Cogs in the machine: The prioritization of money and self-dehumanization

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ABSTRACT

The dehumanization of other people is an unfortunately common occurrence that drives discrimination and conflict. We examined when and why the self can also be dehumanized. Across six studies, we found a reciprocal relationship between self-dehumanization and the prioritization of money. Participants who prioritized money (vs. control participants) attributed less humanness to themselves (Studies 1–4), and in turn, chose to socially distance themselves from a coworker (Study 4). Participants led to self-humanize (vs. control participants) were less likely to prioritize money over other goals (Studies 5A-6). The human nature dimension of humanness, which refers to attributes that separate humans from inanimate objects, was more sensitive to money-prioritization than was the human uniqueness dimension, which refers to attributes that separate humans from non-human animals. Alternative explanations based on affect and self-esteem were ruled out. These results suggest that the prioritization of money is at odds with our perceptions of human nature.

1. Introduction

"The devaluation of the world of men is in direct proportion to the increasing value of the world of things. Labor produces not only commodities; it produces itself and the worker as a commodity."Marx (1844/1964)

In his seminal work, Marx warned that by prioritizing wealth, workers in capitalist societies would come to value themselves through those attributes that facilitate wealth creation (e.g., skill, productivity), to the exclusion of attributes that define their humanity, such as their emotions and sociality. He believed people themselves would become commodities—unfeeling cogs in the machine of wealth creation.

Despite Marx's warning, the pursuit of wealth remains a central part of organizational and daily life (Hsee, Zhang, Cai, & Zhang, 2013; Skidelsky & Skidelsky, 2012). People are working increasingly more days and longer hours to secure more income (Layard, 2005). Organizations also recognize the value of money to employees: Organizations entice and retain the best talent with competitive salaries and bonuses, and most negotiating in the workplace is done over money (Malhotra, 2014). Marx's conjecture therefore remains ever relevant. In the current research, we explore this idea through the lens of Haslam's (2006) Dual Model of Dehumanization, which distinguishes between two dimensions of humanness: human nature (what separates humans from machines) and human uniqueness (what separates humans from non-human animals). We predicted that because the values and goals

associated with money-prioritization (e.g., wealth, achievement; Schwartz, 1992) are diametrically opposed to those associated with human nature (e.g., helpfulness, sociality; Bastian & Haslam, 2010; Haslam, Bain, Douge, Lee, & Bastian, 2005), people who prioritize money will self-dehumanize by attributing less human nature to themselves—that is, they will see themselves as closer to robots or automatons. By the same values-based logic, we also predicted that self-humanization along the human nature dimension will reduce money-prioritization.

This research makes several contributions. First, we integrate insights from the largely separate literatures on dehumanization and values, extending theory in each. Given that the self is rarely the target of dehumanization research (e.g., Haslam et al., 2005; Haslam & Bain, 2007), we extend dehumanization research by identifying money-prioritization as an important antecedent of self-dehumanization. Second, we further research on the psychology of money. Research has accumulated to suggest that money can increase motivation and performance, and can undermine prosocial behavior (e.g., Benabou & Tirole, 2006; Kasser & Ryan, 1996), but has left questions of how the pursuit of money affects how people perceive *themselves* largely unexamined. Third, this research offers the first systematic investigation of whether self-humanization can shape subsequent motivations, and, relatedly, introduces self-humanization as an intervention for reducing the prioritization of money—a tendency that, when unmitigated, can be associated with harmful psychological consequences (e.g., Burroughs &

Rindfleisch, 2002; Kasser, 2003). Understanding the ways in which the self can be (de)humanized has important implications for human motivation, behavior, and well-being. These findings also have implications for managers and policy makers interested in the structure and consequences of incentive systems.

1.1. (Self-)Dehumanization

Dehumanization is a consequential social-cognitive phenomenon. Targets of dehumanization are perceived to be less worthy of empathy and moral care, legitimating acts of violence toward them (Bandura, 1999). Dehumanization also renders targets less responsible for their actions, reducing perceptions of their competence and moral accountability (Waytz, Epley, & Cacioppo, 2010). To understand dehumanization, it is important to first have a clear understanding of "humanness"—what it means to be human. Haslam's (2006) Dual Model of Dehumanization offers such a framework by suggesting that there are two distinct senses of humanness: *human nature* and *human uniqueness*.[1] Human nature attributes capture the boundary that separates humans from inanimate objects, such as robots (e.g., warmth, emotionality). When human nature attributes are denied to people, they are likened to objects or machines, and seen as cold, rigid, and lacking emotion. This "mechanistic" dehumanization has been evident in the dehumanization of medical patients (Haque & Waytz, 2012; Vaes & Muratone, 2013), sexualized women (Heflick & Goldenberg, 2009), and members of certain occupational groups (e.g., businesspeople; Loughnan & Haslam, 2007). Human uniqueness attributes capture the boundary that separates humans from animals (e.g., refinement, self-control, intelligence). When human uniqueness attributes are denied to people, they are likened to animals, and seen as childlike, immature, or irrational. This "animalistic" dehumanization has been demonstrated in intergroup conflict and for members of stigmatized ethnic groups (e.g., Viki et al., 2006). This two-factor model of humanness has substantial empirical support (Haslam, 2006; for a review, see Haslam & Loughnan, 2014). These two dimensions are empirically distinguishable, differentially predict mechanistic and animalistic dehumanization, and are stable across cultures (Bain, Vaes, Kashima, Haslam, & Guan, 2012; Haslam et al., 2005; Loughnan & Haslam, 2007; Park, Haslam, Shimizu, Kashima, & Uchida, 2013).

However, dehumanization research has primarily been in the context of the dehumanization of others. Research on the dehumanization of the self, or self-dehumanization, is much less prevalent. Investigations of self-dehumanization have, to date, examined how negatively valenced experiences, such as social exclusion and committing acts of violence or unethical behavior, can lead to self-dehumanization (Bastian & Haslam, 2010; Bastian et al., 2013; Kouchaki, Dobson, Waytz, & Kteily, 2018). For instance, one investigation of the consequences of self-dehumanization found that reading about or recalling interpersonal maltreatments was associated with self-dehumanization and, in turn, with cognitive deconstructive states, such as reduced clarity of thought, as well as feelings of anger and sadness (Bastian & Haslam, 2011). Given the detrimental psychological consequences of (self)dehumanization (Bastian & Haslam, 2011; Haslam & Loughnan, 2014), it is important to build our understanding of when and why people self-dehumanize. In the current research, we contribute to the

nascent self-dehumanization literature by exploring how money-prioritization—a relatively commonplace and culturally valued pursuit (Lamont, 1992)—could serve as an antecedent of self-dehumanization. Furthermore, we investigate the consequences of self-dehumanization on people's emotional reactions and their willingness to socially connect to others in a coworking context.

1.2. The psychology of money and money prioritization

The past two decades have seen increased empirical attention to the psychology of money, specifically to the effects of cognitive money primes. In these studies, participants are subtly exposed to money or a symbolic representation of money (e.g., a screensaver with dollar bills) and the influence of these money primes on downstream cognitions and behaviors is examined. These studies have found that, compared to control participants, participants primed with money were more persistent in tasks, but preferred a solitary activity over a group activity, were less helpful, and engaged in more unethical behavior (e.g., Boucher & Kofos, 2012; Kouchaki, Smith-Crowe, Brief, & Sousa, 2013; Vohs, Mead, & Goode, 2006; though see Caruso, Shapira, & Landy, 2017; Rohrer, Pashler, & Harris, 2015). In sum, money priming seems to have desirable performance effects but undesirable interpersonal effects. Explanations for money priming effects have suggested that people mentally associated money with economic and business ideals that emphasize self-interest (Kouchaki et al., 2013; Vohs, 2015), and with self-sufficiency, or independence from others and agency (Vohs et al., 2006).

In a departure from this previous work, the current investigation focuses on *money-prioritization,* which we define as the self-perception of prioritizing money and money-related goals, such as wealth accumulation, over other potential goals.[2] Whereas money primes operate via the enhanced accessibility of semantic constructs related to money, money prioritization operates via people's perceptions of their own personal values. In other words, whereas a money prime might prompt people to think about the concept of money, money prioritization prompts people to think about how much they personally value money, and pursue money-related goals over other goals. Although it is the case that money-prioritization could increase the cognitive accessibility of money-related concepts and, thus, serve as a money prime, it is not necessarily the case that a money prime (such as viewing a picture of money) would prompt money prioritization, as the money prime does not imply anything about how much the perceiver values money or would be willing to prioritize money-related goals over other things. A growing literature suggests that goals imbued with personal relevance (or associated with the self) are particularly predictive of behavior (Wheeler, DeMarree, & Petty, 2005, 2007). For example, Pfeffer and DeVoe (2009) examined this idea in the context of the economic evaluation of time. Research on the economic evaluation of time has found that when people evaluate time in terms of money, they devalue uncompensated activities, such as volunteering (e.g., DeVoe & Pfeffer, 2007). These authors found that participants explicitly primed to think about their own time in terms of money were indeed less likely to volunteer, but thinking about another's time in terms of money had no effect. When people said not just "time is money," but "*my* time is *my* money," they were much more likely to avoid an activity that would impede their goal of accumulating money. These results suggest the important role of the self-concept in the impact of goals on behavior.

Building upon the importance of the self in guiding action, we focus on the perception that the self prioritizes money or wealth goals over other potential goals. People construct and pursue goals that reflect what they value (Schwartz, 1992). The prioritization of any one goal

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[1] Gray, Gray, and Wegner (2007) offer a parallel conceptualization of dehumanization, which focuses on the attribution or denial of two dimensions of mind perception: agency and experience (which themselves conceptually overlap with the two primary dimensions of social perception, competence and warmth, respectively, see Waytz & Norton, 2014). Here, we explore perceptions of humanness using Haslam et al. (2005) framework, while noting overlap between Human Uniqueness and Gray et al.'s "agency" dimension, which includes mental capacities such as self-control and thinking, as well as overlap between Human Nature and the "experience" dimension, which includes attributes such as personality and emotion.

