Money Helps When Money Feels: Money Anthropomorphism Increases Charitable Giving

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Across five studies, the current research demonstrates that imbuing money with humanlike characteristics can enhance charitable giving. Based on mind perception theory, we propose that anthropomorphizing money can induce people to attribute to money the capacity to feel and sense (i.e., warmth) and the capacity to do things (i.e., competence). Further, we argue that enhanced warmth perception increases charitable giving. Studies 1a and 1b provided initial evidence that money anthropomorphism increased charitable giving by measuring real monetary donation behavior (study 1a) and by adopting a practical method to anthropomorphize money in charitable appeals (study 1b). Study 2 showed that money anthropomorphism enhanced both warmth and competence perceptions of money, but that only enhanced warmth perception increased donation intention. Study 3 showed that money anthropomorphism did not enhance other types of charitable giving, such as signature provision. Study 4 showed that the money anthropomorphism effect was unique to money and that anthropomorphizing other financial instruments, such as a credit card, did not induce the same effect.

Keywords: money reminders, money anthropomorphism, mind perception, warmth, competence

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In everyday life, people do not always treat money as a mere object. Rather, they sometimes think or talk about money as though it is a person, attributing humanlike characteristics to it. In other words, people may view money as an entity that serves various social roles and performs humanlike actions (Maurer 2006). The Roman Goddess Moneta referred to the currency exchanged by the Romans, and the English word *money* originates from her name. Linguistic portrayal by philosophers and artists reflects the tendency to impose humanlike features on money. For example, Francis Bacon said, "Money is a great servant but a bad master." American poet Richard Armour said, "Money talks, I will not deny, I heard it once: it said 'Goodbye,'" and American writer Lemony Snicket said, "Money is like a child—rarely unaccompanied." Moreover, around the world, the casual terms used to refer to money tend to imply human aspects. For example, in Australia, a five-dollar note is sometimes called a pink lady. A tendency to impose humanlike characteristics on money can also be found in

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Eastern cultures. For example, the Chinese refer to money in human terms, calling it Brother Kong Fang (Chinese: 孔方兄), and a Korean fable, "Kong Fang Jeon," is a story about a humanized Korean brass coin that served as a government official.

Despite the possibility of money anthropomorphism, previous studies have not empirically validated this concept, nor have they explored the downstream consequences of humanizing money for consumer behavior. Thus, the current research provides an empirical validation of money anthropomorphism to demonstrate that people sometimes anthropomorphize money and, more importantly, that the subtle manipulation techniques used in prior research to anthropomorphize various nonhuman objects also work for money anthropomorphism. Therefore, marketers can induce money anthropomorphism by embedding subtle techniques in their marketing communications. In particular, we examine the influence of humanizing money on consumer behavior in the context of charitable giving, which is a multibillion-dollar industry that has a wide-ranging impact on people's lives (Sargeant and Woodliffe 2007).

Throughout history, philosophers and theologians have often thought of money as a negative force that corrupts human nature and weakens social bonds (Marx 1964). Consistent with this idea, previous studies have shown that reminders of money reduce people's likelihood of helping others in need (Tang et al. 2008; Vohs, Mead, and Goode 2006, 2008). However, as a charity usually asks people to donate money, money reminders are inevitable in the charitable context. Therefore, the current research focuses on types of money reminders and their respective impacts on charitable giving. This research suggests that the manner in which money reminders are made can affect how individuals construe money and, in turn, influence their charitable giving. In particular, we examine whether imbuing money with humanlike characteristics influences charitable giving.

Based on mind perception theory (Gray, Gray, and Wegner 2007), we propose that thinking of money as a person causes individuals to attribute to money the capacity to feel (i.e., experience) and the capacity to do things (i.e., agency). Experience and agency correspond to *warmth* and *competence*, respectively, which are the two fundamental dimensions of person perception (Fiske et al. 2002; Fiske, Cuddy, and Glick 2007; Judd et al. 2005). Further, we propose that the question of whether the enhanced perceived warmth or competence of money affects individuals' behaviors is dependent on context. Because the warmth dimension is more crucial in general interpersonal contexts than is the competence dimension (Abele and Wojciszke 2014), especially in charitable giving contexts (Eisenberg and Miller 1987; Flook et al. 2015; Haas et al. 2015), we argue that the enhanced perceived warmth of money is a more important determinant of charitable giving.

The current research contributes to the long-running debate regarding the role of money in human social interactions, and it is the first to examine the anthropomorphism of a currency. Thus, it also contributes to emergent theories on the effects of anthropomorphism on consumer behavior and the psychological mechanisms that underlie this relationship. In the next section, we review the relevant literature and formally develop hypotheses regarding the effects of money anthropomorphism on charitable giving.

