether you are describing the self or someone else?

There are probably many reasons. For example, the reason self-descriptions showed relatively little elaborated integration may be that the self is a reference point in thinking about others more often than vice versa. On the other hand, the reason fewer roles were listed for the self than liked others may be that when others are involved in many things we feel proud of them, whereas when we are pulled in multiple directions we feel overwhelmed. Finally, the reason for most of the significant effects was that the more intimate the target (with the self and liked others being the most intimate targets), the more people used positive descriptors (and used them as global traits) and avoided negative descriptors (and avoided using them as global traits), causing self-descriptions to diverge more from descriptions of nonintimate than intimate targets.

A similar pattern has been found for other purported differences in thinking about the self versus others. The greater likelihood for people to attribute behavior to dispositional causes as observers than as actors—the “actor-observer difference” (Jones & Nisbett, 1971)—is not found in married couples (Fincham, Beach, & Baucom, 1987). The tendency for self-reference to yield better memory than other-reference—the self-reference effect (Rogers, Kuiper, & Kirker, 1977)—is eliminated or virtually eliminated when the other person is an intimate (Symons & Johnson, 1997). The tendency for people to see themselves as less vulnerable to risk than the “average” or “typical” person (Perloff, 1983) disappears when the other person is a specific close other, such as a best friend, sibling, or parent (Perloff & Fetzer, 1986). Finally, whereas descriptions of the self are less negative and more positive than descriptions of others in general, they are not less negative than descriptions of friends or more positive than descriptions of a best friend (Brown, 1986). In light of these findings, it is even less surprising that conceptions of the self and liked, well-known others are so similar in complexity. The fact is that people appear to think about the self and close others in similar ways.

Future research is necessary to determine whether the current findings will be robust across different methods and procedures. For example, one could ask participants to describe the self and others using more specific descriptors or in more specific contexts. One could use other methods to assess complexity or “test the limits” by providing more time or explicitly requesting very complex descriptions. Finally, one could influence social motives by manipulating communicative goals or the beliefs, values, and sources of power of the audiences to whom participants feel accountable (Jones & Pittman, 1982; Tetlock, Skitka, & Boettger, 1989).

It is also important to remember that the present results assess the complexity of verbal encoding of

semantic person-knowledge. Given the disjunction between semantic and episodic knowledge, the capacity limits of working memory, and the constraints of language (a medium more suited to social discourse than to an accurate and detailed representation of social reality), the present results cannot speak to the complexity of nonverbal, episodic, or long-term memory representations.

Despite these limitations, the present results pose a serious challenge to the assumption that conceptions of the self are typically more complex than conceptions of others. Instead, it appears that self-other differences in complexity can occur in either direction and depend on exactly who is described, what is described, and how it is described. Furthermore, if the term *complexity* is as applicable to conceptions of other people as it is to the self-concept, then *other-complexity* might play as important a role in how people think, feel, and act toward others as *self-complexity* does in how people think, feel, and act toward themselves.

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