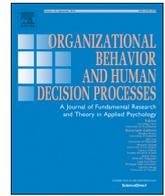




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No self to spare: How the cognitive structure of the self influences moral behavior[☆]

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ABSTRACT

People represent knowledge about their self-concept in terms of multiple cognitive structures or self-aspects. “Self-overlap” refers to the extent to which people perceive their various self-aspects as interconnected, such that their thoughts and feelings about themselves are similar across these self-aspects. The present research shows self-overlap influences moral behavior. Specifically, people high in self-overlap (interconnected self-aspects) are more likely to behave ethically than people low in overlap (independent self-aspects), because they tend to see their actions as “self-diagnostic” (i.e., representative of the type of person they are). In six studies, we find this pattern of behavior for chronic/measured (Studies 1 and 2) and situational/manipulated self-overlap (Studies 3–6). We show people low in self-overlap behave as though they have “no self to spare”—unless their actions are presented as non-diagnostic for inferences about the self (Study 5), or unless they do not value the context-relevant moral characteristic (e.g., being altruistic; Study 6). Finally, we introduce a 7-item measure of perceptions of self-diagnosticsity (SDS).

1. Introduction

People often learn about themselves by observing their own behaviors and drawing inferences about their own attitudes, traits, and characteristics (Baca-Motes, Brown, Gneezy, Keenan, & Nelson, 2013; Bem, 1972; Fishbach, Dhar, & Zhang, 2006; Gneezy, Imas, Brown, Nelson, & Norton, 2012; Khan & Dhar, 2006; Kristofferson, White, & Peloza, 2014). Notably, most people are motivated to maintain a positive mental image of who they are (i.e., self-concept), and so they often “do the right thing” at least in part to present themselves to themselves in a positive light (i.e., self-signaling; Bodner & Prelec, 1996; Greenwald & Breckler, 1985; Prelec & Bodner, 2003; Schlenker, 1985; Steele, 1988). For example, a person might donate to charity because doing so will make her feel “generous,” and she might forgo an easy opportunity to cheat, because she does not want to think of herself as a “cheater” (Batson, Thompson, Seufferling, Whitney, & Strongman, 1999; Dunning, 2002; Gino, Gu, & Zhong, 2009; Mazar, Amir, & Ariely, 2008; Gneezy, Gneezy, Riener, & Nelson, 2012; Savary, Goldsmith, & Dhar, 2015).

Recent research suggests people are particularly motivated to engage in self-signaling behaviors when they perceive their actions as

“self-diagnostic” (i.e., representative of the type of person they are). For example, Touré-Tillery and Fishbach (2012, 2015) found that people completing a sequence of actions toward achieving a goal see actions at the beginning and the end as more self-diagnostic than actions in the middle and hence, they are more likely to adhere to their standards (of morality, religion, and performance) at the beginning and end (vs. middle) of such sequences. Drawing from memory research on primacy and recency effects (see Greene, 1986, for review), the authors suggest these differential perceptions of self-diagnosticsity occur because people might expect to remember their actions at the beginning and end better than those in the middle of the sequence of actions. Similarly, Bryan, Walton, Rogers, and Dweck (2011) found that people are more likely to comply with a call to action when the action is linked explicitly to a desirable identity (e.g., “being a voter”) than when the action is not presented as self-diagnostic (e.g., “vote”). By contrast, when an action is explicitly linked to the undesirable identity of cheater (e.g., “don’t be a cheater” vs. “don’t cheat”), people are less likely to take advantage of an opportunity to lie for their own financial gain (Bryan, Adams, & Monin, 2013). Taken together, these findings highlight the important role of perceptions of self-diagnosticsity for moral behavior (see also Shu, Mazar, Gino, Ariely, & Bazerman, 2012).

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In the present article, we explore another factor that influences moral behavior through perceptions of self-diagnostics: people's mental representations of the structure of their self-concept (self-structure). Specifically, we investigate the possibility that people who represent their self-concept with more (vs. less) overlap between their various identities (or self-aspects) will be more likely to behave morally, because they will tend to see their actions as more self-diagnostic.

2. Structural dimensions of the self-concept

The self-concept is a collection of ideas people have about who they are. People's representations of their self-concepts vary not only in terms of content ("I am smart," "I am clumsy"), but also in terms of structure. Social-cognitive theories suggest people represent knowledge about their self-concept in terms of multiple cognitive structures or self-aspects (Gergen, 1971; Greenwald & Pratkanis, 1984; James, 1892; Kihlstrom & Cantor, 1983; Kivetz & Tyler, 2007; Linville, 1985; Markus & Nurius, 1986; Markus & Wurf, 1987; McConnell, 2011; Rosenberg & Gala, 1985). These self-aspects may take the form of social roles, interpersonal relationships, activities, or goals. For example, a person might think of himself as a politician (social role), a grandfather (relationship), and a ping-pong player (activity) who aims to master multiple languages (goal). In turn, each of these self-aspects would be associated with subordinate traits, personal memories, thoughts, and emotions that describe this person's perception of himself within that life domain (Garczynski & Brown, 2013; Showers, 1992; Zeigler-Hill & Showers, 2007).

Self-complexity refers to the extent to which people's representations of their self-concepts vary along two structural dimensions: the number of aspects they use to organize their self-knowledge, and the degree of overlap among these aspects (Linville, 1985; Rafaeli-Mor, Gotlib, & Revelle, 1999). Indeed, while self-representations tend to be inherently different from one context to another (Nurius & Markus, 1989), individuals vary in the extent to which they perceive these differences. Some people view their self-aspects as distinct and independent, such that their thoughts and feelings about themselves are different across these self-aspects ("I am a gentle and relaxed grandfather, but I am a competitive and resilient politician"). Other people view their self-aspects as interconnected, such that their thoughts and feelings about themselves are similar across these identities ("I am a gentle and relaxed grandfather and politician"). Self-overlap refers to the extent to which people perceive their self-aspects as containing similar features. The highest degree of self-complexity occurs when a person has a large number of aspects and a low level of self-overlap, whereas the lowest degree of self-complexity occurs when a person has a small number of aspects and high level of self-overlap.

Research shows self-complexity influences how people respond to and cope with positive and negative events (McConnell & Brown, 2010; McConnell, Rydell, & Brown, 2009; Rafaeli-Mor & Steinberg, 2002). For example, Linville (1987) found that college students low (vs. high) in self-complexity were more likely to suffer from physical and mental illnesses when faced with highly stressful life events. Similarly, Dixon and Baumeister (1991) found that after failure feedback, participants low (vs. high) in self-complexity were more likely to seek to escape from self-awareness by avoiding their own reflection in a mirror, and their subsequent performance was impaired. Indeed, Linville (1985, 1987) argues that when people experience positive or negative events in one self-aspect (e.g., a politician losing an election), corresponding thoughts and feelings become associated with that self-aspect ("I am an awful politician"). "Spillover" occurs when these thoughts and feelings spread from the original self-aspect to other self-aspects ("I am also an awful grandfather)—either through an inferential process or through spreading activation within a network consisting of self-aspects as semantic nodes with corresponding affect (see Bower, 1981; Clark & Isen, 1982). The more overlapping a person's self-aspects are—in terms of their cognitive and affective contents—the more likely thoughts and

feelings associated with one self-aspect will spread to others, and hence affect a greater proportion of the self-concept. Furthermore, for a person with a small (vs. large) number of self-aspects, a greater proportion of the overall self-concept will be affected by the event (Linville, 1985; McConnell, 2011; McConnell et al., 2009).

Thus, research on self-complexity suggests both structural dimensions of the self-concept (self-overlap and number of self-aspects) can work together to amplify or attenuate people's emotional reactions to past actions and events in their lives. In the present research, we go beyond these retrospective effects of the self-structure to explore its prospective influence on moral behavior. In particular, we propose that in the context of prospective actions, the extent to which people perceive their self-aspects as overlapping will play an important role in shaping their moral decision-making and behaviors through perceptions of self-diagnostics.

3. Self-diagnostics and self-overlap

Research distinguishes between prescriptive morality, which focuses on what people believe they should do (e.g., donating to charity and other prosocial behaviors), and proscription morality, which focuses on what people believe they should not do (e.g., cheating and other unethical behaviors; Janoff-Bulman, Sheikh, & Hepp, 2009). While individuals might vary in the motivational strength of each type of morality, most people generally desire to be the type of person who refrains from immoral acts and engages in moral deeds. In fact, Janoff-Bulman et al. (2009) found that whereas proscription immorality resulted in greater blame, prescriptive morality resulted in greater moral credit. Thus, most moral decisions people face—whether proscription or prescriptive—have the potential to lead to positive or negative inferences about the self, and the extent to which people deem these decisions self-diagnostic will have an important influence on what they choose to do (Bryan et al., 2013; Bryan et al., 2011; Touré-Tillery & Fishbach, 2012, 2015, 2018).

Self-diagnostics reflects the extent to which people perceive a given action as representative of the type of person they are. Previous research shows when people deem their actions as self-diagnostic, they will be motivated to "do things right," behaving in ways that allow them to signal desired characteristics to themselves (e.g., adhere to moral standards, apply themselves at tasks, give to charity, and exercise self-control). Many factors can influence the perception that an action is self-diagnostic, ranging from where an action is positioned in a sequence of actions (Touré-Tillery & Fishbach, 2012; 2015) to how an action is labelled (Bryan et al., 2013, 2011). For example, research on self-signaling suggests the more effort an action requires (e.g., physical or mental exertion), the more the action will seem diagnostic for inferences about the self (see Prelec & Bodner, 2003; Savary et al., 2015). In their studies, Dhar and Wertenbroch (2012) found that participants preferred choice sets requiring self-control (e.g., featuring a mix of healthy and indulgent options) to those not requiring self-control (e.g., featuring healthy options only), because the former were deemed more diagnostic for inferences about one's willpower or health consciousness.

We propose that beyond these external influences, perceptions of self-diagnostics should also be susceptible to people's internal structural representations of their self-concept, specifically to the extent to which people see themselves as "the same person" from one self-aspect or life context to the next—i.e., self-overlap. Indeed, compared to people who think they are different across situations (low in self-overlap), people who describe themselves similarly regardless of the situation (high in self-overlap) should be more likely to apply any negative or positive ideas they form about themselves in one self-aspect to other self-aspects, thus leading to greater perceptions of self-diagnostics. Furthermore, we propose this tendency to view one's actions as more or less self-diagnostic should be more closely related to the degree of self-overlap than to the number of self-aspects and individual has. Whether a person has two or five self-aspects, if she perceives her

self-aspects as completely independent (no overlap whatsoever), the ideas she forms about herself in one self-aspect will remain attached to that self-aspect only, reducing the extent to which actions performed in that self-aspect will be perceived as diagnostic of the self as a whole. By contrast, whether a person has two or five self-aspects, if she perceives her self-aspects as completely overlapping, the ideas she forms about herself in one self-aspect will apply to all other self-aspects. Thus, people high (vs. low) in self-overlap should experience decisions as more consequential for their general views about themselves—that is, as more self-diagnostic—irrespective of the number of self-aspects they have. In turn, the greater perceived self-diagnostics of each action should motivate people high (vs. low) in self-overlap to behave in ways that would allow them to maintain a positive global self-concept. From this theorizing, we draw the following first three hypotheses:

H1: People high (vs. low) in self-overlap will be more likely to behave morally.