THE VALIDITY OF MONEY ANTHROPOMORPHISM

Anthropomorphism refers to the attribution of human characteristics to nonhuman entities (Epley et al. 2008; Epley, Waytz, and Cacioppo 2007; Guthrie 1993). The prior works have shown that anthropomorphism using visual or linguistic portrayals can evoke a human schema (Epley et al. 2007, 2008; Guthrie 1993), which in turn influences people's judgments and behaviors (Aggarwal and McGill 2007; Chandler and Schwarz 2010; Delbaere, McQuarrie, and Phillips 2011; Kim and McGill 2011). Recently, anthropomorphism has attracted increasing attention in the social psychology and consumer behavior research (Aggarwal and McGill 2007; Chandler and Schwarz 2010; Waytz, Cacioppo, and Epley 2010). The consumer behavior research on anthropomorphism has explored various nonhuman entities, such as products (e.g., cookies, lightbulbs, and coffee makers; Delbaere et al. 2011; Hur, Koo, and Hofmann 2015), brands (Aggarwal and McGill 2007; Puzakova, Kwak, and Rocereto 2013), nature (Tam, Lee, and Chao 2013), social causes (Ahn, Kim, and Aggarwal 2014), time (May and Monga 2014), and disease (Kim and McGill 2011). To complement this emerging research line, the current research examines the anthropomorphism of money and its impact on charitable giving.

There are several reasons to believe that people may view money as a person if it is imbued with humanlike characteristics. One reason is that people have a natural tendency to perceive human characteristics in nonhuman entities when such entities are imbued with humanlike features, such as a human face or voice (Epley et al. 2007). Supporting this idea, prior studies have found that people humanize various nonhuman entities, including products, brands, and even time and diseases, when they are equipped with visual or linguistic anthropomorphic cues (Aggarwal and McGill 2012; Kim and McGill 2011; May and Monga 2014). Therefore, money—one of the most commonly encountered objects in everyday life—may also be susceptible to anthropomorphic cues.

Relatedly, the previous studies have shown that a physical resemblance to humans can easily elicit anthropomorphic thinking (Aggarwal and McGill 2007; Epley et al. 2007). Thus, compared with abstract entities such as time

and disease, physical entities such as money can more easily be anthropomorphized when linguistic description or pictorial visualization evokes a physical resemblance to humans (e.g., a humanlike face), which is the focal method we adopted in most of our studies to manipulate money anthropomorphism. For example, a simple Google search of "money clip art" returns pictures of money humanized through pictorial visualization. In addition, in Shanghai, a former currency is humanized in sculptures in the financial district; it is also used in the logos of certain financial organizations (see appendix A).

To further validate money anthropomorphism, we conducted a pilot study ($N = 49$) using Amazon Mechanical Turk (MTurk) and measured individuals' tendency to anthropomorphize money using a well-established anthropomorphism scale (Waytz et al. 2010; e.g., "To what extent do you think of money as having a will of its own?" 1 = not at all, 7 = very much). The mean of money anthropomorphism ($M = 2.95$, SD = 2.14) in our pilot study was comparable to the means of anthropomorphism reported by May and Monga (2014), who used the same anthropomorphism scale for phones ($M = 1.97$; SD = 1.53), cars ($M = 2.10$; SD = 1.44), computers ($M = 2.12$; SD = 1.32), robots ($M = 2.24$; SD = 1.32), mountains ($M = 2.31$; SD = 1.52), brands ($M = 2.40$; SD = 1.52), and time ($M = 3.65$; SD = 1.85). Therefore, the degree of money anthropomorphism observed in our pilot study is comparable to the degree of anthropomorphism observed for other entities in the previous research.

SOCIAL JUDGMENTS AND MIND PERCEPTION

The social psychology research on mind perception has identified two dimensions underlying the perception of human minds in various types of nonhuman entities, including animals, God, and objects: experience and agency (Gray et al. 2007; Gray and Wegner 2010; Waytz et al. 2010). Experience and agency are closely related to the two fundamental dimensions of social judgments: warmth and competence (Fiske et al. 2002, 2007). The warmth dimension captures perceptions of friendliness, helpfulness, and trustworthiness, whereas the competence dimension captures perceptions of intelligence, skillfulness, and capability (Fiske et al. 2007). The literature on the mind perception of nonhuman entities recognizes that the experience and agency dimensions map well onto the warmth and competence dimensions for social judgments (Gray and Wegner 2010; Waytz et al. 2010). We argue that because anthropomorphism leads individuals to perceive nonhuman entities as they perceive humans (Aggarwal and McGill 2007; Epley et al. 2007), these two fundamental dimensions of social judgments—warmth and competence—constitute an effective theoretical narrative for understanding the role of money anthropomorphism in prosocial behavior.