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[2] Money-prioritization fits under the larger umbrella of extrinsic goals (e.g., financial success, image; Grouzet et al., 2005) though we confine our analyses to money-prioritization in the current paper.

(and its associated values), entails the de-prioritization of other goals (and their associated values), and goal prioritization has important implications for how people perceive and evaluate themselves. Thus, we expect that money-prioritization (as a form of goal prioritization) will have direct repercussions for the organization of people's goals and values, which will, in turn, have consequences for other self-perceptions. To understand how money-prioritization might influence people's perceptions of their own humanness, we used Schwartz's circumplex model of human goals and values to guide our predictions (Grouzet et al., 2005; Schwartz, 1992, 1996).[3]

1.3. Money-prioritization and self-dehumanization: A reciprocal relationship

Schwartz's circumplex model proposes that people are motivated by four overarching categories of values, and that these value-categories have complementary, antagonistic, or orthogonal relationships with each other. Relevant to the current research, *self-enhancement* values that promote the self (e.g., power, wealth, achievement) have an antagonistic relationship with *self-transcendent* values that consider the welfare of others (e.g., benevolence, universalism). Consequently, invoking one self-enhancement value (e.g., power) is suggested to facilitate behaviors and cognitions associated with other, complementary self-enhancement values (e.g., achievement), but inhibit those associated with antagonistic self-transcendent values (e.g., benevolence) (Maio, 2010). A set of experiments by Maio and colleagues provides support for this theorizing (Maio, Pakizeh, Cheung, & Rees, 2009). In one study, either participants' achievement values (e.g., successful, ambitious) or benevolence values (e.g., helpful, loyal) were activated. When their achievement values were activated, participants were subsequently more likely to successfully solve puzzles, but were less likely to demonstrate helpfulness to an experimenter. By contrast, activating benevolence values decreased puzzle success and increased helpfulness.

We argue that the values associated with money-prioritization and human nature share considerable overlap with the antagonistic values categories of self-enhancement and self-transcendence, respectively. First, the goals associated with money, such as wealth and status, map onto the goals associated with self-enhancement such as achievement, influence, and authority. For example, priming people with money increases self-focus, productivity, and achievement (Mogilner, 2010; Vohs et al., 2006). Although the pursuit of money may sometimes be associated with self-transcendence (as when someone seeks to make more money so that they can give to charity), evidence suggests that, much of the time, the pursuit of money will be associated with self-enhancement goals (e.g., Burroughs & Rindfleisch, 2002; Gino & Pierce, 2009; Kasser & Ryan, 1993, 1996). Second, human nature is associated with attributes such as active, curious, helpful, and warm (Haslam, 2006), which broadly constitute emotionality and interconnectedness goals. This maps onto the goals associated with self-transcendence values such as affiliation, community feeling, fun, and helpfulness. This mapping suggests that, in general, invoking money goals should

suppress the accessibility of human nature goals. By the same logic, reflecting on one's human nature should inhibit the accessibility of concepts associated with money goals. The antagonistic nature of these values forms the two central predictions in our research, that (1) prioritizing money reduces self-attributions of human nature (i.e., increases mechanistic self-dehumanization) and that (2) self-attributing human nature reduces the prioritization of money.

Research demonstrating that people dehumanize *others* who prioritize money provides convergent support for our predictions. Person perception research suggests that the distinct categories and behaviors associated with the money-prioritization are associated with the denial of human nature attributes. People attribute high competence, but low warmth and sociability to groups associated with monetary-pursuits (e.g., business people, CEOs, and professionals) (Fiske, Cuddy, Glick, & Xu, 2002) —the same attributions made for robots and automatons (Waytz & Norton, 2014). Likewise, Loughnan and Haslam (2007) found that the social category of businesspeople, a group stereotyped as lacking human nature traits such as emotionality and openness, had strong implicit associations with robots, suggesting mechanistic dehumanization. Given that people often use their own behaviors to make attributions about themselves (Bem, 1972), people may similarly view money-prioritization as antagonistic with human nature when perceiving the self.

In contrast to human nature, human uniqueness captures the distinction between humans and non-human animals, i.e., animalistic dehumanization. Animalistic dehumanization denies targets higher order cognitive capabilities such as the ability to imagine and make predictions about the future, to construct complex recollections of the past, to consider the perspectives of others, and to understand complex emotions. Although some human uniqueness attributes do map onto Schwartz' values, such as *achievement* (i.e., capable, intelligent) and *tradition* (i.e., politeness, self-discipline), this mapping is not straightforwardly antagonistic or complementary to self-enhancement values, e.g., achievement is a self-enhancement value and tradition is a conservation and self-transcendence value. Given this, we expected money-prioritization to have minimal influence, if any, on the denial of human uniqueness attributes and we expected that reflecting on human uniqueness would minimally, if at all, influence money-prioritization.

Based on the above theorizing, we hypothesized the following:

Hypothesis 1. The prioritization of money reduces self-attributions of human nature (i.e., mechanistic self-dehumanization), but not self-attributions of human uniqueness (i.e., animalistic self-dehumanization).

Hypothesis 2. The self-attribution of human nature (i.e., self-humanization), but not the self-attribution of human uniqueness, reduces the prioritization of money.

2. The current research

We conducted six studies to test our hypotheses. In Studies 1 through 4, we examined whether people who prioritized money over other goals were more likely to demonstrate self-dehumanization, while seeking to rule out alternative explanations. Study 4 further explored a behavioral consequence of the money prioritization-self-dehumanization link, testing whether participants high (vs. low) in money-prioritization would choose to socially distance themselves from a prospective coworker. After exploring the relationship between money-prioritization and self-dehumanization, Studies 5–6 tested whether self-humanization reduces money-prioritization. In Study 5A, we leveraged people's natural reactions to a self-humanization manipulation to examine whether self-humanizing along the human nature dimension would reduce money-prioritization. In Study 5B, we tested whether participants randomly assigned to self-humanize along the human nature dimension would demonstrate reduced money-prioritization

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[3] Values are abstract ideals that people consider important, that guide behavior, and that are prioritized (Schwartz, 1992). Goals are cognitive representations of desired end-states (Fishbach & Ferguson, 2007). While goals and values are distinct constructs with distinct histories in psychology, prominent theories of structure of values and goals (i.e., Schwartz's values wheel and Grouzet's model of personal goals, respectively) propose that the relationships between the primary human values and personal goals contain considerable overlap (Maio et al., 2009). For instance, if one considers wealth a high-priority value, this abstract desire might prompt lower-level goal pursuit in the service of attaining wealth (Kruglanski, Shah, Fishbach, Friedman, Chun, & Sleeth-Keppler, 2002). Given that the structure of values and goals systems share considerable overlap and that they often motivate behavior in concurrent ways, we integrate prior theorizing on goals and values to derive our hypotheses (e.g., Maio et al., 2009).

compared to participants assigned to self-humanize along the human uniqueness dimensions (or a control condition). Study 6 then extended these results to a downstream consequence, testing whether self-humanization reduces negative reactions to money-related goal frustration (e.g., Berkowitz, 1989). Across studies, we determined our sample size with a rule-of-thumb of at least 50 participants per condition (Simmons, 2014), unless otherwise noted. For all experiments, we have reported all dependent measures, conditions, and data exclusions. See https://osf.io/wd8s3 for supplemental online materials.

3. Study 1

Study 1 tested whether money-prioritization predicts self-dehumanization. We manipulated money-prioritization using a false-feedback paradigm and measured self-attributions of humanness. Given that self-esteem is related to both money-prioritization (e.g., Park & John, 2011), and self-humanization (Locke, 2009), it is possible that the proposed relationship between money-prioritization and self-dehumanization could be driven by differences in self-esteem. We therefore also examined whether money-prioritization predicts self-dehumanization independent of self-esteem.

3.1. Participants

We aimed for 100 participants per cell in Study 1. Therefore, we recruited 200 participants online via Amazon's Mechanical Turk. Five participants were suspicious of the feedback provided in the false-feedback paradigm, eleven failed an attention check, and two did not complete the study. These exclusion criteria were determined a priori (in this study and in all subsequent studies). All subsequent analyses were conducted on the remaining 182 participants (M_{age} = 34.3; 53% female).

3.2. Procedure

First, we manipulated participants' beliefs about how much they prioritize money using a false feedback paradigm. Participants completed eleven items said to assess their beliefs about money (e.g., "Money can solve many of life's problems"; "I work for the income it provides me"). In the *high money-prioritization condition,* participants received feedback indicating that they scored in the 79th percentile in their desire for money and were told that "79% of people are less likely to value and pursue money as a goal than you are". In the *low money-prioritization condition,* participants received feedback indicating that they scored in the 21st percentile and were told that "21% of people are less likely to value and pursue money than you are". Participants also viewed a histogram that visually depicted where they scored compared to other participants. This manipulation draws on the robust tendency for people to infer how much they prioritize a given value or goal by comparing themselves to others (Festinger, 1954; Peng, Nisbett, & Wong, 1997).

Participants then completed a measure of self-dehumanization, which was adapted from a dehumanization scale used by Bastian and Haslam (2010). The items in this scale used traits validated as rating highly and distinctively on each dimension of humanness (Haslam et al., 2005). The Self-Humanization Scale included 11 items, 5 items drawing on the qualities associated with human nature (e.g., "Right now, I feel like I am emotional, like I am responsive and warm"; "Right now, I feel robotic [*reverse-coded*]") and 6 items drawing on the qualities associated with human uniqueness (e.g., "Right now, I feel like I am sophisticated"; "Right now, I feel like I am irrational and illogical") (see Appendix A). Participants indicated their agreement with these items on a scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*). These items were combined to form measures of self-attributions of human nature (α = .76) and human uniqueness (α = .71). The two subscales were moderately correlated, r = .55, $p < .001$, indicating discriminant

validity.