H2: People high (vs. low) in self-overlap will tend to see their actions as more self-diagnostic.

H3: Perceptions of self-diagnostics will mediate the relationship between self-overlap and moral behavior.

We note that although positive actions can boost—whereas negative actions can damage—the self-concept, this effect will depend on the perceived motive behind the action (see also Bem, 1972; Jones, Davis, & Gerger, 1961). For example, although respecting the rules of the road is generally perceived as a “good thing,” doing so when a police car is present might be a weaker signal of responsible driving than doing so at a deserted intersection. Similarly, although giving to charity is commendable, giving under the social pressure to “show that you care” might be a weaker signal of generosity than doing so simply to “help improve lives.” Because people high (vs. low) in overlap see each action as more self-diagnostic, they should be more sensitive to such changes in the meaning of actions for the self-concept and more sensitive to the corresponding variations in the strength of the self-signal from a given decision or choice.

From this analysis, we propose that because the effect of self-overlap on moral behavior operates through perceptions of self-diagnostics, people high (vs. low) in self-overlap will be more likely to behave morally when moral actions carry a strong and clear positive signal. For example, when giving to charity mostly means “I am a good person” or when forgoing an opportunity to make extra money by lying means “I am honest; I am not a cheater.” By contrast, the behaviors of people high (vs. low) in overlap will not differ when moral actions carry a weak or ambiguous signal, for example, when giving to charity might also mean “I want to show off” and when forgoing an opportunity to make extra money by lying might mean “I don’t want to get caught.” Furthermore, we predict that when moral actions carry a strong (vs. weak) self-signal, people high in overlap will be more likely to behave morally. However, the self-signal’s strength (weak vs. strong) will have minimal influence on the behaviors of people low in overlap. We draw the following additional hypothesis:

H4: The strength of the self-signal will moderate the positive effect of self-overlap on moral behavior, such that this effect will only occur when moral actions carry a strong positive self-signal.

In line with the theories of self-structure that form the basis for the present work (Linville, 1985, 1987; McConnell, 2011; Rafaeli-Mor et al., 1999), we expect the structure of the self-concept to influence perceptions of self-diagnostics regardless of people’s current views of themselves. Instead, people’s desired (or undesired) views of themselves will guide their behavior (Markus & Nurius, 1986). We note that whether people are high or low in self-overlap, their self-concept representations might include a mix of positive and negative characteristics. In particular, since most people are motivated to see themselves

in a positive light, these subjective representations should tend to be more positive than negative (Greenwald & Breckler, 1985; Schlenker, 1985; Steele, 1988).

Importantly, we argue that the effect of self-overlap on moral behavior occurs because people high (vs. low) in self-overlap perceive their actions as self-diagnostic, and hence are motivated to behave in ways that allow them to signal desirable traits to themselves. For example, people high (vs. low) in self-overlap will be more likely to donate to charity because this act will signal to themselves that they are caring or altruistic. It follows that the extent to which people consider “being altruistic” a desirable moral characteristic should moderate the effect of self-overlap on charitable giving. Specifically, the effect of overlap on moral behavior should be more likely to occur for people who value altruism (i.e., the context-relevant moral characteristic).

We also predict that due to greater perceptions of self-diagnostics, people high in self-overlap will be more likely to behave in accordance with the moral characteristics they value: for people high in self-overlap, the more they value being altruistic, the more likely they will be to behave prosocially. However, the importance of altruism will have minimal influence on the behaviors of people low in self-overlap. We note that our main hypothesis predicts a correlation between self-overlap and altruistic behavior, and we would expect a degree of correlation between self-overlap and stated altruism importance. However, altruism importance and self-overlap are still two different constructs: the former refers to the content of the self-concept, whereas the latter refers to the structure of the self-concept. Theoretically, a person could value altruism and be either high or low in overlap, but people high (vs. low) in self-overlap are more likely to behave in accordance with the identities and goals they value. Thus, we draw our final hypothesis:

H5: The importance of the context-relevant moral characteristic (e.g., altruism) will moderate the positive effect of self-overlap on moral behavior (e.g., charitable giving), such that this effect will only occur for people who value the context-relevant moral characteristic.

4. Overview of studies

Six studies tested our hypotheses about the effect of self-overlap on moral behavior. Studies 1 and 2 explored the correlation between self-overlap and moral decision-making using a computerized adaptation of Linville’s (1985, 1987) trait-sorting measure of self-complexity. Study 2 also tested the mediating role of perceived self-diagnostics on the relationship between self-overlap (measured) and moral decision-making. Study 3 assessed the effect of self-overlap on moral decision-making using an experimental manipulation of self-overlap (Study 3A), and explored the role of perceptions of diagnostics in this effect by looking at the effect of self-overlap on interpersonal judgments of moral transgressors (Study 3B). Study 4 used a different manipulation of self-overlap to test its effect on consequential moral behaviors in experimental settings: misreporting the outcome of a coin flip for financial gain. The last two studies examined our proposed underlying mechanism: Study 5 tested the moderating role of the self-signal’s strength on the relationship between self-overlap and charitable giving. Finally, Study 6 tested the moderating role of the importance of the context-relevant moral characteristic (e.g., altruism) on the relationship between self-overlap and charitable giving.

It is important to note that asking direct questions about self-diagnostics (e.g., “what I do says a lot about who I am”) tends to disrupt the behavior under consideration (if asked before or during the behavior), or produce a biased measure of self-diagnostics (if asked after the behavior). Thus, to show the role of perceptions of self-diagnostics in the relationship between self-overlap and moral behavior, we devised several experimental paradigms that approach the question from different angles. These paradigms include mediation with measure—rather than manipulated—independent variables (Study 2),

interpersonal judgment (Study 3B), moderation by self-signal strength (Study 6), and moderation by moral-characteristic importance (Study 7).

4.1. Sample sizes

We determined sample sizes across our studies based on rules of thumb, taking into account the subject pool (e.g., general population on online panels, university students), the main dependent variables, and the type of statistical analysis we expected to conduct. In experimental studies, we aimed for per-cell sample sizes ranging between 60 and 80 participants. In correlational studies, we aimed for total sample sizes ranging between 150 and 200 participants. Given the screening criteria described below, in studies measuring self-overlap, we oversampled in order to reach our predetermined sample size. Such oversampling often resulted in final samples slightly larger or smaller than anticipated.

4.2. Screening

We used a trait-sorting task identical to the one designed by Linville (1987) to capture measures of the self-structure. Because this task features long instructions and a large number of traits displayed on a computer screen (see Appendices A and B), participants had to be able to understand the instructions and properly visualize the information displayed on the screen. Therefore, in all studies that measure self-overlap (Studies 1 and 2, and Posttests for Studies 3A and 4), we used the following screening criteria. First, to ensure participants were able to read and understand the instructions properly, we excluded (a) non-native English speakers, (b) participants who finished the study in less than 2 min (i.e., under three standard deviations below the average completion times of these studies), and (c) those who failed the instruction-comprehension check (i.e., indicated the purpose of the task was to describe people in general). Second, to ensure participants were able to visualize the task properly on their devices, we excluded (d) those who completed the study on a mobile phone, the smaller screen size of which may not allow for a proper display of all the information.

For studies manipulating self-overlap (Studies 3–6), we excluded participants who took an hour or longer to complete the experiment, which was well over three standard deviations above the mean completion times in all our studies. Such long completion times were particularly problematic because they suggested participants might have been multitasking, which would likely reduce or eliminate the effect of any experimental manipulation.

Finally, to encourage truthful responses to screening questions (e.g., “are you a native English speaker?”), we chose not to screen out participants at the beginning of the survey Chandler and Paolacci (2017). Instead, we presented the questions within the demographic section of the surveys and excluded participants later as predetermined. The remaining screening criteria required that participants complete the entire survey. We compensated all participants for their time—even those who did not meet the screening criteria.

5. Study 1: more (overlap) is more (moral)

In Study 1, we tested the relationship between self-overlap and prescriptive moral decision-making. Participants indicated their likelihood to engage in a series of prosocial behaviors. Then we measured self-overlap using a computerized adaptation of Linville’s (1985) trait-sorting measure of self-complexity, and computation methods developed by Rafaëli-Mor et al. (1999). We predicted a positive correlation between self-overlap and prosocial decision-making, such that participants with lower self-overlap would report a greater likelihood of engaging in prosocial acts.

5.1. Participants

Following our sample-size and screening requirements, we recruited 250 participants based in the United States through Amazon’s Mechanical Turk (MTurk) website. We screened out 51 participants: 5 who completed the study on a mobile phone, 5 non-native English speakers, 28 who failed the instruction-comprehension check, 2 who experienced technical issues during the trait-sorting task, and 1 who completed the study in less than 2 minutes. All participants received \$1.50 in compensation. We used the remaining sample of 209 participants (111 female, $M_{\text{age}} = 36.47$, $SD_{\text{age}} = 11.45$) in subsequent analyses.

5.2. Design and procedure

Participants took part in a study described as “two separate surveys about views and attitudes,” which started with a brief demographic questionnaire. In the first part of the study, participants read eight scenarios presenting an opportunity to engage in a prosocial act (e.g., “You are running late for an appointment, when someone approaches you to ask for directions to a location you know”). Scenarios were adapted from Rushton, Chrisjohn, and Fekken’s (1981) altruism scale (see Appendix D). For each scenario, participants indicated their likelihood of engaging in the prosocial behavior (e.g., “Would you stop to give directions to this person?”) on a 5-point scale (1 = *Absolutely not*, 2 = *Probably not*, 3 = *I’m not sure*, 4 = *Probably yes*, 5 = *Absolutely yes*).

Next, participants moved to the second survey, titled “How do you describe yourself?” which we designed as an online version of the trait-sorting task used by Linville to operationalized the self-complexity construct (see Appendix A for full set of instructions). In this task, participants sort a set of 33 trait words into meaningful groups. Each group represents a life domain or self-aspect and comprises traits that describe the participant in that particular aspect of his or her life. Specifically, we instructed participants to form groups corresponding to the various aspects of their lives and selves. Participants gave a name to each group (e.g., “Gamer”) and selected trait words from a provided list of 33 traits to describe that aspect of their lives (e.g., “Competitive,” “Impulsive,” “Rebellious,” see Appendix B for full list of traits). After describing each self-aspect or group sequentially, participants could continue to the next screen to add another self-aspect, or exit the survey if they had finished describing themselves. The task is designed to uncover (a) how many self-aspects participants report based on the number of trait groups they formed, (b) how differently or similarly they describe these self-aspects based on whether the same traits appear across multiple self-aspects (self-overlap), and (c) the dimensionality measure of self-complexity. Computing these three separate measures allowed us to examine the effects of each component of the self-structure separately, and to test our hypothesis about the unique effect of self-overlap.