Although these two dimensions have consistently been found in perceptions of other people as well as of nonhuman entities, the previous research has not examined these two dimensions simultaneously to explore the role of anthropomorphism in consumer behavior. Rather, the previous studies have focused on a single dimension for the mechanism of the discovered anthropomorphism effect instead of considering possible changes along the entire spectrum of humanlike mind perception, which includes both warmth and competence. Several articles have focused on the factors related to competence, such as control, power, potency, and agency (Gray and Wegner 2010; Kim and McGill 2011; May and Monga 2014; Puzakova et al. 2013), whereas others have focused on the factors related to warmth, such as the ability to have conscious experiences, interpersonal connectedness, and trust (Ahn et al. 2014; Chandler and Schwarz 2010; Tam et al. 2013; Touré-Tillery and McGill 2015). Therefore, our research is the first to simultaneously examine these two dimensions to show how money anthropomorphism changes perceptions of these two dimensions, which in turn affect people's charitable giving.

THE PERCEIVED WARMTH AND COMPETENCE OF HUMANIZED MONEY

Based on the social judgment literature (Fiske et al. 2002, 2007) and mind perception theory (Gray et al. 2007; Waytz et al. 2010), which suggest that perceiving a human mind means perceiving both the capacity to feel and sense (i.e., warmth) and the capacity to do things (i.e., competence), we hypothesize that when money is imbued with humanlike characteristics, people will be more likely to perceive humanlike minds in money, simultaneously attributing these two fundamental dimensions to it. That is, money as a person will be perceived as warmer and as more competent than money as a mere object or tool. The dehumanization literature supports our hypothesis, suggesting that people may reduce other people's humanness by denying their warmth and competence (Haslam 2006; Jack, Dawson, and Norr 2013). When people deny another person's warmth, that person is construed as cold and robotic (Gray and Wegner 2010; Loughnan and Haslam 2007). When people deny another person's competence, the person is perceived as unintelligent and irrational (Jack et al. 2013; Loughnan and Haslam 2007). Consistent with this notion, Harris and Fiske (2006) found neurological evidence that the medial prefrontal cortex (mPFC), which is responsible for social cognition, was not activated when groups were perceived to be low in both warmth and competence.

To test the premise that money as a human is warmer and more competent than money as an object, we conducted a content analysis study on MTurk ($N = 92$, 55.4% female, $M_{age} = 36.03$ years, $SD_{age} = 10.79$). In the anthropomorphism condition, the participants were asked to imagine that money came to life as a person and to use three descriptors to describe money as a person. In the control condition, the participants were asked to think about money and to use three descriptors to describe money. The participants generated 246 descriptors in total. Two independent coders who were blind to the hypothesis classified the descriptors into four categories: warmth-related (50 descriptors, $\kappa = .884$), coldness-related (76 descriptors, $\kappa = .934$), competence-related (31 descriptors, $\kappa = .776$), and other (89 descriptors, $\kappa = .850$). There were no descriptors of the incompetence of money, and words unrelated to competence and warmth were categorized as "other" (e.g., "a means," "needed," "neutral"). The warmth-related descriptors with the highest frequencies were "generous," "helpful," and "kind." The competence-related descriptors with the highest frequencies were "powerful," "responsible," and "confident." The coldness-related descriptors with the highest frequencies were "greedy," "arrogant," and "selfish."

Further analyses revealed that in the anthropomorphism condition, 27.08% of the descriptors were warmth-related and 16.67% were competence-related, which is significantly greater than their prevalence in the control condition (warmth-related: 10.78%, χ^2 (1) = 7.80; $p = .005$; competence-related: 6.86%, χ^2 (1) = 4.55; $p = .033$). That is, both warmth-related and competence-related descriptors were more often associated with humanized money than with nonhumanized money. It should be noted that the participants in both conditions generated coldness-related descriptors; however, the tendency was significantly weaker in the anthropomorphism condition (24.31%) than in the control condition (40.20%, χ^2 (1) = 4.88; $p = .027$). Thus, anthropomorphizing money reduced individuals' tendency to associate money with coldness-related words.

Moreover, in the control condition, there were more coldness-related words (40.20%) than warmth-related words (10.78%, χ^2 (1) = 7.42; $p = .006$), which supports the prior studies that show negative associations with money (Xie et al. 2014; Yang et al. 2013). However, the pattern was reversed when money was construed as a human (coldness-related words = 24.31%, warmth-related words = 27.08%, χ^2 (1) = 5.26, $p = .021$). This finding is consistent with our premise. We are not arguing that money as a person will be analogous to an extremely warm person, such as Mother Teresa. Rather, we argue that although individuals might to some extent associate humanized money with coldness-related concepts, this tendency will be significantly weaker than when individuals construe money as a mere object or instrument. Our comparison in this research is always between humanized and nonhumanized money, and we propose that humanized money will be construed as warmer (or less cold) than nonhumanized money.