To rule out the alternative explanation that prioritizing money reduces the positivity of people's global self-perceptions (i.e., self-esteem) rather than perceptions of humanness per se, we measured state global self-esteem. Participants completed 10 items assessing their state global self-esteem (e.g., Right now, I am satisfied with myself) on a scale from 1 (*Strongly disagree*) to 4 (*Strongly agree*) (Rosenberg, 1965) (α = .94).

Participants then completed a manipulation check indicating how much they prioritized money compared to other people on a scale from 1 (*Much less than others*) to 7 (*Much more than others*), and an open-ended response indicating their general reactions to their feedback on the money beliefs survey. Finally, participants completed the demographic measures and were fully debriefed.

3.3. Results and discussion

3.3.1. Manipulation check

Confirming that our manipulation was successful, participants in the high money-prioritization condition indicated that they prioritized money significantly more (M = 5.80, SD = 0.78) than did participants in the low money-prioritization condition (M = 2.49, SD = 1.11), $t(1 8 0)$ = 23.29, $p < .001$, 95% CI_{Mdiff} [3.03, 3.59], d = 3.47.

3.3.2. Humanness

A 2(money-prioritization: high, low) × 2(human dimension: nature vs. uniqueness) mixed model ANOVA revealed a main effect of human dimension, $F(1, 180)$ = 50.49, $p < .001$, η^2 = .219, such that participants attributed significantly higher levels of human uniqueness to themselves (M = 5.20, SD = 0.81) than human nature (M = 4.70, SD = 1.11), and a main effect of condition, $F(1, 180)$ = 4.56, p = .034, η^2 = .025, such that participants in the low money-prioritization condition self-attributed more humanness in general (M = 5.08, SD = 0.80) than did those in the high money-prioritization condition (M = 4.82, SD = .88). More important for our hypothesis, a significant condition × human dimension interaction emerged, $F(1, 180)$ = 5.29, p = .023, η^2 = .029 (see Fig. 1). In support of Hypothesis 1, participants in the high money-prioritization condition self-attributed less human nature (M = 4.49, SD = 1.12) than did participants in the low money-prioritization condition (M = 4.92, SD = 1.07), $t(1 8 0)$ = −2.63, p = .009, 95% CI_{Mdiff} [−.75, −.11], d = .47. Self-attributions of human uniqueness did not significantly differ between the high and low money-prioritization conditions (Ms = 5.14 and 5.25, SDs = 0.88 and 0.74, respectively), $t(1 8 0)$ = −0.88, p = .378, 95% CI_{Mdiff} [−.34, .13], d = 0.13.

Next, we tested whether the effects of money-prioritization on humanness could be accounted for by changes in state self-esteem. A t-test revealed that state self-esteem did not significantly differ between the
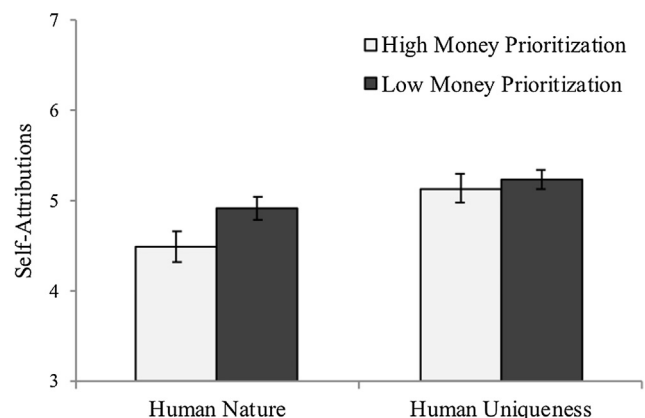

Fig. 1. The effect of money-prioritization condition on self-attributions of human nature and human uniquenss (± *SE*) in Study 1.

high and low monetary-pursuit conditions (Ms = 1.99 and 1.90, SDs = 0.71 and 0.60, respectively), $t(1\,8\,0)$ = 0.92, p = .356, 95% CI_{Mdiff} [−.10, .28], d = 0.14. Additionally, the effect of money-prioritization condition on human nature remained significant when controlling for state self-esteem, $F(1, 179)$ = 5.99, p = .015, η^2 = .032.

Study 1 therefore supported Hypothesis 1, finding that money-prioritization predicted reduced self-attributions of human nature dimension (i.e., increased mechanistic dehumanization), but not self-attributions of human uniqueness (i.e., animalistic dehumanization). Self-esteem was ruled out as an alternative explanation.

4. Study 2

Study 2 extended Study 1 in three main ways. First, the results of Study 1 could either be driven by a decrease in human nature in the high money-prioritization, or by an increase in human nature in the low money-prioritization condition (or both), and thus we added a baseline control condition in Study 2 to address this issue. Second, while we have argued that money-prioritization is distinct from the mere activation of the money concept, we added a money prime condition in Study 2 to empirically address this issue. Based on our circumplex model theorizing, we predicted that money-prioritization would be more likely to affect self-dehumanization than the mere priming of money. Third, it was possible that our manipulation of money-prioritization was confounded with perceptions of the scarcity, such that statements like "earning money should be a top priority" may signal scarcity and reduce self-attributions of human nature by increasing feelings of threat rather than the prioritization of different goals and values. To address this issue, Study 2 also assesses participants' socioeconomic status (SES) and perceptions of their own financial security (e.g., Nelson & Morrison, 2005). If our effects are driven by the threat of resource scarcity rather than the prioritization of self-enhancement goals, we should expect these effects to only emerge among participants low in SES and low in financial security. We instead predicted that our prediction would hold across the range of participant SES and financial security.

4.1. Participants

Consistent with Study 1, we aimed to recruit 100 participants per cell, and ended up with a total of 370 participants (M_{age} = 33.75; 41% women) after applying the exclusion criteria discussed in Study 1.

4.2. Procedure

Participants were randomly assigned to 1 of 4 conditions (high money-prioritization, low money-prioritization, money prime, and control) in a between-subjects design. The procedure was identical to Study 1 with two main exceptions. First, we added the money prime and control conditions. In the money prime condition, we used a procedure from Vohs et al. (2006) and had participants unscramble 30 combinations of five words, including 15 neutral phrases and 15 phrases related to money (e.g., "He has the capital") (see also Boucher & Kofos, 2012). Participants in the control condition unscrambled neutral phrases. All participants then proceeded to the Self-Dehumanization Scale used in Study 1 (α_{HN} = .78; α_{HU} = .77; correlation between the subscales, r = .55, p < .001).

Participants then completed the demographic and control variables. The second adjustment to Study 2 was to add measures of participants' SES and financial security to the demographic questionnaire. To assess SES, we used the widely employed MacArthur Scale (2008), which presents participants with an image of a ladder with 10 rungs. Participants are asked to indicate on which rung they stand in the United States, where the people at the top are those who have the most money, the most education and the most respected jobs, and at the bottom are the people who have the least money, least education, and

the least respected jobs or no job. To assess financial security, we used the measure from Nelson and Morrison (2005), which asks participants to indicate how satisfied they are with their personal finances on a scale from 1(*Not at all*) to 7(*Extremely*).

4.3. Results and discussion

4.3.1. Humanness

A 4(condition: high money-prioritization, low money-prioritization, money prime, control) × 2(human dimension: nature vs. uniqueness) mixed model ANOVA revealed no main effect of the human dimension, $F(1, 365)$ = 1.57, p = .211, η^2 = .004, a marginal effect of condition, $F(3, 365)$ = 2.15, p = .093, η^2 = .017, and the predicted significant condition x human dimension interaction, $F(3, 365)$ = 3.97, p = .008, η^2 = .032. Breaking down this interaction, in support of Hypothesis 1, participants in the high money-prioritization condition self-attributed less human nature (M = 4.79, SD = 1.20) than did participants in the low money-prioritization condition, the money prime condition, and the control condition (M = 5.28, SD = 0.98, M = 5.22, SD = 1.06, and M = 5.17, SD = 1.04, respectively), ts < −2.27, ps < .024, ds > 0.33. The money prime condition did not significantly differ from the control or low money-prioritization conditions, ts < .40, ps > .691, ds < 0.06. Again, self-attributions of human uniqueness did not significantly differ between the high money-prioritization condition (M = 5.15, SD = 1.02) and the low money-prioritization, the money prime, and control conditions (M = 5.28, SD = 0.89, M = 5.22, SD = 0.83, and M = 5.06, SD = 0.99 and M = 5.25, SDs = 0.88 and 0.74, respectively), ts > .95, ps > .342, ds < 0.14. There were no other significant differences.

Next, we tested whether the effects of money-prioritization on humanness could be accounted for by reminders of resource scarcity using a series of moderated regression analyses. Our results revealed that condition did not significantly interact with either individual differences in financial security (ps > .226) or SES (ps > .626).

Study 2 therefore supported Hypothesis 1, finding that money-prioritization predicted reduced self-attributions of human nature dimension (i.e., increased mechanistic dehumanization), but not self-attributions of human uniqueness (i.e., animalistic dehumanization). The results of Study 2 further suggest that our results were not driven by the mere activation of money concepts, nor driven by resource scarcity effects.

5. Study 3

Study 3 extended Study 1 by testing our central prediction in a different population and by using a different manipulation of money-prioritization. Specifically, we asked Masters of Business Administration (MBA) students to prepare for a multi-issue negotiation related to workplace compensation and benefits. In the *money-prioritization* condition, participants were instructed to focus on maximizing their outcomes for the issues of stock options and salary. In the *control goal-prioritization* condition, participants were instructed to focus on maximizing their outcomes for the issues of job location and vacation time.