As a measure of self-overlap, the trait-sort task provides an approximation of the extent to which people see themselves as the same person across their various life- or self-aspects. The exact nature of the traits that overlap across self-aspects is irrelevant. To compute self-overlap, we used the following formula, developed by Rafaëli-Mor et al. (1999): $\text{self-overlap} = (\sum_i (\sum_j C_{ij}) / T_i) / n * (n - 1)$, where C is the number of common features in two self-aspects, T is the total number of features in the focal self-aspect, n is the total number of self-aspects, and i and j are different and vary from 1 to n. The formula captures the average communality between all pairs of self-aspects. Specifically, the pairwise communality between a focal self-aspect and another self-aspect is the proportion of traits both self-aspects have in common, within the total number of traits in the focal self-aspect. Consider for example, a person who sorted 6 traits (numbered 1, 2, 3, 4, 5 and 6) into two groups: Group A: {2, 3, 4, 5, 6} and Group B: {1, 2}. The overlap between these two groups is comes from one common trait (number 2). Thus the ratio of shared traits to total number of traits is 1/5 for Group

A and 1/2 for Group B. The self-overlap score is the average of these ratios: $(1/5 + 1/2)/2 = 0.35$. More generally, the pairwise comparison is performed between all $n*(n - 1)$ combinations of two groups, before being averaged. The self-overlap measure ranges from 0 to 1 such that a low score indicates a high degree of distinction among self-aspects (low self-overlap). A high score indicates a large proportion of traits describing one aspect also describe another aspect (high self-overlap). In our calculations, participants who formed only one group received the highest possible overlap score of 1.

The dimensionality measure corresponds to Linville's classic measure of self-complexity and is based on the H statistic, an index of dispersion derived from information theory (Attneave, 1959; Scott, 1969). The dimensionality measure is defined by the following formula: $\text{dimensionality} = \log_2 n - (\sum_i n_i \log_2 n_i) / n$, where n is the total number of traits (here 33), and n_i is the number of traits that appear in a particular group or self-aspect combination. The measure represents the number of independent attributes implicit in a participant's trait sort, and reflects both the number of self-aspects and the degree of overlap between them (Linville, 1987). According to Linville (1987), the dimensionality score can be interpreted as the minimal number of independent binary attributes underlying a person's trait sort. The greater the number of self-aspects created and the less redundant the traits used in creating these self-aspects, the greater the dimensionality score should be.

At the end of the experiment, participants answered four questions about the trait-sorting task. These questions appeared in random order and included an instruction-comprehension check that asked participants to indicate whether the purpose of the task was to describe people in general (1 = Agree, 2 = Disagree; see Appendix C for full list of questions).

5.3. Results and discussion

First, we computed the three structural measures of the self-concept using an R script based on formulas by Linville (1987, 1985) and Rafaeli-Mor et al. (1999): (a) the number of self-aspects ($M = 4.17$; $SD = 1.99$), (b) the degree of self-overlap ($M = .35$, $SD = .25$), and (c) the dimensionality score ($M = 2.21$, $SD = .86$). Next, we averaged participants' responses to the eight altruism scenarios to form an index of prosocial decision-making ($\alpha = .64$). Regressions of prosocial decision-making ($M = 3.47$; $SD = .56$) on each of the three measures showed a positive relationship between self-overlap and prosocial decision-making ($\beta = .14$, $t(207) = 2.03$, $p = .044$; $r = .14$), but no effect of number of self-aspects or dimensionality ($t_s < 1$). Furthermore, the effect of self-overlap on prosocial decision-making held when we added the number of self-aspects ($\beta = .14$, $t(206) = 1.97$, $p = .050$; $r = .14$) or the dimensionality measure as a covariate in the analysis ($\beta = .14$, $t(206) = 2.04$, $p = .043$; $r = .14$).

These initial results supported our hypothesis about the unique effect of self-overlap on moral decision-making. We argue the pattern of response documented here occurs because participants who perceive a high (vs. low) degree of overlap among their self-aspects have a greater tendency to see their actions as diagnostic for inferences about the overall self. The next study tests this proposition by looking at the mediating role of perceived self-diagnosticity on the relationship between overlap (measured) and moral decision-making. Furthermore, whereas the present study looked at prescriptive moral decisions (i.e., what people should do), the next study sought to broaden the scope of our investigation by examining proscriptive moral decisions (i.e., what people should not do).

6. Study 2: mediation by self-diagnosticity

This two-part study tested the relationship between self-overlap and proscriptive moral (unethical) decision-making, and the mediating role of perceptions self-diagnosticity. Specifically, we investigated whether

people chronically higher in self-overlap generally tend to see their actions as more self-diagnostic, and whether these perceptions are in turn linked to moral decision-making. In the first part of the study, participants completed the trait-sorting task as well as a series of questions assessing general perceptions of self-diagnosticity. In the second part—several days later—participants indicated their likelihood of engaging in a series of unethical behaviors. Separating the key independent and dependent measures in time allowed us to eliminate interferences due to the juxtaposition of these measures. We predicted a negative relationship between self-overlap and unethical decision-making, and a positive relationship between self-overlap and perceived self-diagnosticity. We also predicted self-diagnosticity would mediate the relationship between self-overlap and unethical decision-making.

6.1. Participants

For the first part of the study (trait-sorting task and self-diagnosticity measures), we recruited 253 US-based participants online through MTurk, and screened out 50 participants: one who completed the study on a mobile phone, four non-native English speakers, 42 who failed the instruction-comprehension check, and three who completed the study in less than two minutes. All participants received \$1.50 in compensation. A sample of 203 participants (86 female; $M_{\text{age}} = 35.70$, $SD_{\text{age}} = 11.69$) remained for the first part of the study.

The second part of the study recruited qualified participants from the first part, and yielded a final sample of 165 respondents (85 female, $M_{\text{age}} = 35.65$, $SD_{\text{age}} = 11.85$). Participants received \$0.50 in compensation.

6.2. Design and procedure

For the first part of the study, participants completed a survey titled "how do you describe yourself?" that started with a brief demographic questionnaire. Next, participants completed the same trait-sorting task as in Study 1, followed by four questions about the task, including the instruction-comprehension check asking participants to indicate whether the purpose of the task was to describe people in general (1 = Agree, 2 = Disagree). Then, participants indicated their level of agreement or disagreement with seven statements measuring self-diagnosticity (1 = Strongly disagree, 7 = Strongly agree). We designed the self-diagnosticity scale (SDS) questions to assess the extent to which people generally tend to see their actions as representative of the type of person they are (e.g., "What I do says a lot about who I am"). Appendix F includes the full list of questions in the SDS and more details on the development of this measure—following recommendations by Hinkin (1998).

The day after the close of the first survey, we posted the second part of the study on MTurk such that only those who qualified could see and access it. We used TurkPrime to facilitate this procedure. TurkPrime is a research platform that integrates with MTurk and supports tasks that are common to the social and behavioral sciences (e.g., longitudinal studies). Five days after posting the survey, we sent a short email to eligible respondents who had not yet completed it to encourage them to participate. The survey stayed open for 10 days. Participants were not informed the two surveys were connected—they may have only noticed that they were from the same researcher. In this survey, participants read 12 brief scenarios describing opportunities to engage in unethical acts (e.g., "Your work place has supplies that can be quite useful at home. Would you use these work supplies for your own personal purposes?"), and indicated how likely they would be to engage in the behavior described (1 = Absolutely not, 2 = Probably not, 3 = I'm not sure, 4 = Probably yes, 5 = Absolutely yes). Scenarios were adapted from Leary and colleagues (unpublished materials; see Appendix E for full list of scenarios). The study ended with a brief demographic questionnaire.

6.3. Results and discussion

As in Study 1, from participants' responses to the trait-sorting task, we computed three self-structural measures: the number of self-aspects ($M = 4.83$; $SD = 2.71$), the self-overlap score ($M = .31$, $SD = .21$), and the dimensionality measure ($M = 2.35$, $SD = .91$). Next, we summed up participants' ratings of the seven SDS items to form a self-diagnosticity score ($\alpha = .94$), and averaged their responses to the 12 scenarios to form an index of unethical decision-making ($\alpha = .77$).

6.3.1. Self-diagnosticity

Regressions of the self-diagnosticity score ($M = 41.21$, $SD = 5.70$) on each of the three self-structural measures showed a positive marginal relationship between self-overlap and self-diagnosticity ($\beta = .14$, $t(163) = 1.79$, $p = .076$; $r = .14$), but no effect of number of self-aspects or of dimensionality ($t_s < 1$). This effect of self-overlap on self-diagnosticity held when we added the number of self-aspects ($\beta = .14$, $t(162) = 1.81$, $p = .073$; $r = .14$) or the dimensionality measure as a covariate in the analysis ($\beta = .14$, $t(162) = 1.82$, $p = .071$; $r = .14$).

6.3.2. Unethical behavior

Regressions of the unethical decision-making index ($M = 2.52$; $SD = .66$) on each of the three self-structural measures showed a negative relationship between self-overlap and unethical decision-making ($\beta = -.17$, $t(163) = -2.19$, $p = .030$; $r = .17$), but no effect of number of self-aspects or of dimensionality ($t_s < 1$). This effect of self-overlap on unethical decision-making held when we added the number of self-aspects ($\beta = -.17$, $t(162) = -2.18$, $p = .031$; $r = .17$) or the dimensionality measure as a covariate in the analysis ($\beta = -.18$, $t(162) = -2.27$, $p = .025$; $r = .17$).

6.3.3. Mediation analysis

We predicted self-overlap would influence unethical decision-making, at least in part, through differential perceptions of self-diagnosticity. To test this proposed underlying mechanism, we explored the mediating role of perceptions of self-diagnosticity on the effect of self-overlap on unethical decision-making. We used the bootstrap test of the indirect effect $a \times b$ (Zhao, Lynch, & Chen, 2010; Preacher & Hayes, 2004), where "a" represents the effect of self-overlap on self-diagnosticity, and "b" represents the effect of self-diagnosticity on unethical decision-making. We found the mean indirect effect from the bootstrap analysis was negative and significant ($a \times b = -.1135$), with a 95% confidence interval excluding zero ($-.2824$ to $-.0067$). In the indirect path, a one-unit increase in self-overlap increased self-diagnosticity by $a = 3.53$ units. Additionally, $b = -.0322$, so holding self-overlap constant, increasing self-diagnosticity had a negative effect on unethical decision-making ($t = -3.68$, $p = .0003$). The direct effect c ($-.3877$) of self-overlap on unethical decision-making became marginal ($t = -1.74$, $p = .084$). Thus, perceived self-diagnosticity mediates the relationship between self-overlap and unethical decision-making. Finally, we note that these mediation results remained unchanged when we added the number of self-aspects or the dimensionality measure as a covariate in the analysis.

This study supported our hypothesis about the mediating role of perceptions of self-diagnosticity in the relationship between self-overlap and unethical decision-making. We note that due to the correlational nature of these findings, other factors might have contributed to the relationships documented here and in Study 1. By using an experimental manipulation of overlap, the next study sought to establish the causal link between self-overlap and moral decision-making.

7. Study 3: moral decisions and judgments

To test the causal link between self-overlap and moral decision-making, Study 3 used an experimental manipulation of self-overlap. Depending on the condition, participants listed the main aspects of their

lives and briefly discussed how these aspects are connected/similar (high self-overlap) or separate/distinct (low self-overlap). In the first (and main) part of the experiment (3A), we examined the effect of self-overlap on moral decision-making. In the second part (3B), we tested whether people high (vs. low) in self-overlap would judge others more harshly for not engaging in moral behavior, which would provide an indication of how they would judge themselves.

7.1. Study 3A: what would you do?

After participants completed an experimental manipulation of self-overlap, they indicated their likelihood of engaging in a series of unethical behaviors. We predicted participants in the high- (vs. low-) overlap condition would be less likely to endorse the unethical behaviors described in the scenarios.