MONEY WARMTH AND CHARITABLE GIVING

We further hypothesize that although money anthropomorphism may enhance both the competence and warmth perceptions of money, charitable giving will increase with an enhanced warmth perception of money but not necessarily with an enhanced competence perception of money. That is, although anthropomorphizing money can cause people to simultaneously impose warmth and competence on money, the former is a more important determinant of charitable giving. Our hypothesis is in line with the prior research on social judgments, which has shown that warmth is the primary dimension in interpersonal contexts; that is, conventional thinking in social psychology suggests that warmth perception is a primary determinant of person perception and evaluation (Fiske et al. 2007; Wojciszke 2005). The warmth dimension explained more than double the variance in trait ratings compared to the competence dimension (Abele and Wojciszke 2007), and warmth-related words were recognized faster and categorized more quickly for valence (Abele and Bruckmüller 2011). The warmth dimension was also shown to be paramount in the perception of nonhuman entities, accounting for 88% of the variance in mind perception, whereas the competence dimension accounted for only 8% of the variance (Gray et al. 2007).

The previous studies on other-directed behaviors provide further evidence about why the warmth perception—rather than the competence perception—of money is a primary determinant of charitable giving. These studies have focused on the factors that can enhance empathetic feelings toward others in need (Batson et al. 1997; Eisenberg and Miller 1987; Richardson et al. 1994), assuming such feelings are a major determinant of other-directed behaviors. The academic research attests to the central role played by empathetic, warm intentions toward others in the initiation and maintenance of positive other-directed behavior, such as the active reconciliation in a romantic relationship, reduced aggressive behavior, and increased prosocial behavior (Batson et al. 1997; Richardson et al. 1994). In contrast, the previous research provides inconclusive findings on the link between competence and helping behaviors. Certain competence-related factors have been shown to increase other-directed behaviors, whereas other competence-related factors have been shown to decrease other-directed behaviors (Piff et al. 2010; Rucker, Dubois, and Galinsky 2011; Sharma and Morwitz 2016). For example, Rucker et al. (2011) found that power reduced spending on others, whereas Sharma and Morwitz (2016) found that self-efficacy increased charitable giving. Thus, the previous

research presents mixed findings regarding the link between competence and other-directed behaviors. Taken together, we predict that the enhanced perceived warmth of money caused by money anthropomorphism, rather than enhanced perceived competence, will be a primary determinant of increased charitable giving.

We also propose that the effect of money warmth on charitable giving is not driven by the mere priming of the warmth concept. Our logic is that when money is associated with warmth by humanization, it may appear to be more qualified to be given away to help others. According to this logic, money anthropomorphism should not enhance charitable giving when money is not the target of donation (i.e., money is not requested for donation to people). That is, simply associating money with warmth is not sufficient to increase any form of charitable giving. Rather, money imbued with warmth via anthropomorphism should be the target of donation in the given situation. In contrast, the warmth priming account predicts that money anthropomorphism should enhance charitable giving as long as people are primed with warmth through money anthropomorphism, regardless of whether money is the target of donation in the given situation. To test our theorization, in one study, we examine a boundary condition in which the money anthropomorphism effect is attenuated when a charity requests the provision of a signature rather than a monetary donation.

OVERVIEW OF THE PRESENT RESEARCH

We tested our predictions in five studies. Studies 1a and 1b provided initial evidence that money anthropomorphism increased charitable giving, by measuring real monetary donation behavior (study 1a) and adopting a practical method for anthropomorphizing money in charitable appeals (study 1 b). The findings from study 2 showed that money anthropomorphism enhanced both warmth and competence perceptions; however, only enhanced perceived warmth led to an increase in donation intention (enhanced perceived competence did not). Study 3 showed that money anthropomorphism did not enhance other types of charitable giving, such as signature provision. Study 4 showed that the money anthropomorphism effect was unique to money and that anthropomorphizing other financial instruments, such as a credit card, did not induce the same effect.

STUDY 1

In studies 1a and 1b, we experimentally manipulated money anthropomorphism to test the causal effect of money anthropomorphism on charitable giving. We predicted that the participants would be more likely to donate money to a charity when they anthropomorphized money than when they did not.

Study 1a

In study 1a, we measured the participants' real monetary donations to a charity. We employed a one-factor (anthropomorphism: present vs. control) between-subject design.

Methods

Ninety undergraduate students from a large public university participated in the study in exchange for monetary compensation (75.60% female; $M_{age} = 21.37$, $SD_{age} = 1.77$). The participants first engaged in a money anthropomorphism task. Then, in an unrelated study, they read information about a local charity, and they were given an opportunity to donate money to the charity.