5.1. Participants

We recruited 160 MBA students at a business school in the Midwestern United States to complete the study. Based on the results from Study 1, a power analysis indicated that a sample size of 158 was needed to have 90% power to detect the effect of money prioritization on self-attributions of human nature. Ten participants did not complete the negotiation prompt. The subsequent analyses were conducted on the remaining 150 students (M_{age} = 27.23, 38% female).

5.2. Procedure

All participants were asked to imagine that they had just received a job offer. The prompt indicated that they were interested in the job, but first wanted to negotiate a better offer. There were four issues on the table in the negotiation: two related to money goals (stock options and salary) and two related to quality-of-life goals (vacation time and location). According to condition, participants were told to prioritize different issues and participants were given a payoff matrix that indicated the number of points they would receive for obtaining better or worse outcomes on each issue in the negotiation. In the money-prioritization condition, participants were told the issues of salary and stock options were the most important and the payoff matrix allocated the most points to better outcomes on these issues. In the control goal-prioritization condition, participants were told the issues of vacation time and job location were the most important and the payoff matrix allocated the most points to better outcomes on these issues. Participants were then asked to write a negotiation strategy that emphasized how they would go about getting the best outcomes on their two high-priority issues.

Following the manipulation, all participants then completed a shortened version of the Self-Humanization Scale used in Studies 1 and 2 (see Supplemental Materials; α_{HN} = .81; α_{HU} = .64; correlation between the subscales, r = .54, p < .001). Participants also completed a 2-item manipulation check assessing their money-prioritization ("Right now, I feel like earning money should be a top priority"; "Right now, I feel like it is okay to put money ahead of pleasure") on scales from 1 (*Strongly disagree*) to 7 (*Strongly agree*) (r = .52). Finally, participants provided demographic information.

5.3. Results and discussion

5.3.1. Manipulation check

Participants were significantly more likely to prioritize money in the money-prioritization condition (M = 4.44, SD = 1.25) than in the control goal-prioritization condition (M = 3.91, SD = 1.16), t (148) = 2.71, p = .008, 95% CI_{Mdiff} [.14, .92], d = 0.45, indicating that our manipulation was successful.

5.3.2. Humanness

A 2(condition: money-prioritization vs. control goal-prioritization) × 2(human dimension: nature vs. uniqueness) mixed model ANOVA revealed a main effect of human dimension, $F(1, 148)$ = 9.86, p = .002, η^2 = .062, such that participants in both conditions attributed higher levels of human uniqueness to themselves (M = 5.45, SD = 0.75) than human nature (M = 5.23, SD = 1.05), and a main effect of condition, $F(1, 148)$ = 11.25, p = .001, η^2 = .071, such that participants in the money-prioritization condition felt less human overall (M = 5.13, SD = 0.84) than did those in the control goal-prioritization condition (M = 5.55, SD = 0.69). More important for our hypothesis, a condition × human dimension interaction emerged, $F(1, 148)$ = 5.51, p = .020, η^2 = .036. Consistent with our predictions, participants in the money-prioritization condition attributed less human nature to themselves (M = 4.93, SD = 1.16) compared with participants in the control goal-prioritization condition (M = 5.52, SD = 0.82), $t(148)$ = −3.58, p < .001, 95% CI_{Mdiff}[−.92, −.27], d = 0.60. Participants in the money-prioritization condition also attributed less human uniqueness to themselves (M = 5.33, SD = 0.77) compared with those in the control goal-prioritization condition (M = 5.58, SD = 0.72), $t(148)$ = −2.05, p = .042, 95% CI_{Mdiff}[−.49, −.01], d = .33. We note that, although money prioritization significantly reduced human nature and human uniqueness, it reduced human nature to a significantly larger degree (as indicated by the fact that the mean difference of the human nature simple effect, .59, falls outside of the absolute value of the 95% CI [.01, .49] of human uniqueness' simple effect).

Study 3 again supported our prediction that money-prioritization predicted self-dehumanization along the human nature dimension. Unlike Studies 1 and 2, money-prioritization also reduced self-attributions of human uniqueness. However, consistent with our predictions, the effect on human nature was significantly larger.

6. Study 4

The main goal of Study 4 was to examine a downstream consequence of the link between money-prioritization and self-dehumanization: social distance from a prospective coworker. Given the link between human nature and social connectedness, we predicted that participants who self-dehumanized along the human nature dimension would prefer more social distance between themselves and a coworker, and as a result, would be more likely to select a coworker who would engage in fewer closeness generating behaviors (e.g., Schroeder, Fishbach, Schein, & Gray, 2017). Including this choice behavior allowed us to extend our results beyond self-report measures.

6.1. Participants

Participants were 260 adults recruited via an online panel of employees (M_{age} = 34.22, 46% women). One participant was removed for not completing the prompt.

6.2. Procedure

Participants first completed the manipulation of money-prioritization used in Study 3, whereby participants in the high money-prioritization condition prepared to negotiate over salary, and participants in the control goal-prioritization condition prepared to negotiate over more vacation time. After the manipulation, participants completed the Self-Dehumanization scale used in previous studies (α_{HN} = .77, α_{HU} = .73, r between subscales = .57, p < .001). They were then informed that there was a work task for the study that they would complete with another participant. Participants were told that there were multiple other participants in the study that they could be matched with and so they would have some input into which partner was chosen. Under the guise of assessing what they might desire in a coworker, participants completed a "Workstyle Preferences" questionnaire which included the closeness items from Schroeder et al. (2017) (see Appendix A for all items). Specifically, on 7-point scales (1 = *Strongly disagree* to 7 = *Strongly agree*), participants indicated the extent to which they preferred their work partner to engage in certain behaviors (e.g., "I would prefer the partner to talk a lot about his or her life outside work") (α = .87). They also saw the responses to the same scale of two potential coworkers who scored high (high closeness partner) or low (low closeness partner) on the Workstyle Preferences questionnaire and could use this information to select one of the two partners to work with. The order of the partner selection and the completion of the Workstyle Preference scale was counterbalanced, but there were no order effects, so this will not be discussed further.

6.3. Results and discussion

6.3.1. Humanness

A 2(condition: money-prioritization vs. control goal-prioritization) × 2(human dimension: nature vs. uniqueness) mixed model ANOVA revealed a main effect of human dimension, $F(1, 259)$ = 9.86, p = .002, η^2 = .136, a main effect of condition, F(1, 259) = 11.26, p = .001, η^2 = .056, and the predicted condition × human dimension interaction, $F(1, 259)$ = 15.50, p < .001, η^2 = .042. Consistent with our predictions, participants in the money-prioritization condition attributed less human nature to themselves (M = 4.76, SD = 1.19) compared with participants in the control goal-prioritization condition (M = 5.33, SD = 0.87), $t(259)$ = −4.34, p < .001, 95% CI_{Mdiff}[−.83,

−.31], $d = 0.54$, but attributed similar levels of human uniqueness ($M = 5.34$, $SD = 0.90$, and $M = 5.46$, $SD = 0.74$, respectively), t(2 5 9) = −1.23, $p = .219$, 95%CI$_{Mdiff}$[−.33, .07], $d = 0.15$.

6.3.2. Closeness preferences

An independent samples *t*-test revealed that participants in the money-prioritization condition preferred less social closeness ($M = 3.64$, $SD = 1.33$) than did those in the control goal-prioritization condition ($M = 4.15$, $SD = 1.29$), $t(2 5 9) = −3.11$, $p = .002$, 95% CI$_{Mdiff}$[−.83, −.19], $d = 0.39$.

6.3.3. Partner choice

A chi-square analysis revealed that significantly fewer participants in the money-prioritization condition selected the closeness generating partner (41.26%) than in the control goal-prioritization condition (54.24%), $\chi^2 = 4.37$, $p = .037$, $OR = 0.59$.

6.3.4. Mediation

Using model 4 of PROCESS (Preacher & Hayes, 2004), we found that the effect of condition on partner choice was fully mediated by self-attributions of human nature, 95% CI [−.49, −.13]. The effect of condition on choice dropped to nonsignificance ($p = .294$) when self-attributions of human nature were included. Similarly, self-attributions of human nature mediated the relationship between condition and preference for social closeness, 95%CI [−0.34, −0.11], and the effect of condition on preference dropped to marginal significance ($p = .061$) when self-attributions of human nature were included.

Consistent with the results of Study 2, condition did not interact with individual differences in financial scarcity to predict either perceptions of human nature, $b = .061$, $p = .698$, or partner choice, $B = −0.05$, $p = .767$, suggesting that perceptions of scarcity does not account for these results.

Study 4 revealed an important downstream consequence of the money-prioritization and self-dehumanization link: a decreased desire to connect with others and the choice of a co-worker who would promote less social closeness. Taken together, Studies 1–4 demonstrated the influence of money-prioritization on self-dehumanization. Next we turn to the reciprocal relationship and test whether humanizing the self influences money-prioritization.

7. Study 5A

If (as argued above) invoking the goals and values associated with money-prioritization opposes and inhibits those associated with human nature, then invoking the goals and values associated with human nature should reduce money-prioritization. Study 5A tested this second prediction. Participants were randomly assigned to a *self-humanization* or *control* condition, and then indicated their money-prioritization. Coders categorized participants' open-ended responses as reflecting the human nature or human uniqueness dimensions. We predicted that participants who wrote about humanness in terms of human nature would be less likely to prioritize money than other participants. This open-ended approach enabled us to see if participants' unguided conceptualizations of humanness would include the attributes theorized to make up the human nature and uniqueness dimensions, and whether these attributes would, in turn, impact participants' money-prioritization.