7.1.1. Participants

One hundred and forty-three undergraduate students (104 female, $M_{\text{age}} = 20.11$; $SD_{\text{age}} = 1.91$) from a large private university in the United States completed this experiment and received a \$2.00 gift card from a major online retailer in compensation. We recruited participants online through the research laboratory of the university. Four participants took over one hour to complete the study, and in accordance with our screening criteria, were excluded from subsequent analyses. We report below analyses on the remaining 139 respondents.

7.1.2. Design and procedure

The experiment employed a 2 (self-overlap: high vs. low) between-subjects design. Participants completed two "short surveys about judgment and decision making." The first survey was our experimental manipulation of self-overlap. Participants in the high [low] self-overlap condition read the following introduction:

People's lives tend to have various facets—e.g., work/academic life, social life and family life. These facets typically correspond to meaningful aspects of the self, such as particular goals (I am an aspiring astronaut), activities (I am a stamp-collector), or social roles (I am a son/daughter). In this research, we are interested in how people combine the facets of their lives and think about the similarities among these facets [separate the facets of their lives and think about the differences between these facets].

Next, the instructions asked participants to take a moment to list the main facets of their lives. In the high [low] self-overlap condition, participants were further instructed to discuss how these facets of their life are connected to [separate from] one another, and the ways in which they often act and think similarly [differently] from one facet to the next. After this exercise, participants answered two exploratory manipulation-check questions: they indicated the extent to which they generally describe the facets of their lives as similar or distinct (1 = *Very similar*; 7 = *Very distinct*), and as connected or separate (1 = *Very connected*; 7 = *Very separate*). These checks produced mixed results ($r = .38$, $p < .001$), so we analyzed them separately. Participants in the high self-overlap condition rated the facets of their lives as more similar/less distinct ($M = 4.16$, $SD = 2.09$) than participants in the low self-overlap condition ($M = 5.03$, $SD = 2.05$; $t(137) = -2.46$, $p = .015$, $d = -.42$). However, we found no effect of the manipulation on ratings of connectedness/separateness of the facets ($t < 1$).

Therefore, to check that our manipulation of people's perceptions that their self-aspects are distinct/separate versus similar/connected produced changes in self-overlap, we conducted a posttest that examined the effect of the manipulation on the three self-structural measures assessed in Studies 1 and 2. As such, this posttest was a more accurate and conservative check of our manipulation, because it relied on established measures of self-complexity and self-overlap (trait-sort

task, Linville, 1985, 1987). In the posttest, we analyzed responses from 127 participants (63 female, $M_{\text{age}} = 37.61$, $SD_{\text{age}} = 12.85$) after screening out 27, using the same screening criteria as in previous studies. Participants recruited online on MTurk completed the same experimental manipulation of self-overlap as in the main experiment followed by the trait-sorting task used to calculate the number of self-aspects, the self-overlap score and the dimensionality measure. Results of the posttest confirmed that writing about the connections/similarities between their self-aspects increases people's perceptions of self-overlap ($M = .40$, $SD = .22$) relative to writing about the separations/distinctions between their self-aspects ($M = .32$, $SD = .20$, $t(125) = 2.13$, $p = .035$; $d = .38$). However, we found no effect of the manipulation on the number of self-aspects generated ($t(125) = -1.14$, ns), and we found a marginal effect of the manipulation on the dimensionality measure ($t(125) = -1.77$, $p = .079$).

Finally, in the main experiment, to reinforce the idea that the two surveys (experimental manipulation of self-overlap and unethical scenarios) were separate, participants saw a screen informing them to “wait while we load the next survey.” A few seconds later, the screen moved automatically to the next survey. This “second” survey consisted of the 12-scenario measure of unethical behavior used in Study 2, and ended with a brief demographic questionnaire.

7.1.3. Results and discussion

We averaged participants' responses to the scenario questions ($\alpha = .64$) to form an index of unethical decision-making ($M = 2.83$, $SD = .48$). A t -test indicated that participants in the high self-overlap condition ($M = 2.74$; $SD = .49$) were less likely to make unethical decisions than those in the low self-overlap condition ($M = 2.91$, $SD = .45$, $t(137) = -2.09$, $p = .039$; $d = -.36$). These results showed the effect of self-overlap on morality goes beyond chronically overlapping self-concepts: encouraging people to think of the connections between their self-aspects temporarily increases perceptions of self-overlap, leading to a decrease in unethical decision-making.

7.2. Study 3B: how do you judge others?

In this follow-up study, we investigated the types of inferences individuals high (vs. low) in self-overlap would draw about a person who fails to behave morally. Participants completed the same manipulation of overlap as in study 3A and read a scenario about a person (Alex) who chose not to behave prosocially. We predicted participants in the high (vs. low) self-overlap condition would treat Alex's behavior as a stronger signal of his lack of warmth and likability—i.e., would deem Alex's action more diagnostic of the type of person he is. In particular, we rely on the fundamental notion from self-perception theory that people observe their own behaviors and make inferences about their own attitudes, traits, and characteristics (self-inferences) in the same way that they would observe another person's behavior and make inferences about that person. Thus, the mechanisms for evaluating and learning about other people often mirror those for evaluating and learning about the self (Bem, 1972; Touré-Tillery and Fishbach, 2012). Moreover, evidence suggests people tend to project their level of self-complexity, including self-overlap, onto others (Brown, Young, & McConnell, 2009). Therefore, finding that people high (vs. low) in self-overlap treat other people's behavior as more diagnostic for inferences about them would imply that people high (vs. low) in self-overlap treat their own behaviors as more self-diagnostic.

7.2.1. Participants

Two hundred and one participants (115 female, $M_{\text{age}} = 37.28$; $SD_{\text{age}} = 11.29$) recruited through MTurk completed this experiment online in return for monetary compensation. No participants were excluded.

7.2.2. Design and procedure

The experiment employed a 2 (self-overlap: high vs. low) between-subjects design. Participants signed up to complete two “separate surveys.” The first survey was the same experimental manipulation of self-overlap as in study 3A. In the second survey, participants read the following brief scenario about a person who chose not to behave prosocially:

Alex is walking down the street. He looks at the time on his phone and realizes he is running late for an appointment. He starts walking faster when someone approaches him to ask for directions to a location he knows well. The location is quite close to where they are currently standing but tricky to get to. Alex hesitates for a moment. Then, he mumbles a quick sorry and rushes down the street to his meeting.

This scenario was adapted from one of the questions used in Study 1. To encourage all participants to read the scenario, we programmed the online survey such that participants could not move to the next screen for 10 seconds. We measured participants' perceptions of the diagnosticity of Alex's behavior through their judgments of Alex's warmth and likability. Indeed, participants who deem Alex's choice not to behave prosocially as more (vs. less) diagnostic of the type of person he is should judge him less favorably. Thus, we asked participants “What is your impression of Alex? What kind of person do you think he is?” Participants responded on four bipolar scales anchored at (a) 1 = *Unlikable*; 7 = *Likable*, (b) 1 = *Unfriendly*; 7 = *Friendly*, (c) 1 = *Cold*; 7 = *Warm*, and (d) 1 = *Bad*; 7 = *Good*. The study ended with a brief demographic questionnaire.

7.3.3. Results and discussion

We averaged participants' responses to the four impression questions ($\alpha = .93$) to form an index of perceived diagnosticity ($M = 3.88$, $SD = 1.16$). A t -test indicated participants in the high self-overlap condition ($M = 3.71$; $SD = 1.09$) evaluated Alex less favorably than participants in the low self-overlap condition ($M = 4.04$, $SD = 1.19$, $t(198) = -2.05$, $p = .042$; $d = -.29$). These results showed participants high (vs. low) in self-overlap perceived Alex's actions as more diagnostic for inferences about his warmth and likability. Because self-evaluation mirrors interpersonal evaluation, such a pattern of interpersonal judgment implies that people high (vs. low) in self-overlap would draw similar inferences about themselves—that is, see their own actions as more self-diagnostic.

In our studies thus far, we have measured moral behavior using hypothetical scenarios. Although the use of scenarios is commonplace in morality research, such self-reported moral behaviors could lead to socially desirable responding, and hence produce difficult-to-interpret results. For example, a participant who reports moral intentions could be more moral or could be lying to appear more moral, which would make this participant less moral. In the next studies, we investigated consequential behaviors in experimental contexts to further test the causal link between self-overlap and morality.

8. Study 4: how good is your Intuition?

In Study 4, we use another experimental manipulation of self-overlap to test its relationship with moral behavior. Participants read a definition of self-complexity emphasizing the self-overlap dimension, and suggesting that either high or low self-overlap leads to positive life outcomes. They then guessed why such results might arise. Based on the notion of motivated reasoning (Kunda, 1990; Kunda & Sanitioso, 1989), participants who read that high [low] overlap is good should be motivated to think of themselves as being high [low] in self-overlap. After the self-overlap manipulation, participants took part in a study described as being on intuition, and in which they had to predict the outcome of a private coin flip. Roughly half the participants read they

would receive additional compensation if they correctly predicted the outcome of the coin flip (incentive condition), while others did not receive this incentive (no-incentive condition). Combined with the privacy of the coin flip, the monetary incentive made it tempting for participants to dishonestly report correct predictions. Because we could not establish that the all coins used by our participants were fair, the no-incentive condition allowed us to establish a baseline level of prediction accuracy. We expected participants in the high (vs. low) self-overlap condition would be less likely to (mis)report matches for additional compensation. Furthermore, we predicted reports of matches under incentive (vs. no-incentive/baseline) would be higher for participants in the low self-overlap condition—a sign of dishonest reporting. However, reports of matches in the high self-overlap condition would be similar regardless of the incentive structure—a sign of honest reporting.

8.1. Participants

We recruited 332 US-based adults (134 female; $M_{\text{age}} = 32.64$, $SD_{\text{age}} = 9.24$) online through MTurk to participate in this study in return for \$0.75 and the opportunity to win an extra \$0.25 bonus. We did not exclude any participants.

8.2. Design and procedure

The study employed a 2 (self-overlap: high vs. low) \times 2 (incentive: yes vs. no) between-subjects design—run in several batches. Participants took part in two, ostensibly separate, computerized studies. The first one was the manipulation of self-overlap, presented as “a short survey on human psychology.” Participants first read the following instructions:

In this research, we are interested in how well people are able to intuitively understand human psychology. We are especially interested in how people explain links between personality and life outcomes. In a moment, we will tell you about some discoveries made by psychologists. These discoveries have to do with how personality traits predict outcomes in life. We would like you to try to figure out the relationship between the personality traits and life outcomes. Basically, you will try to explain the findings as best you can.

On the next screen, all participants read the following definition of self-complexity, which was consistent with Linville's (1985) original conceptualization but with an emphasis on the self-overlap dimension:

People's lives tend to have various facets—e.g., work/academic life, social life and family life. These facets typically correspond to meaningful aspect of the self, such as particular goals (I am an aspiring astronaut), activities (I am a stamp-collector), or social roles (I am a son/daughter). Some people tend to have many facets of their lives and selves that are highly interconnected, such that across these various aspects of themselves, people still act and think in basically the same way. And some people tend to have facets of their lives and selves that are very distinct from each other, such that across these various aspects of themselves, people might act or think very differently. Scientists refer to this trait as self-complexity.