Money Anthropomorphism Manipulation. The participants first engaged in the money anthropomorphism task along with filler tasks (e.g., product evaluation and simple arithmetic tasks). The money anthropomorphism manipulation was adapted from Chandler and Schwarz (2010). In the anthropomorphism condition, the participants were instructed to imagine that money had come to life and to think about the personality that money would have. They rated money's personality on five bipolar scales representing the big five personality traits (e.g., Introvert/Extravert, Conventional/Unconventional, and Anxious/Calm; Gosling, Rentfrow, and Swann Jr. 2003). To strengthen the manipulation, we also asked the participants to describe the face that money would have based on the personality they had just described. In the control condition, the participants were instructed to think about the physical features of money and to rate them on five bipolar scales (e.g., Thick/Thin, Small/Large, and Colorful/Colorless). They were then asked to describe what they thought the new banknotes would look like if their country launched new ones. We also measured manipulation-check items as we did in the pilot study, but we used a five-point scale in this study and in subsequent studies. The study lasted for approximately 30 minutes. Upon completion of the task, the participants received their compensation (15 RMB = USD 2.46).

Charity Materials and Measures. Before leaving, the participants were given materials about a local charity. They were informed that the charitable organization was raising money to send clothes to Nepal to help the victims of the earthquake. Of note, the study was conducted immediately following the Nepal earthquake. To minimize concerns about self-presentation or social judgments, we gave the participants the opportunity to donate their experiment payment anonymously by placing their contribution in an envelope and putting the envelope in a collection box as

they exited the lab. The box was placed outside the lab, and the participants were asked to place the empty envelope in the collection box if they chose not to donate. The amount of money donated to the charity served as our main dependent variable.

Results and Discussion

Donation Rate and Amount. First, we compared the percentage of people who donated across the two conditions. The participants in the anthropomorphism condition (72.09%) were more likely to make a donation than those in the control condition (46.81%, $\chi^2(1) = 5.77$, $p = .016$). Then, we conducted an independent *t*-test to examine whether the donation amount differed in the two conditions. The donation amount was positively skewed (skewness = 1.75, SE = .25); thus, we log-transformed the amount after adding 1 to each score to include the zero values. In our analysis, the main results remained significant regardless of whether we log-transformed the donation amount. For ease of interpretation, we reported untransformed donation amounts. The participants in the anthropomorphism condition donated significantly more money (M = US$0.49, SD = 0.58) than did the participants in the control condition (M = US$0.22, SD = 0.41, $t(88) = 2.53$, $p = .013$, $d = .54$). That is, money anthropomorphism increased the average donation by 119.29%.

Study 1a shows that when participants construed money as a person with humanlike characteristics rather than as a mere object, they not only were more likely to donate money but also donated more money. In study 1b, we adopted a more practical method to anthropomorphize money to generalize our findings.

Study 1b

Although we adopted a previously validated anthropomorphism manipulation in study 1a (Chandler and Schwarz 2010), it may be difficult to directly implement this manipulation method in charitable campaigns. Therefore, in this study, we developed a more natural and practical way to anthropomorphize money to enhance the external validity of our findings.

Methods

We recruited participants from a Chinese online panel (https://www.sojump.com/) that is similar to MTurk Prime in that it provides a large subject pool with qualified participants. This method allowed us to recruit real consumers in mainland China. One hundred seventy-two participants with various backgrounds were recruited. Eight participants who failed to complete the survey were excluded from the final analyses. The remaining 164 participants provided compete datasets (52.40% female; $M_{age} = 34.65$, $SD_{age} = 9.29$).

Money Anthropomorphism Manipulation and Measures. We manipulated money anthropomorphism by inserting money clip art into the donation appeal of a real charity (see appendix B for the donation appeals translated into English). Specifically, the money clip art in the anthropomorphism condition had anthropomorphic features (e.g., a humanlike face), whereas the money clip art in the control condition did not have such features. After reading the appeal, the participants indicated their donation intention with two items (e.g., "How interested are you in donating money?" 1 = not at all, 7 = very much) and how much (in local currency units) they were willing to donate to the charity. In addition, to eliminate the possibility that the effect was driven by the perceived cuteness of the anthropomorphized money, we measured the extent to which the participants perceived the money clip art to be cute (1 = not cute at all, 5 = very cute).

To check whether our manipulation was successful, we conducted an independent pretest with the donation appeals we used in the main study ($N = 55$, 47.30% female, $M_{age} = 34.88$, $SD_{age} = 7.34$). We measured the same manipulation-check items as in study 1a ($\alpha = .88$). An independent *t*-test showed that the participants in the anthropomorphism condition rated money as more humanlike ($M = 3.51$, SD = 1.01) than did those in the control condition ($M = 2.95$, SD = 0.98, $t(53) = 2.09$, $p = .041$, $d = .56$), confirming the success of our money anthropomorphism manipulation.