7.1. Participants

We recruited 140 participants via Amazon's Mechanical Turk. We aimed for 70 participants per cell, given the exploratory nature of the coding scheme (described below). Seven participants failed an attention check and one did not complete the study. The following analyses therefore examine the remaining 132 ($M_{age} = 34.68$; 48% female).

7.2. Procedure

Participants were randomly assigned to one of two conditions. In the *self-humanization* condition, participants were instructed to write about what they think it means to be human, and a time they experienced feeling human in that way. In the *control* condition, participants wrote about how a car works.[4] Participants then completed an adapted version of Furnham's (1984) Money Attitudes Scale in which they indicated their agreement with five items, such as "Earning money should be a top priority" (see Appendix A for all items). The items were highly correlated ($\alpha = .75$), and were averaged into an index of money-prioritization.

7.2.1. Response coding

Following data collection, two blind independent coders examined participants' open-ended responses to the self-humanization prompt and categorized them as reflecting human nature or human uniqueness. The coders were provided with descriptions of human nature and human uniqueness as described by Haslam et al. (2005), and were asked to classify whether participants' description of humanness captures the human nature or uniqueness dimension. Interrater reliability was found to be Kappa = .71 ($p < .001$), indicating substantial agreement. Any disagreements were resolved through discussion.

7.3. Results and discussion

First, we examined the effect of experimental condition and found that participants in the self-humanizing condition ($M = 4.18$, $SD = 1.16$) prioritized money significantly less than did those in the control condition ($M = 4.68$, $SD = 1.07$), $t(1 3 0) = -2.52$, $p = .013$, 95% CI$_{Mdiff}$[−.88, −.10], $d = 0.44$. Next, we broke down the self-humanizing condition based on coders' ratings and conducted a one-way analysis of variance (ANOVA) examining the impact of self-humanizing (human nature, $n = 39$, vs. human uniqueness, $n = 23$, vs. control condition, $n = 70$) on the prioritization of money. The results revealed a significant effect of self-humanizing group on money-prioritization, $F(2, 129) = 8.65$, $p < .001$, $\eta^2 = 0.12$. Simple effects revealed that participants who wrote about human nature reported being significantly less likely to prioritize money ($M = 3.84$, $SD = 1.15$) than did those who wrote about human uniqueness ($M = 4.75$, $SD = 0.97$), $t(60) = −3.17$, $p = .002$, 95% CI$_{Mdiff}$[−1.48, −.33], $d = 0.81$, and those in the control condition ($M = 4.68$, $SD = 1.07$), $t(1 0 6) = −3.77$, $p < .001$, 95% CI$_{Mdiff}$ [−1.28, −.49], $d = 0.73$. The human uniqueness and control conditions did not significantly differ, $t(90) = −0.27$, $p = .785$, 95% CI$_{Mdiff}$[−.57, .43], $d = 0.05$ (see Fig. 2).

Study 5A found support for Hypothesis 2, demonstrating that self-humanizing decreased participants' money-prioritization, but only among participants who self-humanized on the human nature dimension. One strength of Study 5A is that it provides insights into people's naturally occurring conceptions of humanness and demonstrates that these conceptions can reduce money-prioritization when they tap into human nature attributes. However, participants' self-selection into

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[4] As the result of a helpful suggestion during the review process, we collected additional data to rule out the possibility that thinking about common and vital products such as cars might independently activate desire for money, which could account for our results. To ensure that the car control condition did not affect desire for money in an unanticipated manner, we conducted a separate comparison of the car control condition to a baseline control ($N = 100$ MTurk participants). Fortunately, there were no significant differences between the car-control in desiring money ($M = 4.82$, $SD = 1.00$) and the neutral condition ($M = 4.85$, $SD = 1.11$), $t(1 0 0) = −.13$, $p = .899$, nor there were any differences between the car-control and baseline control conditions in predicting mood ($Ms = 6.31$ and 6.39 and $SDs = 1.68$ and 1.53), $t(1 0 0) = −.24$, $p = .815$. These results suggest that the car control was an appropriate control condition.
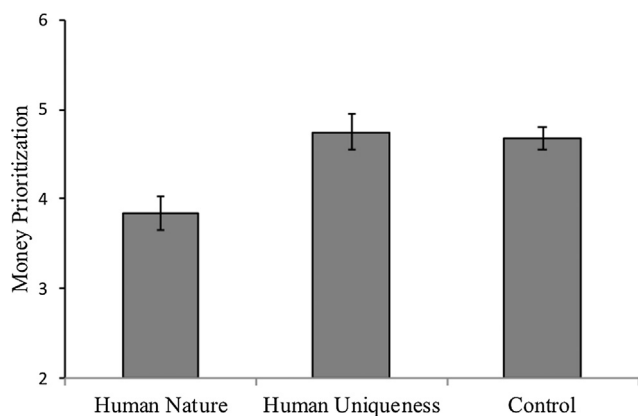
Fig. 2. The effect of self-humanization condition on money-prioritization (± *SE*) in Study 5A.

human nature or uniqueness makes it difficult to draw causal conclusions. Study 5B therefore manipulated the two dimensions of humanness to provide stronger causal support for our predictions.

8. Study 5B

To establish causality, Study 5B participants were randomly assigned to self-humanize along either the human nature or human uniqueness dimensions (or a control condition) and then indicated their money-prioritization. We predicted that participants in the human nature condition would be significantly less likely to prioritize money than would those in the human uniqueness or control conditions. Study 5B also sought to rule out positive affect as an alternative explanation. It is possible that self-humanizing along the human nature dimension produces more positive affect than does human uniqueness or the control condition (e.g., by increasing feelings of social connectedness or emotionality; Leary, Tambor, Tendal, & Downs, 1995). Given that affect may influence money-prioritization (Pyone & Isen, 2011), we controlled for affect in Study 5B.

8.1. Pretest

To our knowledge, the current research is the first to manipulate feelings of human nature and human uniqueness. Our first goal was to develop novel self-humanization manipulations and to pretest their effectiveness at inducing feelings of human nature and uniqueness. We recruited 180 participants from Mechanical Turk and retained 161 for analysis (4 participants did not complete the survey and 15 failed an attention check). We randomly assigned participants to one of the three study conditions and then had them complete the Self-Humanization Scale from Studies 1 and 2. The control condition was the same as in Study 5A. To manipulate human nature, we asked participants to write about traits they possess that distinguish them from robots and to manipulate human uniqueness asked participants to write about traits they possess that distinguish them from non-human animals (Haslam et al., 2005; Loughnan & Haslam, 2007). The human nature manipulation read as follows [the human uniqueness manipulation is in brackets]:

> *The more we learn about artificial [animal] intelligence, the more we learn about the capabilities of robots [animals]…Some people say that humans have essential qualities that robots [non-human animals] simply do not have. What are those qualities that distinguish humans from robots [non-human animals]? How do you think you personally possess those qualities?*

Results supported the validity of our manipulation. Planned contrasts revealed that those in the human nature (+ 1) condition reported

significantly higher self-attributions of human nature (*M* = 5.61, *SD* = 0.98) than did those in the uniqueness (− 0.5) (*M* = 4.89, *SD* = 1.31) or control (− 0.5) (*M* = 4.87, *SD* = 1.37) conditions, t (1 5 8) = 3.51, *p* = .001, *d* = 0.56. Likewise, participants in the human uniqueness (+ 1) condition reported significantly higher self-attributions of human uniqueness (*M* = 4.87, *SD* = 1.14) than did those in the nature (− 0.5) (*M* = 4.36, *SD* = 1.27) or control (− 0.5) (*M* = 4.35, *SD* = 1.17) conditions, $t(1 5 8)$ = 2.48, *p* = .015, *d* = 0.39. These results support the validity of our manipulation. We therefore turned to the main study.

8.2. Participants

We recruited 150 adults recruited from Amazon's Mechanical Turk. Four participants did not complete the self-humanizing manipulation, and eleven participants failed the Instructional Manipulation Check. Analyses included the remaining 135 (M_{age} = 34.2; 41% female). Based on the Study 5A results, a power analysis revealed that a sample size of 135 was sufficient to have 90% power to detect the effect.

8.3. Procedure

Participants were randomly assigned to one of three conditions: human nature, human uniqueness, or control. The conditions were as described in the Pretest. Following the self-humanization manipulation, participants indicated their prioritization of money, using the same scale as in Study 5A. The items were again highly correlated (α = .78), and averaged to serve as an index of money-prioritization. We also measured state affect by having participants indicate how they felt on a scale from 1 (*Extremely negative*) to 9 (*Extremely positive*). Finally, they provided demographic information.

8.4. Results and discussion

A one-way ANOVA revealed a significant effect of self-humanizing condition on money-prioritization, $F(2, 134)$ = 7.20, *p* = .001, η^2 = 0.10. Simple effects revealed that participants in the human nature condition were significantly less likely to prioritize money (*M* = 4.14, *SD* = 1.15) than were those in the control condition (*M* = 5.03, *SD* = 1.16), $t(96)$ = − 3.73, *p* < .001, 95% CI_{Mdiff}[−1.38, −.42], *d* = 0.76, and marginally less likely than those in the human uniqueness condition (*M* = 4.65, *SD* = 1.08), $t(72)$ = − 1.99, *p* = .051, 95% CI_{Mdiff}[−1.03, .00], *d* = 0.47. Participants in the human uniqueness condition and the control condition did not significantly differ, t (96) = − 1.62, *p* = .11, 95% CI_{Mdiff}[−.85, .09], *d* = 0.33.