Furthermore, participants in the high [low] self-overlap condition read the following:

Scientists have found that people who have low [high] self-complexity—that is, people who have just a few facets of their lives that are very similar to each other [many facets of their lives that are very different from one another]—achieve greater success in terms of academic and career achievement, including higher GPA and

higher lifetime earnings.”

Then we asked participants, in both conditions, to explain the association—that is, to guess why low [high] self-complexity leads to greater success in life.

After this task, we included the following three exploratory manipulation-check questions: When thinking about yourself as an individual, to what extent do you consider yourself (a) Complex, (b) Multifaceted, (c) Complicated (1 = *Not at all*; 7 = *Very much*). We combined the three questions to form an index ($\alpha = .90$), and found that participants in the high self-overlap condition rated themselves as less complex/multifaceted/complicated ($M = 4.36$, $SD = 1.43$) than participants in the low overlap condition ($M = 4.70$, $SD = 1.46$, $t(333) = -2.15$, $p = .032$, $d = -.24$). We realize however, that these questions were—by definition—imprecise measures of perceived self-overlap.

Thus, to better check that our manipulation of self-overlap produced changes in people's perceptions that their self-aspects are distinct/separate versus similar/connected, we conducted a posttest looking at the effect of the manipulation on the three structural measures of the self-concept—assessed as in previous studies. In the posttest, we analyzed responses from 128 participants (60 female, $M_{\text{age}} = 33.38$, $SD_{\text{age}} = 10.58$) after screening out 22, using the same screening criteria as in previous studies. Participants, recruited online on MTurk, completed the same experimental manipulation of self-overlap as in the main experiment followed by the online trait-sorting task used to obtain three self-structural measures. The posttest confirmed that reading about the advantages of high self-overlap, increased perceived self-overlap ($M = .38$, $SD = .22$) relative to reading about the advantages of low self-overlap ($M = .30$, $SD = .20$, $t(126) = 2.06$, $p = .041$; $d = .38$). However, we found no effect of the manipulation on the number of self-aspects generated or on the dimensionality measure ($ts < 1$).

In the second study of the main experiment, titled “How good is your intuition?” participants read that the researchers were interested in how well people could predict the outcome of a (private) coin flip. In the incentive condition, we informed participants that those who predicted the outcome correctly would receive \$0.25 in addition to their regular compensation for the study. The no-incentive condition did not mention extra payment. This paradigm provided participants with an opportunity to cheat, since we (the experimenters) could not observe the outcome of their coin flip. Furthermore, compared to the no-incentive condition, the monetary incentive made it tempting for participants to (dishonestly) report matches between their predictions and the outcome of the coin flip. Thus, the no-incentive condition allowed us to establish a baseline level of prediction accuracy. Indeed, in our study, each participant flipped his or her own coin, such that we had no control over the type of coin flipped or the method of the flip. In particular, since we could not establish that all coins used for the experiment were fair we could not reliably use 50% as the baseline of honesty. Instead, we inferred dishonest behavior if the percentage of participants reporting a match between their predictions and the outcome of the private coin flip in the incentive condition was greater than in no-incentive condition.

Additionally, the instructions mentioned participants would need to have a United States (US) coin to proceed. Because the survey was online, participants would have to secure their own coin to complete it. Thus, to encourage all participants to have a coin before starting the study, we asked them to indicate whether they had a US coin with them “right now” (*Yes, No*). Those who selected “No” saw the following message: “You will need to have one US coin to proceed: a penny, a nickel, a dime, or a quarter, etc. Any denomination will work for this task. Please go get one coin now. We will wait for you... Once you have a US coin, select ‘OK, I have a coin now’ to proceed...” Next, participants indicated the type of coin they had and the production year marked on the coin—again, purely in an effort to ensure they had an actual coin. Despite these instructions, it is possible some participants

decided not to flip a coin at all. This possibility, however, is not problematic for our results because such participants would most likely report a favorable outcome of their imaginary coin flip—and hence increase the percentage of correct predictions relative to the no-incentive baseline.

Participants' task was to (1) make a prediction about the outcome of their coin flip (heads or tails), (2) flip the coin, and (3) report the outcome of the private coin flip. At the end of the coin-flip task, participants completed a basic demographic questionnaire.

8.3. Results and discussion

A binary logistic regression of reported matches (incorrect or correct prediction) on self-overlap (high or low), incentive (yes or no), and the interaction of self-overlap by incentive revealed the predicted interaction of self-overlap by incentive on reported matches ($z = 2.38$, $p = .017$; $r = .13$). We found no main effects of self-overlap or of incentive.

A closer look at the interaction of self-overlap by incentive showed that in the presence of an incentive to cheat (bonus compensation for prediction accuracy), participants in the low self-overlap condition (82.22%) were more likely to report matches than participants in the high self-overlap condition (65.06%; $z = 2.53$, $p = .011$; $r = .19$). However, in the absence of an incentive to cheat (no bonus compensation for prediction accuracy), we found no differences in reports of matches between the low (57.50%) and high self-overlap conditions (63.29%; $z = .75$, ns). Additional binomial tests showed the proportions of participants reporting matches was significantly greater than 50% in all conditions (all $ps < .02$) except the no incentive, low overlap condition ($p = .29$). As noted above, our lack of control over the coin flips make this binomial test less reliable than the previous comparison between the incentive and no incentive conditions. Nonetheless, taken together, these results suggest most participants cheated a little bit, but the magnitude of cheating depended on perceptions of self-overlap and on the presence or absence of an incentive. We display these results in Fig. 1.

Furthermore, an analysis within the overlap conditions indicated that participants in the low self-overlap condition were more likely to report matches in the presence of an incentive (82.22%) than in the absence of one (57.50%; $z = 3.45$, $p = 0.001$; $r = .26$). By contrast, the presence (65.06%) or absence (63.29%) of incentive made no difference in the reports of participants in the high self-overlap condition ($z = .23$, ns). Thus, thinking of oneself as high (vs. low) in self-overlap decreased the likelihood of cheating by misreporting the outcome of a coin flip for financial gain. We argue the pattern of responses documented here occurs because participants who perceive a high (vs. low) degree of overlap among their self-aspects have a greater tendency to see their actions as diagnostic for inferences about their overall self. In the next study, we explored this underlying mechanism by examining the moderating role of signal strength—which influences perceived self-diagnosticsity—on the relationship between self-overlap (manipulated

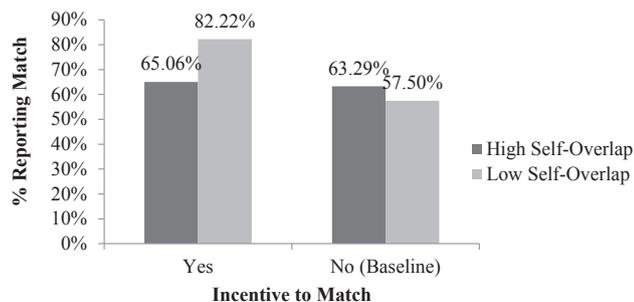


Fig. 1. Percentage of participants who reported a match as a function of self-overlap and incentive to report a match.

and ethical behavior. In addition, the last two studies extended the analysis from the effects of self-overlap on proscriptive (unethical) moral behaviors to prescriptive moral behavior in the form of charitable giving.

9. Study 5: helping yourself or helping others? moderation by self-signal strength

Study 5 tested the moderating role of self-signal strength. After going through the same self-overlap manipulation as in Study 3A, participants read a charitable appeal. For roughly half the participants, the appeal put social pressure on participants by asking them to “show that [they] care” (weak self-signal of generosity), whereas for the other half, the appeal simply asked participants to “help improve lives” (strong self-signal of generosity). The wording of the weak-self-signal condition highlighted social-signaling motives for making a donation (or impure altruism), which should result in external attributions for the action, such that the donor might conclude: “I did it because I wanted people to think I care.” By contrast, the strong-self-signal condition highlighted purely altruistic motives for making a donation, which should lead to internal attributions for the action, such that the donor might conclude: “I did it because I wanted to help others.” We predicted that in the strong-self-signal condition, we would replicate the previous pattern of behavior: participants high (vs. low) in self-overlap would be more willing to donate. However, in the weak-self-signal condition, we expected to see no difference in choice to donate between participants high and low in self-overlap, because the framing of the charitable appeal would lead participants in the high self-overlap condition to lower their perceptions of their action's self-diagnosticsity to levels similar to those experienced by participants in the low self-overlap condition. We further predicted that when participants thought of themselves as high in self-overlap, they would be more willing to donate when doing so sent a strong (vs. weak) self-signal of generosity. By contrast, participants low in self-overlap would be insensitive to such variations in self-signal strength.

9.1. Participants

We recruited 318 US-based participants (170 female; $M_{age} = 51.16$, $SD_{age} = 14.85$) online through ROIRocket to complete this study in return for monetary compensation (\$0.50) and a chance to win an additional \$20 through a bonus raffle. ROIRocket is an American provider of marketing research services using a large verified panel of consumers. We excluded four participants who took over one hour to complete the study. Because the charitable appeals in this study referred to Haiti, we also excluded three participants who reported being from that country, because their personal connection to Haiti might interfere with their perceptions of self-diagnosticsity in this context. The remaining 311 participants were included in the subsequent analyses.

9.2. Design and procedure

The study employed a 2 (self-overlap: high vs. low) \times 2 (self-signal: strong vs. weak) between-subjects design. Participants took part in a computerized “short survey on human psychology,” which consisted of the same manipulation of self-overlap used in Study 3A. This task was followed by the same two exploratory manipulation-check questions ($r = .49$, $p < .001$) used in Study 3A, which produced no effects. We relied on the posttest described in Study 3A as evidence of the effectiveness of this particular experimental manipulation of self-overlap.

Next, participants were unexpectedly presented with a charitable appeal from Habitat for Humanity soliciting a donation (adapted from Touré-Tillery & Fishbach, 2017). For roughly half the participants, the wording of the appeal highlighted purely altruistic motives for making a donation (help improves lives), which would lead to internal attributions for the action. Being able to make internal attributions for one's

good deeds should in turn increase the strength and clarity of the signal this action sends to the self about one's positive characteristic (e.g., "I did it because I wanted to help others, so I must be the kind of person who wants to help others.") For the other half of the participants, the wording of the appeal highlighted social-signaling or impure-altruism motives for making a donation (show that you care), which would result in external attributions for the actions. Making external attributions for one's good deeds should in turn decrease the strength and clarity of the signal this action sends to the self about one's positive characteristic (e.g., "I did it because I wanted people to think I care, so maybe I don't really care.")

Specifically, in the weak [strong] self-signal condition, the appeal was titled "Show that you care for [Help improve lives in] Haiti," and read,

The researchers on this project are collaborating with Habitat for Humanity in Haiti to show support [make a difference] for the cause. Today, over 80,000 people remain homeless in Haiti, five years after a devastating earthquake struck the capital city of Port-au-Prince. Habitat for Humanity works with Haiti to build homes, build communities, and break the cycle of poverty. By making a \$10 donation, you can show that you care for [help improve lives in] Haiti.

Next, to measure prosocial behavior, we asked participants how much they would be willing to donate to Habitat Haiti if they won the \$20 bonus raffle. They could select any amount ranging from \$0 to \$20—in \$1 increment. Making the donation conditional on a raffle allowed us to control—to some extent—for factors that could influence availability of funds (e.g., income or employment status).