Results

We averaged the two items for donation intention ($r = .64$, $p < .001$). Consistent with our prediction, an independent *t*-test revealed that the participants in the anthropomorphism condition were more willing to donate ($M = 4.84$, SD = 1.46) than those in the control condition ($M = 4.35$, SD = 1.63, $t(162) = 2.04$, $p = .043$, $d = .32$). Then, we used an independent *t*-test to examine whether the amount that the participants were willing to donate differed in the two conditions. Since the donation amount was positively skewed (skewness = 5.13, SE = .19), we log-transformed it, as we did in study 1a. Since the results were identical regardless of log transformation, we reported untransformed donation amounts for ease of interpretation. An independent *t*-test showed that the participants in the anthropomorphism condition were willing to donate more money (M = US$15.48, SD = 28.18) than those in the control condition (M = US$6.60, SD = 8.72; $t(162) = 2.81$, $p = .006$, $d = .43$). In addition, the money clip art in the anthropomorphism condition was not considered to be cuter ($M = 2.53$, SD = 1.13) than that in the control condition ($M = 2.69$, SD = 1.17, $t(162) = .93$, $p = .355$, $d = .14$), indicating that the effect is not driven by the perceived cuteness of anthropomorphized money.

Discussion

This study shows that inserting an image of money imbued with humanlike characteristics into donation appeals effectively induces money anthropomorphism and increases charitable giving. To further test the money symbols used in this study, we conducted a post-test ($N = 60$, 70.00% female, $M_{age} = 33.89$, $SD_{age} = 10.13$) to measure individuals' perceptions of the money symbols. Specifically, we measured the participants' perceptions of money warmth (e.g., caring, friendly) and money competence (e.g., intelligent, energetic, Judd et al. 2005). The results showed that the participants perceived the anthropomorphized money symbol as being warmer ($M = 5.19$, $SD = 1.38$) and more competent ($M = 5.47$, $SD = 1.16$) than the money symbol in the control condition ($M_{warmth} = 4.10$, $SD = 1.76$, $t(58) = 2.68$, $p = .009$, $d = .69$; $M_{competence} = 3.96$, $SD = 1.74$, $t(58) = 3.95$, $p < .001$, $d = 1.02$). Thus, the anthropomorphized money symbol induced perceptions of both money warmth and money competence. In the next study, we tested the mechanism for the positive effect of money anthropomorphism on donation intentions with a mediation analysis.

STUDY 2

In this study, we measured the perceived warmth and competence of money to test the underlying mechanism for the money anthropomorphism effect. We predicted that money anthropomorphism would enhance both warmth and competence perceptions of money but that only enhanced warmth perception, and not necessarily enhanced competence perception, would increase donation intention. This study employed a one-factor (anthropomorphism: present vs. control) between-subject design.

Methods

The participants were recruited from MTurk. In the subsequent MTurk studies, we used the method of Peer et al. (2012) to screen the participants from the previous studies. Forty participants who responded incorrectly to the instructional manipulation check (Oppenheimer, Meyvis, and Davidenko 2009) were excluded from the analyses, leaving 141 participants for the data analyses (36.20% female; $M_{age} = 34.90$, $SD_{age} = 11.91$). First, we manipulated money anthropomorphism and measured manipulation-check items as in study 1a. Then, the participants read a charitable appeal and indicated their donation intention.

Charity Materials and Measures. As in study 1a, the participants read a charitable appeal to help children in Nepal, which was retrieved from the UNICEF website (http://www.unicef.org). After reading the appeal, the participants indicated their donation intention with two items as in study 1b. We also measured the participants' warmth and competence perceptions of money by asking them to think about the extent to which a number of descriptors applied to money (1 = not applicable to money at all, 7 = extremely applicable to money). The descriptors were based on the warmth-competence scale developed by Judd et al. (2005). Five descriptors were related to warmth (i.e., caring, friendly, kind, warm, and sociable) and four were related to competence (i.e., intelligent, energetic, organized, and motivated).

Results

Manipulation Checks. We averaged the seven items ($\alpha = .95$), and an independent t-test showed that the participants in the anthropomorphism condition rated money as more humanlike ($M = 2.47$, $SD = 1.24$) than did those in the control condition ($M = 1.99$, $SD = 1.18$, $t(139) = 2.36$, $p = .020$, $d = .40$).