An additional ANOVA demonstrated that condition had no effect on participants' affect, $F(2, 132)$ = 0.13, *p* = .88, η^2 = 0.002. Similar levels of positive affect were found in the human nature (*M* = 6.51, *SD* = 1.24), human uniqueness (*M* = 6.35, *SD* = 1.46), and the control conditions (*M* = 6.49, *SD* = 1.68), all simple comparison *ps* > .65. Moreover, including affect in an analysis of covariance did not alter the effect of condition on money prioritization, $F_{main\ effect}(2, 132)$ = 7.28, *p* = .001, η^2 = 0.10.

Study 5B provides causal support for the prediction that self-humanizing along the human nature dimension reduces money-prioritization, and ruled out positive affect as an alternative explanation.

9. Study 6

Studies 5A and 5B found evidence that self-humanizing along the human nature dimension can reduce the prioritization of money. The goal of Study 6 was to test an important downstream consequence of this self-humanization effect. If self-humanization reduces the prioritization of money, then self-humanization may also reduce the negative reactions people experience after failing to achieve a money-related goal (e.g., Berkowitz, 1989), which occurs regularly in the workplace

when people fail to attain a job, promotion, raise, or bonus. Thus, Study 6 tested whether self-humanization reduces negative reactions to money-related goal frustration. Given that those who value a goal less should feel less frustration when it is not achieved, we predicted that participants who self-humanized along the human nature dimension, vs. the human uniqueness dimension, would react less negatively in response to money-related goal frustration (i.e., not receiving a salary increase). We also tested a non-money-related goal frustration condition (i.e., not receiving vacation time) and predicted that the self-humanization effect would be attenuated in this non-money-related domain. This would further demonstrate the specificity of the relationship between the dimension of human nature and money prioritization and rule out the alternative explanation that self-humanizing leaves all types of resources less desirable.

9.1. Participants

Based on the Study 5B results, a power analysis indicated that a sample size of 232 was required to have 90% power to detect a main effect of self-humanization along the human nature dimension. We therefore recruited 240 employed adults via Mechanical Turk (M_{age} = 35.70; 46% female). 91% of the sample indicated full-time employment, while the remaining 9% was employed part-time. Six participants did not complete the self-humanizing manipulation, and 33 failed the attention check. Analyses were conducted on the remaining 202 participants.

9.2. Procedure

Participants were randomly assigned to one of four conditions in a 2(Self-humanizing: human nature vs. human uniqueness) × 2(Goal frustration: monetary vs. non-monetary) between-subjects design. The first section of the study served to manipulate self-humanization as in Study 5B. After the self-humanization manipulation, participants began an ostensibly unrelated second study about hypothetical workplace events. In the *money-goal frustration condition*, participants imagined being considered for a salary increase at their workplace. In the *non-money-goal frustration condition*, participants imagined being considered for an extra week of vacation time. Including goal type as a factor allowed us to test the alternative explanation that self-humanization reduces the desire to pursue any goals. In both conditions, participants then imagined being called into their boss's office. Despite participants' expectations that they would receive the salary increase (vacation time), they learned that, due to various constraints, the top management team is unable to give the salary increase (vacation time).

For the dependent measures, participants rated the top management team after the event (*unintelligent, disorganized, incompetent, cold, not sociable, disagreeable*), and indicated how outraged they were (*angry, upset, outraged, disgusted, indignant, annoyed*) on scales from 1 (*Not at all*) to 7 (*Extremely*). The items were highly correlated (α = .94), and were therefore combined into a single index of negative reactions, with higher scores capturing more negative reactions to the event. Finally, participants completed demographic measures, and open-ended question assessing their beliefs about the purpose of the study.

9.3. Results and discussion

A 2(Self-humanization: human nature vs. human uniqueness) × 2(Goal frustration: money vs. non-money)[5] ANOVA

revealed a significant interaction between self-humanization and goal frustration type in predicting negative reactions, $F(1, 201) = 4.47$, $p = .036$, $\eta^2 = 0.022$, and no significant main effects [$F_{humanization\ condition}(1, 201) = 1.97 p = .162$, $\eta^2 = 0.010$, $F_{goal\ condition}(1, 201) = 0.00$, $p = .992$, $\eta^2 = 0.000$] (see Fig. 3). Within the money-goal frustration condition, self-humanizing along the human nature dimension resulted in significantly less negative reactions ($M = 3.87$, $SD = 1.54$) than did self-humanizing along the human uniqueness dimension ($M = 4.55$, $SD = 1.38$), $t(95) = -2.26$, $p = .026$, $d = 0.46$. By contrast, in the non-money-goal frustration condition, the human nature and human uniqueness conditions did not significantly differ ($Ms = 4.28$ and 4.14, $SDs = 1.12$ and 1.38, respectively), $t(103) = 0.56$, $p = .579$, $d = 0.11$.

Study 6 further supported the relationship between self-humanization and money-prioritization by demonstrating that self-humanization along the human nature dimension attenuated the negative reactions when a money goal was thwarted. Importantly, self-humanizing did not affect reactions to the frustration of a non-money goal, offering discriminant validity.

10. General discussion

Pejorative labels such as "work zombie" or "robot" are often used to describe people who consistently prioritize money. Yet, research had yet to systematically examine the relationship between money-prioritization and self-dehumanization. Studies 1–4 supported the prediction that money-prioritization reduces self-attributions of human nature, leading participants to view the self as more object-like, cold, and robotic. Studies 5–6 supported the reciprocal prediction that self-attributing human nature, but not human uniqueness, reduced money-prioritization.

As predicted, human nature was the most relevant dimension of humanness, with consistent findings across studies and measures. Although the effect of money-prioritization on human uniqueness reached statistical significance in Study 2, we note that this is consistent with prior research finding that human nature and human uniqueness are sometimes positively correlated, especially when perceivers evaluate individual targets (Bastian & Haslam, 2007; see also Judd, James-Hawkins, Yzerbyt, & Kashima, 2005). It is therefore not surprising that these two dimensions might, at times, operate in concert. Nonetheless, when the human nature and human uniqueness dimensions were separated empirically by the self-humanization manipulations (Studies 5 and 6), human nature emerged as the most robust predictor of money-prioritization.

10.1. Theoretical contributions and practical implications

The present research provides important theoretical contributions. Self-dehumanization remains understudied, despite the significance of the experience of dehumanization (Waytz et al., 2010). In fact, existing research has tended to focus on the propensity for people to attribute more humanness to themselves than to others (Haslam et al., 2005; Park et al., 2013). The research that has found evidence of self-dehumanization has focused on the effects of clearly negative experiences,

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[5] Also resulting from a helpful comment during the review process, we collected additional data (N = 100 MTurk participants) to examine how a neutral control condition would descriptively compare to the human uniqueness and human nature conditions. Paralleling the other conditions in Study 6, these control participants were randomly assigned to one of two conditions (Goal

(*footnote continued*)

frustration: money vs. non-money) in a between-subjects design. They then indicated their reactions to the event (e.g., angry, upset, disgusted). The results revealed that, following the money goal frustration, participants in the control condition reacted no more negatively ($M = 4.44$. $SD = 1.44$) than did those who self-humanized along the human uniqueness condition, but those who self-humanized along the human nature condition reacted less negatively than those in the other two conditions, $t(146) = -2.43$, $p = .016$. No significant differences emerged in the non-money-goal frustration condition, such that participants in the control condition reacted similar ($M = 4.40$, $SD = 1.43$) to those in the human uniqueness and human nature conditions, $t(146) = 0.03$, p = .976.
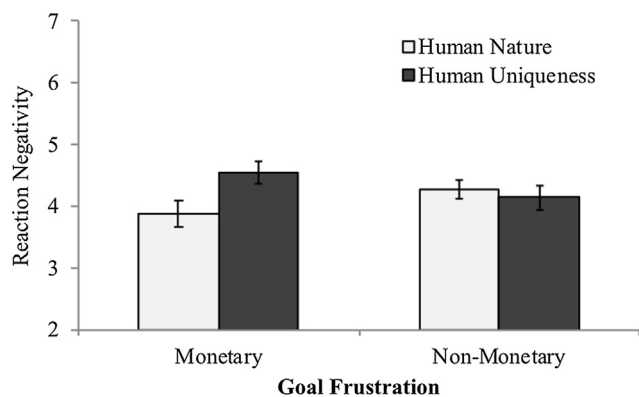
Fig. 3. The effects of goal frustration type and self-humanizing condition on the negativity of reactions to goal frustration (± *SE*) in Study 6.

such as perpetrating or experiencing ostracism or acts of violence (Bastian & Haslam, 2010; Bastian, Jetten, & Radke, 2012; see Bastian & Crimston, 2014 for review). Drawing on circumplex models of values and goals, we theorized that even a relatively mundane and culturally valued pursuit could lead to self-dehumanization because of the values and goals associated with money-prioritization. By linking two largely separate literatures (the structure of human goals and values, humanization), the current research offers a theoretical framework for understanding how various situational and structural factors might impact self-dehumanization even in the absence of clearly negative events. We further uncover a behavioral consequence of self-dehumanization, by documenting an increased preference for socially distant coworkers. While research on the consequences of self-dehumanization is still in its early stages, the current findings harken back to Marx's predictions about the objectification of workers from their social community. This experience of social disconnection may also lead to fewer prosocial behaviors (e.g., Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007), reduced well-being (e.g., Hawkley & Cacioppo, 2010), and reduced job performance (Ozcelik & Barsade, in press).

The current research also provides an alternative explanation to some of money's previously documented effects on behavior. For example, self-dehumanization following money-prioritization might help explain research finding that monetary-pursuits increase antisocial and unethical behaviors (e.g., Gino & Pierce, 2009; Tang & Chiu, 2003). By viewing the self more instrumentally or as an object, those prioritizing money may experience the moral disengagement often required for unethical acts (e.g., Bandura, Barbaraneli, Caprana, & Pastorelli, 1996). Similarly, given that the experience of dehumanization is associated with negative cognitive and emotional outcomes (Bastian & Haslam, 2011), self-dehumanization may shed light on the relationship between the prioritization of money and diminished psychological well-being (Burroughs & Rindfleisch, 2002; Kashdan & Breen, 2007). Future research should explore whether self-dehumanization drives money-prioritization's negative inter- and intrapersonal consequences.