To assess participants' attitude toward Habitat, we asked them to indicate the extent to which they viewed the organization as (a) kind, (b) efficient, (c) reliable, (d) competent, (e) trustworthy, (f) caring, and (g) familiar (1 = *Not at all*, 7 = *Very much*). Finally, participants completed a brief demographic questionnaire.

9.3. Results and discussion

We ran a regression of willingness to donate to Habitat on self-overlap (high or low), self-signal strength (strong or weak), and the interaction of the two variables. The results revealed the predicted interaction of self-overlap by self-signal strength on willingness to donate ($F(1, 307) = 5.69, p = .018, r = .13$). We found no main effects of self-overlap or of self-signal strength ($F_s < 1$).

A closer look at the interaction of self-overlap by self-signal strength showed that when the self-signal was strong (pure-altruism motive to "help improve lives"), participants in the high self-overlap condition chose to donate more money ($M = 10.61, SD = 8.46$) than participants in the low self-overlap condition ($M = 8.12, SD = 7.61; t(153) = -2.04, p = .042; d = .31$). However, when the self-signal was weak (impure-altruism motive to "show that you care"), we found no differences in donation pledges between the high ($M = 8.05, SD = 7.38$) and low self-overlap conditions ($M = 9.67, SD = 6.82; t(154) = 1.25, ns$).

Furthermore, these effects were such that participants in the high self-overlap condition were more willing to donate when the self-signal was strong ($M = 10.61, SD = 8.46$) than when it was weak ($M = 8.05, SD = 7.38, t(158) = 2.04, p = .042; d = .32$), whereas, self-signal strength made no difference in the donations of participants in the low self-overlap condition ($M_{\text{weak-signal}} = 9.67, SD_{\text{weak-signal}} = 6.82$ vs. $M_{\text{strong-signal}} = 8.12, SD_{\text{strong-signal}} = 7.61; t(149) = 1.26, ns$). We note that adding attitude regarding Habitat as a covariate did not change the pattern of results reported here. These results, displayed in Fig. 2, showed participants high (vs. low) in self-overlap were more sensitive to the type of self-signal inherent in their actions, and hence to the meaning or self-diagnostics of their actions. In the next study, still in

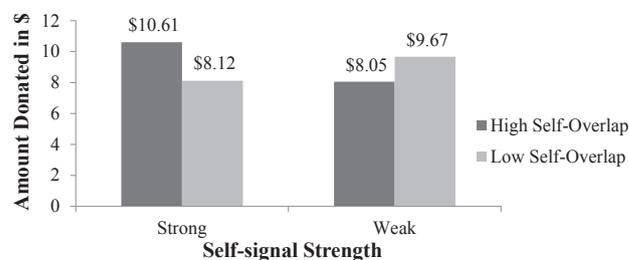


Fig. 2. Amount donated to charity as a function of self-overlap and self-signal strength.

the context of charitable giving, we conducted a final test of the role of perceptions of self-diagnostics on the effect of self-overlap on moral behavior by investigating the moderating role of the importance of the context-relevant moral characteristic (altruism) on this effect. Furthermore, donations from participants' own monetary compensation for the study served as the dependent variable.

10. Study 6: moderation by altruism importance

Study 6 used a longitudinal (two-part) design to test the moderating role of the importance of the context-relevant moral characteristic (altruism) on prosocial behavior. In the first part of the study, participants indicated the extent to which it is important for them to be altruistic. In the second part—several days later—participants completed the same overlap manipulation as in Study 3A, read a charitable appeal, and indicated how much of their monetary compensation for the experiment they would like to donate to the charity. Separating the key measure of moral-characteristic importance from the key dependent measure (monetary donations) allowed us to eliminate possible influences due to the juxtaposition of these measures. We predicted people who consider altruism an important characteristic would donate more to charity in the high (vs. low) self-overlap condition, but that this effect would not occur for people who consider altruism an unimportant characteristic. We also predicted that when participants thought of themselves as high in self-overlap, altruism importance would predict their willingness to donate. By contrast, for participants low in overlap, altruism importance would have no effect on their willingness to donate.

10.1. Participants

For the first part of the study (measure of moral-characteristic importance), we recruited 419 US-based participants online through MTurk (217 female; $M_{\text{age}} = 36.15, SD_{\text{age}} = 11.08$), who completed the short study in return for monetary compensation (\$0.75). The second part of the study yielded a final sample of 273 respondents (154 female, $M_{\text{age}} = 36.23, SD_{\text{age}} = 10.91$). Participants in part 2 received \$2.00 in compensation. We excluded one participant who took over an hour to complete the experiment, leaving 272 responses for subsequent analyses.

10.2. Design and procedure

The study employed a 2 (self-overlap: high vs. low) \times (moral-characteristic/altruism importance: continuous) between-subjects design. For the first part of the study, participants completed a survey that started with a brief demographic questionnaire. To measure moral-characteristic importance, we embedded within the demographic questionnaire a series of questions asking participants to rate how important various traits, goal, and habits are to them. One of these traits was "be altruistic" (1 = *Not at all important*; 7 = *Very important*). The others included "refrain from cursing," "be social," and "keep a wholesome diet."

Two days after the close of the first survey, we posted part 2 of the study on MTurk, such that only those who had completed the first survey could see and access it. The survey stayed open for 9 days. Participants did not know the two surveys were connected—they may only have noticed that they were from the same researcher. As in Study 2, we used TurkPrime to facilitate this procedure. Participants took part in a computerized survey on “judgment and decision making.” To justify the higher-than-usual compensation, the survey consisted of two truly unrelated portions. The portion related to the present research, a “short survey on human psychology,” always came first and consisted of the same manipulation of self-overlap used in Study 3A. This task was followed by two manipulation-check questions, which unlike the exploratory manipulation checks used in Studies 3 and 5 omitted the words “in general.” Instead, in an effort to keep participants focused on their current perceptions, we simply asked them to indicate the extent to which they would describe the facets of their life as similar or distinct (1 = Very similar, 7 = Very distinct) and as connected or separate (1 = Very connected; 7 = Very separate).

Next, participants were (unexpectedly) presented with a charitable appeal about “No Kid Hungry,” a real campaign to end childhood hunger. The appeal was titled “Make a Difference: Donate to Provide Meals” and read,

The researchers on this project are collaborating with a charitable organization named NO KID HUNGRY to improve the lives of hungry children all over the country. Millions of kids in America don't get enough food at home, making it almost impossible for them to focus and do well in school. Hungry kids often experience serious health issues, emotional and behavioral problems. NO KID HUNGRY is a national organization that works hard to provide healthy meals for kids and give them the nutrition they need to live, learn and play. By making a donation, you can make a difference.

To measure prosocial behavior, we asked participants how much they would be willing to donate to the organization from their \$2.00 compensation. They could select any amount ranging from \$0 to \$2.00—in 10 cents increment. Proceeds from the study were donated to the No Kid Hungry campaign. Finally, participants completed an unrelated study and a brief demographic questionnaire.

10.3. Results and discussion

First, we combined the two manipulation-check questions to form an index of perceived self-overlap ($r = .57$, $p < .001$). An analysis confirmed participants in the high self-overlap condition ($M = 3.15$, $SD = 1.5$) perceived their self-aspects as less distinct/separate (i.e., more similar/connected) than participants in the low self-overlap condition ($M = 4.52$, $SD = 1.86$; $t(270) = -6.69$, $p < .001$, $d = -.81$).

Next, we examined the effect of self-overlap and moral-characteristic (altruism) importance on willingness to donate (in cents). The willingness-to-donate measure or WTD ($M = 48.79\text{¢}$, $SD = 60.27\text{¢}$) appeared to follow a non-normal distribution, containing a large number of zero values (39.34%)—as is common with real donation data. Thus, we calculated a log-transformed version of this measure corresponding to $\ln(\text{WTD} + 1\text{¢})$. Because the natural logarithm of zero is undefined, adding 1¢ to each value ensured all zero values remained zero rather than missing from the subsequent analysis. We ran a regression of willingness to donate to No Kid Hungry on self-overlap (high or low), altruism importance ($M = 4.75$; $SD = 1.60$), and the interaction of the two variables. The results revealed a main effect of self-overlap ($\beta = -.39$; $t(268) = 2.26$, $p = .025$, $r = .14$), no main effect of altruism importance ($t < 1$), and most importantly, the predicted interaction of self-overlap by altruism importance on willingness to donate ($\beta = .39$; $t(268) = 2.29$, $p = .023$, $r = .14$).

We used the Johnson-Neyman technique for identifying regions in

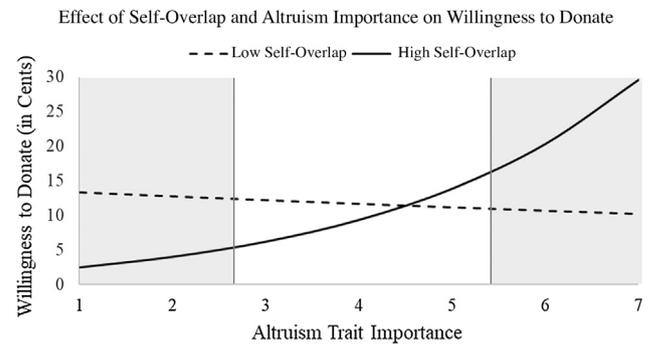


Fig. 3. Amount donated to charity as a function of self-overlap and altruism importance (shaded areas represent regions of significance for the effect of self-overlap on willingness to donate).

the range of the moderator variable (altruism importance) in which the effect of the independent variable (self-overlap) on the dependent variable (willingness to donate) is significant (Hayes & Matthes, 2009; Johnson & Neyman, 1936; Spiller et al., 2013). Results showed the effect of self-overlap on willingness to donate was statistically significant for all values of the altruism importance moderator below 2.69 (-1.29 SD from the mean) and above 5.39 ($+.40$ SD from the mean; shaded area in Fig. 3). Specifically, for values of altruism importance above 5.39, we replicated our previous findings: participants high in self-overlap donated significantly more of their compensation than participants low in self-overlap. By contrast, for values of altruism importance below 2.69, participants high in self-overlap donated significantly less than participants low in self-overlap. This reversal suggests that at lower levels of altruism importance, participants might actually value selfishness, such that keeping their compensation rather than donating it would have allowed them to signal this valued characteristic to themselves. We display these results in Fig. 3 using the untransformed donation amounts (in cents).

Finally, an analysis within the overlap conditions indicated that for participants high in self-overlap, the greater the importance assigned to being altruistic, the more of their compensation they donated ($\beta = .24$; $t(135) = 2.93$, $p = .004$, $r = .17$), whereas for those low in self-overlap, altruism importance had no effect on their willingness to donate ($\beta = -.03$; $t < 1$). Taken together, these results showed participants high (vs. low) in self-overlap were more likely to behave in accordance with the degree of importance they assign to the context-relevant moral characteristic of altruism, which supported the notion that high (vs. low) self-overlap increases the perceived self-diagnostics of actions.