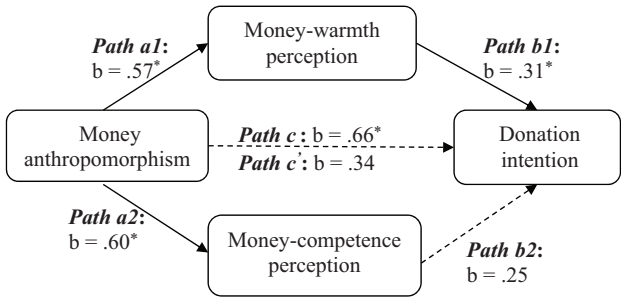
Donation Intention. We averaged the two items to measure donation intention ($r = .90$, $p < .001$). An independent t-test revealed that the participants in the anthropomorphism condition were more willing to donate money to children in Nepal ($M = 4.54$, $SD = 1.78$) than were those in the control condition ($M = 3.88$, $SD = 2.11$, $t(139) = 2.02$, $p = .046$, $d = .34$).

Money-Warmth and Money-Competence Perceptions. We averaged the five warmth items ($\alpha = .89$) and the four competence items ($\alpha = .88$). Two separate independent t-tests showed that the participants in the anthropomorphism condition assigned money greater warmth ($M = 4.25$, $SD = 1.30$) and competence ($M = 4.91$, $SD = 1.23$) than did those in the control condition ($M_{warmth} = 3.68$, $SD = 1.84$, $t(139) = 2.12$, $p = .036$, $d = .36$; $M_{competence} = 4.31$, $SD = 1.86$, $t(139) = 2.27$, $p = .025$, $d = .38$). That is, our money anthropomorphism manipulation led the participants to perceive money as warmer (or less cold) and more competent than those in the control condition.

Mediation Analyses. To test whether warmth and competence perceptions mediated the effects of money anthropomorphism on donation intention, we conducted a bootstrapped mediation analysis (Hayes 2013; Zhao, Lynch, and Chen 2010; see figure 1). The analysis revealed that the indirect effect of money anthropomorphism on donation intention through warmth perception was significant ($b = .17$, $SE = .12$, 95% CI [.01, .54]), whereas the indirect effect through competence perception was not ($b = .15$, $SE = .12$, 95% CI [–.01, .49]). Thus, although money anthropomorphism enhanced both warmth and competence perceptions of money, only an enhanced warmth perception of money significantly influenced donation intention.

FIGURE 1

MEDIATION ANALYSIS IN STUDY 2



*$p < .05$

Discussion

Study 2 replicated the finding of studies 1a and 1b: money anthropomorphism increased charitable giving. In addition, we showed that the money anthropomorphism effect was mediated by the perceived warmth of money but not by the perceived competence of money. The previous studies on prosocial behavior consistently documented that the extent to which a person can have empathetic feelings toward others in need (i.e., warmth) significantly influences the person's helping intentions and behaviors (Batson et al. 1997; Richardson et al. 1994). However, the findings on the role of the ability to help others (i.e., competence) in prosocial behavior have been inconclusive (Côté, House, and Willer 2015; Eisenberg et al. 1996; Flook et al. 2015; Piff et al. 2010). That is, a feeling that one is competent does not always lead to greater charitable giving. In line with these studies, our findings indicate that although money anthropomorphism can simultaneously enhance warmth and competence perceptions of money, donation intentions are primarily enhanced by warmth perception.

In two additional studies (see web appendixes A and B), we further examined the underlying mechanism of the money anthropomorphism effect. In one study, we directly manipulated process measures. The findings showed that money anthropomorphism enhanced donation intention when the participants construed money as a warm, communal person but not when they construed money as a competent, agentic person (see web appendix A for more details). In the other study, we examined the perceived importance of warmth in human traits as a theoretically meaningful moderator for the link between money anthropomorphism and money-warmth perception. The findings indicated that money anthropomorphism increased perceived money warmth only among people who believed that warmth was an important human trait (see web appendix B for more details). In the next study, we tested whether money anthropomorphism could also increase the types of donations aside from monetary donation, and we rule out possible alternative explanations for the money anthropomorphism effect.

STUDY 3

In this study, we further test our theorization of the money anthropomorphism effect by examining other forms of charitable giving in addition to monetary donations. We predict that money anthropomorphism will not increase other forms of charitable giving, such as the provision of signatures. Our logic for money anthropomorphism is that when an instrument, such as money, is construed as being human and is thus associated with warmth, it may seem more qualified for donation as a means to help others. According to this logic, money anthropomorphism should not enhance charitable giving when money is not the target of donation. Thus, we predict that money anthropomorphism would not enhance the provision of signatures.