The current results also have important managerial and organizational implications. Organizations should consider the implications that encouraging the prioritization of money may have on organizational members' beliefs and actions. We acknowledge that money and profit prioritization is a necessary part of organizational life, but organizations should be aware of the contextual cues that might make members' own money prioritization salient. For example, the salience of money-prioritization may vary depending on factors such as pay structure. Structures that clearly link performance-to-rewards (e.g., billable hours; performance-contingent pay) may put a clear price tag on individuals' efforts (2013; DeVoe & Pfeffer, 2007; Hur & Nordgren, 2016), which may increase self-dehumanization. Given the associations between self-dehumanization and downstream consequences such as decreased interpersonal connection and increased negative affect (e.g., Bastian &

Haslam, 2010), this organizational focus on money may have negative consequences for members' loneliness, affective commitment to the organization, and burnout.

Further, these results have important implications for organizations and policy makers interested in shifting people's prioritization of money. Previous research has shown that increased prioritization of money affects judgment and decision-making in a variety of domains, including willingness to donate (Briers, Pandelaere, Dewitte, & Warlop, 2006), propensity to gamble (Gourville & Soman, 1998), willingness to prioritize social relationships (Burroughs & Rindfleisch, 2002; Teng, Chen, Poon, Zhang, & Jiang, 2016), and financial decision-making (Thaler, 1990). Our results suggest that a relatively simple intervention (self-humanizing) reduces money-prioritization, which could help people navigate the intricacies of prioritizing money and being human.

10.2. Limitations and future directions

Despite the advances made, it should be noted that the current work contains some limitations that should be addressed in future research. First, our theorizing was guided by circumplex models, which suggest that goals and values express specific motivational orientations, which either conflict, are consistent with, or orthogonal to other motivational orientations. While our findings support this theorizing, future research should further test the mechanisms that explain the effects of circumplex models. For example, the cognitive mechanisms could be tested using the task facilitation methodology used widely in studies of social cognition and memory (e.g., Klein & Loftus, 1990). According to our theorizing, prioritizing money should increase the speed with which people respond to probes relevant to self-enhancement cues, but decrease the speed with which they respond to self-transcendent (and human nature) cues. This decreased accessibility may, in turn, affect self-perceptions (Maio, 2010).

Moreover, although our results suggest an antagonistic relationship between monetary pursuits and self-humanization, this relationship is likely not invariant. One moderator may be the extent to which monetary pursuits are viewed as a means-to-an-end rather than an end in itself. For example, reminding people that money can be ultimately used to purchase experiences or to purchase gifts for others may facilitate feelings of connection to others (Dunn, Akin, & Norton, 2008; Kumar, Mann, & Gilovich, 2014), thus restoring attributions of human nature. In a similar vein, the necessity of money may be important. Deci and Ryan (1985) argued that the pursuit of extrinsic rewards is neither good nor bad per se, but that excessive focus on extrinsic rewards could interfere with intrinsic endeavors and social integration. Consistent with this, Grouzet et al. (2005) demonstrated that items related to financial success (e.g., "I will be financially successful") had a less extrinsic character in poorer compared with wealthier cultures. The authors suggest that financial success likely has more to do with basic survival in poorer countries, whereas financial success in wealthier countries is more often linked to the pursuit of status and nonessential pleasantries. Thus, to the extent that money is pursued to meet basic needs, money-prioritization may not decrease self-perceptions of human nature.

10.3. Conclusion

It has been over a century since Karl Marx speculated that the values associated with capitalism would lead people to feel less human. The present research links two previously separate literatures in psychology to support Marx's assertion, finding that prioritizing money increases self-dehumanization. Considering the central role of money in organizations and daily life, this finding has important implications. We also found, however, that a relatively simple intervention (self-humanizing) reduces the desire for money, which could help people navigate the intricacies of pursuing money and being human.

Acknowledgments

Appendix A. Scale items

<u>Self-Humanization Scale</u> (Bastian & Haslam, 2010)

Please answer the following questions with regard to how you feel right now, at this point in time.

Human Nature

1. I feel like I am emotional, like I am responsive and warm.
2. I feel like I am robotic. [*reverse-coded*]
3. I feel like I am superficial, like I have no depth. [*reverse-coded*]
4. I feel like I am open-minded, like I can think clearly about things.
5. I feel like I am connected to other people.

Human Uniqueness

6. I feel like I am refined and cultured.
7. I feel like I am sophisticated.
8. I feel like I lack self-restraint, like an animal. [*reverse-coded*]
9. I feel like I am rational and logical.
10. I feel like I am incompetent. [*reverse-coded*]
11. I feel like I am intelligent.

<u>Money Attitudes Scale</u> (Adapted from Furnham, 1984)

The following statements describe different attitudes people can hold.

Please indicate how much you agree with each statement right now, at this point in time. Keep in mind, there are no right or wrong answers.

1. It is okay to put money ahead of pleasure.
2. Money can solve many of life's problems.
3. It is okay to do anything legal for money, as long as the payment is enough.
4. On occasion, earning money should be prioritized over spending time with others.
5. Earning money should be a top priority.

<u>Workstyle Preferences Scale</u> (Adapted from Schroeder et al., 2017)

How much would you prefer your partner does the following things while you work together:

1. I would prefer the partner to ask me personal questions.
2. I would prefer the partner to make a lot of eye contact with me.
3. I would prefer the partner to talk a lot about his or her life outside of work
4. I would prefer to not hang outside of work with the partner

References

Bain, P., Vaes, J., Kashima, Y., Haslam, N., & Guan, Y. (2012). Folk conceptions of humanness: Beliefs about distinctive and core human characteristics in Australia, Italy, and China. *Journal of Cross-Cultural Psychology, 43*, 53–58.

Bandura, A. (1999). Moral disengagement in the perpetuation of inhumanities. *Personality and Social Psychology Review, 3*, 193–209.

Bandura, A., Barbaranelli, C., Caprara, G., & Pastorelli, C. (1996). Mechanisms of moral disengagement in the exercise of moral agency. *Journal of Personality and Social Psychology, 71*, 364–374.

Bastian, B., & Crimston, D. (2014). Self-dehumanization. *TPM: Testing, Psychometrics, Methodology in Applied Psychology, 21*(3).

Bastian, B., & Haslam, N. (2007). Psychological essentialism and attention allocation: Preferences for stereotype-consistent versus stereotype-inconsistent information. *The Journal of Social Psychology, 147*, 531–541.

Bastian, B., & Haslam, N. (2010). Excluded from humanity: Ostracism and dehumanization. *Journal of Experimental Social Psychology, 46*, 107–113.

Bastian, B., & Haslam, N. (2011). Experiencing dehumanization: Cognitive and emotional effects of everyday dehumanization. *Basic and Applied Social Psychology, 33*, 295–303.

Bastian, B., Jetten, J., Chen, H., Radke, H., Harding, J., & Fasoli, F. (2013). Losing our humanity: The self-dehumanizing consequences of social ostracism. *Personality and Social Psychology Bulletin, 39*, 156–159.

Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology, 48*, 486–491.

Bem, D. J. (1972). Self-perception theory. In: *Advances in experimental social psychology* (Vol. 6, pp. 1–62). Academic Press.

Berkowitz, L. (1989). Frustration-aggression hypothesis: Examination and reformulation. *Psychological Bulletin, 106*, 59–73.

Benabou, R., & Tirole, J. (2006). Incentives and prosocial behavior. *American Economic Review, 96*, 1652–1678.

Boucher, H. C., & Kofos, M. N. (2012). The idea of money counteracts ego depletion effects. *Journal of Experimental Social Psychology, 48*, 804–810.

Briers, B., Pandelaere, M., Dewitte, S., & Warlop, L. (2006). Hungry for money: The desire for caloric resources increases the desire for financial resources and vice versa. *Psychological Science, 17*, 939–943.

Burroughs, J. E., & Rindfleisch, A. (2002). Materialism and well-being: A conflicting values perspective. *Journal of Consumer Research, 29*, 348–370.

Caruso, E. M., Shapira, O., & Landy, J. F. (2017). Show me the money: A systematic exploration of manipulations, moderators, and mechanisms of priming effects. *Psychological Science, 28*, 1148–1159.

Deci, E., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* Springer Science & Business Media.

DeVoe, S. E., & Pfeffer, J. (2007). When time is money: The effect of hourly payment on the evaluation of time. *Organizational Behavior and Human Decision Processes, 104*, 1–13.

DeVoe, S. E., Pfeffer, J., & Lee, B. Y. (2013). When does money make money more important? Survey and experimental evidence. *Industrial and Labor Relations Review, 5*, 1076–1094.

Dunn, E. W., Aknin, L. B., & Norton, M. I. (2008). Spending money on others promotes happiness. *Science, 319*, 1687–1688.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*, 117–140.

Fishbach, A., Ferguson, M. F. (2007). The goal construct in social psychology. In A. W. Kruglanski, E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles*, 2nd ed. (pp. 490–515). Guilford.

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*, 878–902.

Furnham, A. (1984). Many sides of the coin: The psychology of money usage. *Personality and Individual Differences, 5*, 501–509.

Gino, F., & Pierce, L. (2009). The abundance effect: Unethical behavior in the presence of wealth. *Organizational Behavior and Human Decision Processes, 109*, 142–155.

Gourville, J. T., & Soman, D. (1998). Payment depreciation: The behavioral effects of temporally separating payments from consumption. *Journal of Consumer Research, 25*(2), 160–174.