11. General discussion

The present article shows people high (vs. low) in self-overlap are more likely to behave morally because they tend to see their actions as more self-diagnostic. Using a computerized version of Linville's (1985) trait-sorting task and computation methods from Rafaeli-Mor et al. (1999), we first measured self-overlap to demonstrate a positive relationship between chronic self-overlap and moral decision-making (Study 1), and show the mediating role of perceptions of self-diagnostics in this relationship (Study 2). Next, using an experimental manipulation of self-overlap, which made people think of themselves as having separate/distinct self-aspects or connected/similar self-aspects, Study 3 replicated the effect of self-overlap on moral decision-making (Study 3A) and provided evidence of the inferential process linking high (vs. low) self-overlap to greater perceptions of self-diagnostics (Study 3B). The next two studies used a different manipulation of self-overlap, relying on the notion of motivated reasoning, to encourage people to think of themselves as high or low in self-overlap. We found when people thought of themselves as high (vs. low) in self-overlap, they were less likely to misreport the outcome of a coin flip (Study 4)

for financial gain.

In the last two studies, we further explored our proposed underlying mechanism. Study 5 demonstrated the moderating role of self-signal strength, that is, the meaning of actions for the self-concept. The study shows people high (vs. low) in self-overlap were more likely to donate to charity when the inference from such a behavior was clearly positive. However, when the self-signal from donating was ambiguous or weak, people high in self-overlap were no more prosocial than those low in self-overlap. Further demonstrating their sensitivity to the meaning of their actions, people high in overlap were more likely to donate when the self-signal was strong and clear (vs. weak and ambiguous). By contrast, self-signal strength made no difference in the donation tendencies of people low in self-overlap. Finally, Study 6 showed the moderating role of the extent to which people value the context-relevant moral characteristic (in this case, altruism). We replicated the effect of self-overlap on moral behavior (charitable giving) for people who value being altruistic and we documented a reversal for people who consider altruism unimportant. Further demonstrating their greater perceptions of self-diagnostics, we showed that for people high in self-overlap, the extent to which they valued altruism predicted their donation amounts. By contrast, altruism importance had no effect on the willingness to donate of people low in self-overlap. Taken together, the studies reported here show self-overlap is an important driver of moral behavior because it influences people's tendency to view their actions as self-diagnostic.

11.1. Theoretical implications

Drawing from the results of [Rafaeli-Mor et al. \(1999\)](#) supporting the benefits of distinguishing between the components of the self-structure (number of self-aspect and self-overlap), our findings highlight the unique effect of self-overlap in the context of moral decision-making. These findings have implications for the literature on self-diagnostics and self-signaling. Prior to the present research, situational factors had been identified that alter perceptions of self-diagnostics, and hence elicit self-signaling behaviors ([Ariely & Norton, 2008](#); [Bryan et al., 2013](#); [Bryan et al., 2011](#); [Dhar & Wertenbroch, 2012](#); [Prelec & Bodner, 2003](#); [Savary et al., 2015](#); [Touré-Tillery & Fishbach, 2012, 2015](#)). The current findings show that internal processes, such as people's structural representations of their self-concept, can also influence perceptions of self-diagnostics, and hence moral behavior—both chronically and situationally. We find the structure of the self matters for how people manage the content of the self: the more overlapping the structure, the more concerned people are with self-signaling desirable traits and characteristics. A potentially interesting consequence of the link between self-structure and content is that after engaging in “bad” behaviors (e.g. cheating), people might adjust the organization of their self-aspect (i.e., perceptions of self-overlap) to cope with the negative implications of such behaviors and maintain a positive self-concept. Future research could dive deeper into this possibility.

Although we have explored these patterns of behavior in the context of moral behavior, we expect people high (vs. low) in self-overlap will

A. Online instructions for trait-sorting task (studies 1 and 2, and Posttests for studies 3A and 4)

A.1. How do you describe yourself?

In this task, we are interested in how you describe yourself...

You will be presented with a series of terms. Each term is the name of a trait or characteristic. Your task is to form groups of traits that go together, where each group of traits describes an aspect of you or your life.

You may select the traits into groups on any meaningful basis, but remember to think about yourself while doing this. Each group of traits might represent a different aspect of yourself. Form as many or as few groups as you desire. Continue forming groups until you feel that you have formed the important ones. We realize that this task could be endless, but we want only what you feel is meaningful to you. When you feel that you are straining to form more groups, it is probably a good time to stop.

In order to form a group...

First, you will give a name to the group to indicate the aspect of yourself you are describing. Next, you will select traits that describe this aspect of

be generally more likely to engage in most “virtuous behaviors” or any other behaviors performed at least in part to signal something positive to the self—unless clear cues of non-diagnostics are present. For example, we might expect people high (vs. low) in self-overlap to make healthier food choices or sounder financial decisions, assuming they view such behaviors as indicative of a positive self-concept (see [Dhar & Wertenbroch, 2012](#); [Touré-Tillery & Fishbach, 2012](#)). Finally, if perceptions of self-overlap can influence the extent to which people believe their actions can hurt their overall mental representation of themselves, it is possible such perceptions can also influence the extent to which people believe their actions can hurt their actual physical selves. Thus, future research might explore whether people high (vs. low) in self-overlap are less likely to engage in risky behaviors (e.g., extreme sports) because they believe their overall physical body will be more endangered by the negative consequences of such actions.

11.2. Practical implications

We find dispositional and situational self-overlap influence important moral behaviors, such as cheating, lying, and donating money to charity. These findings have practical implications for managers, public-policy makers, and social marketers. Many companies institute family-friendly benefits (e.g., working from home, daycare on the premises) and practices such as casual apparel in the workplace (e.g., casual Friday) in an effort to energize employees by making them feel more at home ([Woodard, 1999](#); [Ross, 2009](#)). Furthermore, research shows the extent to which employees perceived their work-organization as family-supportive—that is, valuing the integration of employees' work and family/personal lives—predicts job satisfaction, and organizational commitment ([Allen, 2001](#)). Our findings suggest that, in addition to simplifying employees' lives (buying less formal clothes, not commuting to work), such practices could promote ethical behavior in the work place by breaking the barriers and increasing the overlap between employees' work selves and their personal/family selves.

Within a similar perspective, through the use of social media (e.g., Facebook, Instagram, Google circles, Pinterest, Linked In) and other modern technologies (e.g., video-calls) situational cues might increase or decrease perceptions of self-overlap. Indeed, one can easily be at work while simultaneously engaging with friends and family members on social media, and vice versa. On the one hand, by allowing people to be in multiple (virtual) places and social roles at any given point in time, modern technology and social media might lead to a merging of the various aspects of their lives, and hence decrease self-overlap. On the other hand, many social-media sites allow users to create multiple social groups, and present a different aspect of the self to each of these groups. These options might decrease the overlap between self-aspects by highlighting the distinction between a person's various personas. Future research could investigate how such social-media practices influence the temporary and chronic overlap between self-aspects. For now, our findings highlight the positive moral consequences of perceiving the self as having overlapping aspects, and hence no self to spare.

yourself, by clicking on them. If you wish to remove a trait, just click on it again to unselect it.

Each group may contain as few or as many traits as you wish. You do not have to use every trait, only those that you feel are descriptive of you. Also, each trait may be used in more than one group; so you may keep reusing traits as many times as you like. For example, you may find that you want to use the trait “relaxed” in several groups.

After creating a group...

Click “CONTINUE” to create another group. You will not be able to go back to the previous group, so make sure you have selected all relevant traits for each group before proceeding.

The order in which you record the groups is not important. We are only interested in which traits you put together. When you are done creating all your groups, click “Exit” to stop.

A few things to keep in mind...

As you are doing the task, remember that you are describing YOURSELF in this task, not people in general. You do not have to use all of the traits, and you may reuse a trait in several groups.

This task should take between 15 and 20 min. Your responses are strictly anonymous and confidential. So be as honest as you can.

Once you are ready, press the arrow button to begin.

Thank you for your attention.

B. List of traits used in trait-sorting task (studies 1 and 2, and Posttests for studies 3A and 4)

1. Affectionate
2. Anxious
3. Assertive
4. Competitive
5. Conformist
6. Emotional
7. Humorous
8. Imaginative
9. Impulsive
10. Individualistic
11. Industrious
12. Insecure
13. Irresponsible
14. Lazy
15. Mature
16. Not Studious
17. Organized
18. Outgoing
19. Playful
20. Quiet
21. Rebellious
22. Reckless
23. Reflective
24. Relaxed
25. Reserved
26. Rude
27. Shallow
28. Soft Hearted
29. Sophisticated
30. Studious
31. Unconventional
32. Unfriendly
33. Unorganized

C. Instruction-comprehension check (*) and filler questions presented after trait-sorting task (studies 1 and 2, and Posttests for studies 3A and 4)

Please indicate whether you AGREE or DISAGREE with the following statements about the task you just completed:

1. The purpose of the task was to describe people in general (*)
2. The task was FUN
3. The instructions were difficult to understand
4. I applied myself at the task

D. Moral decisions used in study 1

Please read each of the brief scenarios below and indicate how likely you would be to engage in the behavior described (1 = *Absolutely not*, 2 = *Probably not*, 3 = *I'm not sure*, 4 = *Probably yes*, 5 = *Absolutely yes*)

1. You are running late for an appointment, when someone approaches you to ask for directions to a location you know. Would you stop to give directions to this person?
2. While you are shopping at your local mall, representatives of a charitable organization approach you to solicit a donation. Would you give money to the charity?
3. While you are taking a walk downtown, a homeless person asks you for money. Would you give money to this homeless person?
4. A local non-profit organization is conducting a food and clothing drive in your town. Would you donate goods or clothes to this charity?
5. A local animal shelter is in need of volunteers to help take care of pets in need. Would you do volunteer work for this charity?
6. Your work place or school is organizing a blood drive. Would you donate blood?
7. In the parking lot of a grocery store, an elderly person seems to be struggling to carry her grocery bags. Would you help this person carry her groceries to her car?
8. You are standing in line at a grocery store with a full cart, when someone joins the line behind you with just one item. Would you allow this person to go ahead of you in the line?

E. Moral decisions used in studies 2 and 3A

Please read each of the brief scenarios below and indicate how likely you would be to engage in the behavior described (1 = *Absolutely not*, 2 = *Probably not*, 3 = *I'm not sure*, 4 = *Probably yes*, 5 = *Absolutely yes*)

1. Your work place has supplies that can be quite useful at home. Would you use these work supplies for your own personal purposes?
2. You bought a shirt from a store and wore it to an event, but now you realize that you will probably never wear it again. Would you return it for a full refund?
3. You find money on the floor in a public space. Would you ask around to find the person who dropped it?
4. After buying something at a store, you realize that the cashier gave you extra change. Would you return the extra money?
5. You accidentally hit a dog with your car. Would you stop to check on the dog?
6. You accidentally break merchandise in a store. Would you report it to the store employees?
7. You have no internet connection at home, and you notice that your neighbor's wireless internet is not password-protected. Would you use it?
8. You accidentally gain access to a buffet without having paid for it. Would you eat the food at a buffet?
9. You borrowed money from someone a while ago, and the person seems to have forgotten all about it. Would you remind the person that you owe them money?
10. After buying something at a store, you realize that you walked out with another item for which you did not pay. Would you return the item you accidentally took from the store?
11. Your co-worker gets blamed for something you did. No one knows that you did it; not even your co-worker. Would you confess that it was you and not your co-worker?
12. You accidentally hit a parked car while pulling out of a tight parking spot. Would you leave a note with your contact information on the parked car?

F. Development of the seven-item self-diagnostics scale (SDS)

We define self-diagnostics as a propensity to see one's actions/decisions/choices as a strong indication of one's nature or characteristics (e.g., traits, personality, preferences, morality)—that is, as serving to identify or characterize the self, whether or not others are present. Self-diagnostics determines the extent to which individuals engage in self-signaling. People high in self-diagnostics see their actions as telling of the type of person they are and therefore act in ways that allow them to maintain a desired self-concept. People low in self-diagnostics do not see their actions as telling of the type of person they are and therefore are less likely to engage in self-signaling behaviors.

We developed the SDS in accordance with Hinkin's (1998) tutorial on the development of measures for use in survey questionnaires. We generated 25 items for a preliminary version of the self-diagnostics scale (SDS) by first identifying four relevant categories (Table A1). The first two categories corresponded to key aspects of the self-diagnostics process: the extent to which people believe their own observable actions reflect their own internal states, traits and characteristics (diagnostics for self; see also Savary & Goldsmith, 2017), and the extent to which people consciously engage in this inferential process (inference). The third category consisted of items measuring self- and social-signaling tendencies. The fourth category measured the extent to which people believe the actions of others reflect others' internal states, traits and characteristics (diagnostics for others). All items were rated on a 1 (Strongly disagree) to 7 (Strongly agree) Likert scale.

F.1 Step 1: Creating the Seven-item SDS

One hundred and forty-eight participants (63 female, $M_{age} = 33.86$; $SD_{age} = 10.47$) recruited from Amazon's Mechanical Turk, and who had signed up to take two studies, completed the SDS followed by an unrelated study—bundled together for efficiency's sake. A factor analysis (principal-factors component with Varimax rotation) on all 25 items revealed six factors with eigenvalues ranging from 1.03 to 7.89, and with a cumulative proportion of variance explained equal to 63.14%. Although the six- and five-factor solutions were very similar, the five-factor solution produced factors that were more meaningful, so we retained five factors. From the rotated factor loadings, the first factor represented the extent to which people believe actions reflect internal states for the self and for people in general (items 1, 2, 4, 6, 9, 20, 21, 22, 24). The second factor corresponded to self-signaling tendencies (items 11, 12, 14, 15). The third factor represented how people interpret positive/good deeds for the self-concept (items 3, 5, 7, 19), while the fourth factor broadly represented social-signaling tendencies (items 8, 13, 16, 18). Finally, the fifth factor included all remaining negatively worded questions (items 10, 17, 23, 25). The first factor was most in line with our conceptualization of self-diagnostics, and hence formed the foundation for our self-diagnostics scale (SDS). To simplify the SDS and ensure that it was explicitly self-focused, we retained the self-focused items under this factor and converted the other-focused items to focus on the self (items 20, 22). We excluded two redundant items (items 9 and 24) that used similar phrasing as two retained items (items 4 and 2 respectively). The resulting shorter SDS consisted of seven self-focused items (Table A2)

Table A1
Preliminary Items for the SDS (**negatively worded).

1. What I do says a lot about who I am (diagnosticity for self)
2. The choices I make reflect my inner goals and values (diagnosticity for self)
3. Doing good things means to me that I am a good person (diagnosticity for self)
4. My actions are an indication of my personality (diagnosticity for self)
5. When I see myself smiling, I know I am happy (diagnosticity for self)
6. My choices tell me a great deal about what I like (diagnosticity for self)
7. I interpret my good deeds as a sign that I am good person (diagnosticity for self)
8. When I do something bad, I often take it as a sign that I might have some negative aspects to my personality (inference)
9. I tend to use my actions as an indication of the type of person I am (inference)
10. I never think about the things I do as an indication of who I am (**) (inference)
11. I care a lot about my own opinion of myself (inference)
12. I never want to disappoint myself (self-signaling)
13. Other people's opinions of me is what matters most (social-signaling)
14. I often pat myself on the back (self-signaling)
15. Sometimes I do thing just so I can be proud of myself (self-signaling)
16. I only worry about what I am doing when there is someone else around (social-signaling)
17. I often scold myself for not meeting my own standards (self-signaling)
18. I don't care what other people think of me (**)(social-signaling)
19. I do good things to show to myself that I am a good person (self-signaling)
20. What people do reflects who they are (diagnosticity for others)
21. People's actions can tell you a lot about their character (diagnosticity for others)
22. There is a strong link between people's actions and their personality (diagnosticity for others)
23. A person's preferences and actual choices are rarely connected (**)(diagnosticity for others)
24. You can learn about a person's values and goals from his or her actions (diagnosticity for others)
25. You cannot judge a person by his or her actions alone (**)(diagnosticity for others)

F.2 Step 2: comparing the SDS with other self-knowledge constructs

Our next step was to explore the unique convergent and predictive validity of the SDS compared with other constructs that focus on self-knowledge: self-concept clarity (Campbell et al., 1996) and authenticity (Wood, Linley, Maltby, Baliouis, & Joseph, 2008). We tested the effect of these measures on whether people would expect to feel bad after making unethical decisions. Whereas self-concept clarity (SCC) measures whether a person knows herself, authenticity measures whether a person not only knows herself, but also acts accordingly. By contrast, self-diagnosticity measures whether a person feels her actions inform her knowledge of herself—that is extent to which a person draws inferences about herself from her actions. We anticipated self-diagnosticity would be positively correlated with self-concept clarity and authenticity, but distinct. Because most people are motivated to see themselves in a positive light, we expected these three measures to predict negative feelings after moral transgressions. However, we expected the SDS to assess a unique self-inferential process, and hence to predict negative feelings after unethical decisions even after controlling for SCC and authenticity.

Six hundred and two U.S. participants (271 female; $M_{\text{age}} = 35.37$, $SD_{\text{age}} = 11.47$) recruited through Amazon's Mechanical Turk completed this survey online in return for \$1.00. Participants completed the seven-item SDS, the 12-item SCC scale, the 12-item authenticity scale, and a 12-scenario measure of negative feelings after unethical decisions ($\alpha = .88$). For the SDS, the SCC scale and the authenticity scale, participants' instructions were to indicate their level of agreement or disagreement with each of the statements presented (1 = *Strongly disagree*; 7 = *Strongly agree*). For the SDS, they read the following additional instructions: "When answering these questions, please consider yourself in both public and private situations, whether you are alone or in the presence of others." The 12-scenario measure of negative feelings after unethical decisions was adapted from the scenarios used in Study 2 of the main manuscript (see Table A3). For each item, participants read about facing an everyday ethical dilemma (e.g., "You find money on the floor in a public space") and indicated how bad they would feel if they engaged in the unethical behavior described (e.g., "If you did not bother to ask around to find the person who dropped it, would you feel bad about it?" (1 = *Absolutely not*; 2 = *Probably not*; 3 = *I'm not sure*; 4 = *Probably yes*; 5 = *Absolutely yes*). These four questionnaires (SDS, SCC, authenticity, negative feelings after unethical decisions) appeared in random order.

First, we confirmed that the seven SDS items formed a reliable scale: $\alpha = .93$. Furthermore, a confirmatory factor analysis on these items (principal-factors component with Varimax rotation) revealed only one factor with an eigenvalue of 4.93 and a cumulative proportion of variance explained of 70.37%. The reliabilities of the SCC and authenticity scales were $\alpha = .85$ and $\alpha = .62$, respectively. Second, to establish convergent validity of the measure, we looked at the correlations between the SDS, the SCC scale, and the authenticity scale. As predicted, we found the SDS shared weak to moderate correlations with SCC ($r = .39$, $p < .001$) and authenticity ($r = .49$, $p < .001$) indicating it shares meaningful variance

Table A2
Seven-item SDS.

1. What I do says a lot about who I am (1)
2. The choices I make reflect my inner goals and values (2)
3. My actions are an indication of my personality (4)
4. My choices tell me a great deal about what I like (6)
5. There is a strong link between my actions and my personality (22)
6. What I do is a reflection of who I am (20)
7. My actions are very telling of my character (21)

Table A3
Scenarios measuring negative feelings after unethical decisions.

1. Your work place has supplies that can be quite useful at home. If you used these work supplies for your own personal purposes, would you feel bad about it?
2. You bought a shirt from a store and wore it to an event, but now you realize that you will probably never wear it again. If you returned it for a full refund, would you feel bad about it?
3. You find money on the floor in a public space. If you did not bother to ask around to find the person who dropped it, would you feel bad about it?
4. After buying something at a store, you realize that the cashier gave you extra change. If you kept the extra money for yourself, would you feel bad about it?
5. You accidentally hit a dog with your car. If you continued to drive away without checking on the dog, would you feel bad about it?
6. You accidentally break merchandise in a store. If you did not report it to the store employees, would you feel bad about it?
7. You have no internet connection at home, and you notice that your neighbor's wireless internet is not password-protected. If you used it, would you feel bad about it?
8. You accidentally gain access to a buffet without having paid for it. If you stayed and ate the food at a buffet, would you feel bad about it?
9. You borrowed money from someone a while ago, and the person seems to have forgotten all about it. If you did not remind the person that you owe them money, would you feel bad about it?
10. After buying something at a store, you realize that you walked out with another item for which you did not pay. If you decided to keep the item your accidentally took from the store, would you feel bad about it?
11. Your co-worker gets blamed for something you did. No one knows that you did it; not even your co-worker. If you continued to let people think it that was your co-worker and not you, would you feel bad about it?
12. You accidentally hit a parked car while pulling out of a tight parking spot. If you drove off without leaving a note with your contact information on the parked car, would you feel bad about it?

with these approaches to assessing self-knowledge, but not to the point of redundancy. Third, we examined the effect of the SDS, SCC and authenticity on negative feelings after unethical decisions. When used as a single predictor in a regression on negative feelings after unethical decisions, the SDS ($\beta = .24$, $t(600) = 6.14$, $p < .001$), SCC ($\beta = .14$, $t(600) = 3.35$, $p = .001$) and authenticity ($\beta = .15$, $t(600) = 3.70$, $p < .001$) each had a positive effect on this measure. However, when all three measure of self-knowledge were used to predict negative feelings after unethical decisions, only the SDS remained significant ($\beta = .22$, $t(598) = 4.90$, $p < .001$). SCC and authenticity no longer had an effect on negative feelings after unethical decisions ($t_s < 1$), suggesting the SDS captures a self-inferential dimension of self-knowledge for which neither the SCC scale nor the authenticity scale account.

F.3 Step 3: assessing the SDS's test-retest reliability

Finally, to examine the test-retest reliability of the SDS, we administered the scale to a subset of the participants from Step 2 above. Twenty-four days after the Step 2 survey, we used TurkPrime to post the retest study on MTurk such that only those who qualified could see and access it. In two days, we recruited 399 participants ($M_{age} = 35.85$, $SD_{age} = 11.38$), who completed the survey in return for monetary compensation (\$1.00). These participants completed the same seven SDS items as in Step 2 followed by a demographic questionnaire. Thus for each participant, we had their scores on the SDS at time 1 from Step 2 (SDS_1 ; $\alpha = .93$) and at time 2 from the present survey (SDS_2 ; $\alpha = .93$). We found a strong correlation between SDS_1 and SDS_2 ($r = .65$, $p < .001$), suggesting perceptions of self-diagnostics measured using the SDS are quite stable over time. A confirmatory factor analysis on the seven items of SDS_2 (principal-factors component with Varimax rotation) revealed only one factor with an eigenvalue of 4.96 and a cumulative proportion of variance explained of 70.8%.

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