Gray, H., Gray, K., & Wegner, D. (2007). Dimensions of mind perception. *Science, 5812*, 315–619.

Grouzet, F. M., Kasser, T., Ahuvia, A., Dols, J. M. F., Kim, Y., Lau, S., & Sheldon, K. M. (2005). The structure of goal contents across 15 cultures. *Journal of Personality and Social Psychology, 89*, 800–816.

Haque, O. S., & Waytz, A. (2012). Dehumanization in medicine: Causes, solutions, and functions. *Perspectives on Psychological Science, 7*, 176–186.

Haslam, N. (2006). Dehumanization: An integrative review. *Personality and Social Psychology Review, 10*, 252–264.

Haslam, N., & Bain, P. (2007). Humanizing the self: Moderators of the attribution of lesser humanness to others. *Personality and Social Psychology Bulletin, 33*, 57–68.

Haslam, N., Bain, P., Douge, L., Lee, M., & Bastian, B. (2005). More human than you: Attributing humanness to self and others. *Journal of Personality and Social Psychology, 89*, 937–950.

Haslam, N., & Loughnan, S. (2014). Dehumanization and infrahumanization. *Annual Review of Psychology, 65*, 399–423.

Hawkley, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine, 40*, 218–227.

Heflick, N., & Goldenberg, J. (2009). Objectifying Sarah Palin: Evidence that objectification causes women to be perceived as less competent and less fully human. *Journal of Experimental Social Psychology, 45*, 598–601.

Hsee, C. K., Zhang, J., Cai, C. F., & Zhang, S. (2013). Overearning. *Psychological Science, 24*, 852–859.

Hur, J. D., & Nordgren, L. F. (2016). Paying for performance: Performance incentives increase desire for the reward object. *Journal of Personality and Social Psychology, 111*, 301–316.

Judd, C. M., James-Hawkins, L., Yzerbyt, V., & Kashima, Y. (2005). Fundamental dimensions of social judgment: Understanding the relations between judgments of competence and warmth. *Journal of Personality and Social Psychology, 89*(6), 899–913.

Kashdan, T. B., & Breen, W. E. (2007). Materialism and diminished well-being: Experiential avoidance as a mediating mechanism. *Journal of Social and Clinical Psychology, 26*, 521–539.

Kasser, T. (2003). *The high price of materialism.* MIT Press.

Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology, 65*, 410–422.

Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin,*

22, 280–287.

Klein, S. B., & Loftus, J. (1990). The role of abstract and exemplar-based knowledge in self-judgments: Implications for a cognitive model of the self. *Advances in Social Cognition, 3*, 131–139.

Kouchaki, M., Dobson, K. S. H., Waytz, A., & Kteily, N. S. (2018). The link between self-dehumanization and immoral behavior. *Psychological Science, 29*(8), 1234–1246.

Kouchaki, M., Smith-Crowe, K., Brief, A. P., & Sousa, C. (2013). Seeing green: Mere exposure to money triggers a business decision frame and unethical outcomes. *Organizational Behavior and Human Decision Processes, 121*, 53–61.

Kruglanski, A. W., Shah, J. Y., Fishbach, A., Friedman, R., Chun, W. Y., & Sleeth-Keppler, D. (2002). A theory of goal systems. In M. P. Zanna (Ed.). *Advances in experimental social psychology* (pp. 331–378). Academic Press.

Kumar, A., Mann, T. C., & Gilovich, T. D. (2014). Questioning the "I" in experience: Experiential purchases foster social connection. *NA-Advances in Consumer Research, 42*.

Lamont, M. (1992). *Money, morals, and manners: The culture of the French and the American upper-middle class.* University of Chicago Press.

Layard, R. (2005). *Happiness: Lessons from a new science.* London: Penguin Books.

Leary, M. R., Tambor, E. S., Terdal, S. K., & Downs, D. L. (1995). Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology, 68*, 518–530.

Locke, K. D. (2009). Aggression, narcissism, self-esteem, and the attribution of desirable and humanizing traits to self versus others. *Journal of Research in Personality, 43*, 99–102.

Loughnan, S., & Haslam, N. (2007). Animals and androids: Implicit associations between social categories and nonhumans. *Psychological Science, 18*, 116–121.

Maio, G. R. (2010). Mental representations of social values. In: *Advances in experimental social psychology* (Vol. 42, pp. 1-43). Academic Press.

Maio, G. R., Pakizeh, A., Cheung, W. Y., & Rees, K. J. (2009). Changing, priming, and acting on values: Effects via motivational relations in a circular model. *Journal of Personality and Social Psychology, 97*, 699–715.

Malhotra, D. (2014). 15 Rules for negotiating a job offer. *Harvard Business Review*.

Marx, K. (1964). *Economic and philosophical manuscripts of 1844. (M. Milligan, Trans.).* New York, NY: International Publishers. (Original work published in 1844).

Mogilner, C. (2010). The pursuit of happiness time, money, and social connection. *Psychological Science, 21*, 1348–1354.

Nelson, L. D., & Morrison, E. L. (2005). The symptoms of resource scarcity: Judgments of food and finances influence preferences for potential partners. *Psychological Science, 16*, 167–173.

Ozcelik, H., & Barsade, S. (In Press). No employee an island: Workplace loneliness and job performance. *Academy of Management Journal*.

Park, J., Haslam, N., Shimizu, H., Kashima, Y., & Uchida, Y. (2013). More human than others, but not always better: The robustness of self-humanizing across cultures and interpersonal comparisons. *Journal of Cross-Cultural Psychology, 44*, 671–683.

Park, J. K., & John, D. R. (2011). More than meets the eye: The influence of implicit and explicit self-esteem on materialism. *Journal of Consumer Psychology, 21*, 73–87.

Peng, K., Nisbett, R. E., & Wong, N. Y. (1997). Validity problems comparing values across cultures and possible solutions. *Psychological Methods, 2*, 329–344.

Pfeffer, J., & DeVoe, S. E. (2009). Economic evaluation: The effect of money and economics on attitudes about volunteering. *Journal of Economic Psychology, 30*, 500–508.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation mdoels. *Behavior Research Methods, Instruments, & Computers, 36*, 717–731.

Pyone, J. S., & Isen, A. M. (2011). Positive affect, intertemporal choice, and levels of

thinking: Increasing consumers' willingness to wait. *Journal of Marketing Research, 48*, 532–543.

Rohrer, D., Pashler, H., & Harris, C. R. (2015). Do subtle reminders of money change people's political views? *Journal of Experimental Psychology: General, 144*, 73–85.

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press.

Schroeder, J., Fishbach, A., Schein, C., & Gray, K. (2017). Functional intimacy: Needing—But not wanting—The touch of a stranger. *Journal of Personality and Social Psychology, 113*, 910–924.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology, 25*, 1–65.

Schwartz, S. H. (1996). Values priorities and behavior: Applying of theory of integrated value systems. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.). *The psychology of values: The Ontario symposium* (pp. 1–24). Hillsdale, NJ: Erlbaum.

Simmons, J. P. (2014, April 4). MTurk vs. the lab: Either way we need big samples. Retrieved from http://datacolada.org/2014/04/04/18-mturk-vs-the-lab-either-waywe-need-big-samples/.

Skidelsky, R. J. A., & Skidelsky, E. (2012). *How much is enough? The love of money and the case for the good life.* Penguin UK.

Tang, T. L. P., & Chiu, R. K. (2003). Income, money ethic, pay satisfaction, commitment, and unethical behavior: Is the love of money the root of evil for Hong Kong employees? *Journal of Business Ethics, 46*, 13–30.

Teng, F., Chen, Z., Poon, K., Zhang, D., & Jiang, Y. (2016). Money and relationships: When and why thinking about money leads people to approach others. *Organizational Behavior and Human Decision Processes, 137*, 58–70.

Thaler, R. H. (1990). Anomalies: Saving, fungibility, and mental accounts. *The Journal of Economic Perspectives*, 193–205.

Twenge, J. M., Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Bartels, J. M. (2007). Social exclusion decreases prosocial behavior. *Journal of Personality and Social Psychology, 92*, 56–66.

Vaes, J., & Muratore, M. (2013). Defensive dehumanization in the medical practice: A cross-sectional study from a health care worker's perspective. *British Journal of Social Psychology, 52*, 180–190.

Viki, G. T., Winchester, L., Titshall, L., Chisango, T., Pina, A., & Russell, R. (2006). Beyond secondary emotions: The infrahumanization of outgroups using human-related and animal-related words. *Social Cognition, 24*, 753–775.

Vohs, K. D. (2015). Money priming can change people's thoughts, feelings, motivations, and behaviors: An update on 10 years of experiments. *Journal of Experimental Psychology: General, 144*, 86–93.

Vohs, K. D., Mead, N. L., & Goode, M. R. (2006). The psychological consequences of money. *Science, 314*, 1154–1156.

Waytz, A., Epley, N., & Cacioppo, J. T. (2010). Social cognition unbound: Insights into anthropomorphism and dehumanization. *Current Directions in Psychological Science, 19*, 58–62.

Waytz, A., & Norton, M. I. (2014). Botsourcing and outsourcing: Robot, British, and German workers are for thinking–not feeling–jobs. *Emotion, 14*, 434–444.

Wheeler, S. C., DeMarree, K. G., & Petty, R. E. (2005). Roles of the self in determining prime-to-behavior effects. In A. Tesser, J. Wood, & D. Stapel (Eds.). *on building, defending and regulating the self: A psychological perspective* (pp. 245–272). New York: Psychology Press.

Wheeler, S. C., DeMarree, K. G., & Petty, R. E. (2007). Understanding the role of the self in prime-to-behavior effects: The active-self account. *Personality and Social Psychology Review, 11*, 234–261.