In addition, this study addresses two alternative explanations for the money anthropomorphism effect. First, the money anthropomorphism effect could have been driven by mere exposure to the human schema. To address this alternative explanation, we added a condition that makes the human schema salient by asking the participants to think of people who own money. This condition also addresses another issue: whether anthropomorphizing money plays a similar role to thinking of people who own money. We argue that anthropomorphizing money is different from thinking of people who own money. The former leads people to imbue warmth to money, while the latter instead can lead people to consider the self-centered tendencies associated with money owners, as money priming does in the prior research (Vohs et al. 2006, 2008). Supporting our notion, the prior work argues that a negative effect of money reminders on helping occurs only when people are reminded of sufficient money (Vohs and Fennis 2012). Considering that such reminders of sufficient money are analogous to our money owner condition, in which the participants thought of a person who has high amounts of money, we do not expect that thinking of money owners enhances charitable giving as money anthropomorphism does.

Second, the money anthropomorphism effect may occur merely because money is linked to an emotional tag associated with warmth. The prior research on emotional accounting (Levav and McGraw 2009) suggests that people will bestow an emotional tag to money based on the source of money, and this emotional tag influences how individuals spend that money. To address this alternative account, we included a condition in which money is positively tagged with warmth by asking the participants to imagine

that their grandmother gave them some money as a birthday gift (Levav and McGraw 2009). We predict that a positive emotional tag associated with money would not induce the same effect as money anthropomorphism does. Consistent with our prediction, Levav and McGraw (2009) show that positively tagged money does not increase charitable giving. Thus, we argue that the emotional tag account cannot explain our money anthropomorphism effect. Taken together, in this study, we employed a 4 (anthropomorphism: money object vs. money anthropomorphism vs. money owner vs. money with an emotional tag) × 2 (target of donation: money vs. signature) between-subject design.

Methods

Five hundred eighteen participants were recruited from MTurk. Thirty participants who responded incorrectly to the instructional manipulation check were excluded from the final analyses, leaving 488 participants for the data analyses (52.90% female; $M_{age} = 37.26$; $SD_{age} = 12.36$).

Anthropomorphism Manipulation. First, the participants engaged in one of four tasks depending on the condition. We manipulated money anthropomorphism using a method employed by Aggarwal and McGill (2012). In the money anthropomorphism condition, the participants were instructed to imagine that money had come to life as a person and to describe the sort of person money would be in terms of personality and physical appearance. In the money object condition, the participants described money in terms of its physical features. In the emotional tag condition, we asked the participants to imagine that their grandmother gave them some money as a gift (adopted from Levav and McGraw 2009). To strengthen the manipulation of a positive emotional tag, we told them that their grandmother went to a bank to get new bills for their grandson or granddaughter, and we asked them to think about the meaning of the money from their grandmother by writing down their thoughts. In the money owner condition, the participants were asked to think about people who have a great amount of money and to write down how they typically thought of these people.

Charity Materials and Measures. Then, the participants read a charitable appeal about the Environmental Defense Fund, which provides solutions for climate change, to benefit oceans, wildlife, and habitats and to provide clean energy (https://www.edf.org; see appendix C). The content of the charitable appeal was identical across all conditions except that the appeal asked either for a monetary donation or for individuals' signatures depending on the condition. That is, half of the participants were asked to indicate their intention to donate money (e.g., "How interested are you in donating money to support the Environmental Defense Fund to protect and defend nature?" 1 = not at all, 7 = very much), while the other half were asked to indicate their intention to provide their signatures (e.g., "How interested are you in signing your name to support the Environmental Defense Fund to protect and defend nature?" 1 = not at all, 7 = very much).

Results and Discussion

Donation Intention. We averaged the two items to measure donation intention ($r = .94$, $p < .001$). A 4 (anthropomorphism: money object vs. money anthropomorphism vs. money owner vs. money with an emotional tag) × 2 (target of donation: money vs. signature) ANOVA on donation intention revealed significant main effects of anthropomorphism ($F(3, 480) = 2.89$, $p = .035$, $\eta_p^2 = .02$) and the target of donation ($F(3, 480) = 22.28$, $p < .001$, $\eta_p^2 = .04$), and a significant interaction ($F(3, 480) = 3.20$, $p = .023$, $\eta_p^2 = .02$, see figure 2). In the money donation condition, there was a significant difference across the four conditions ($F(3, 480) = 4.94$. $p = .002$). Planned contrasts further revealed that the participants in the money anthropomorphism condition ($M = 4.28$, $SD = 1.55$) indicated greater donation intention than those in the money object condition ($M = 3.59$, $SD = 1.71$, $t(480) = 1.88$, $p = .061$, $d = .42$), although the effect was marginally significant. The participants' donation intention in the money owner condition ($M = 3.57$, $SD = 1.77$) was not significantly different from that in the money object condition ($M = 3.59$, $SD = 1.71$, $t(480) = .055$, $p = .958$, $d = .01$), indicating that mere exposure to the human schema did not induce the same effect that money anthropomorphism does.

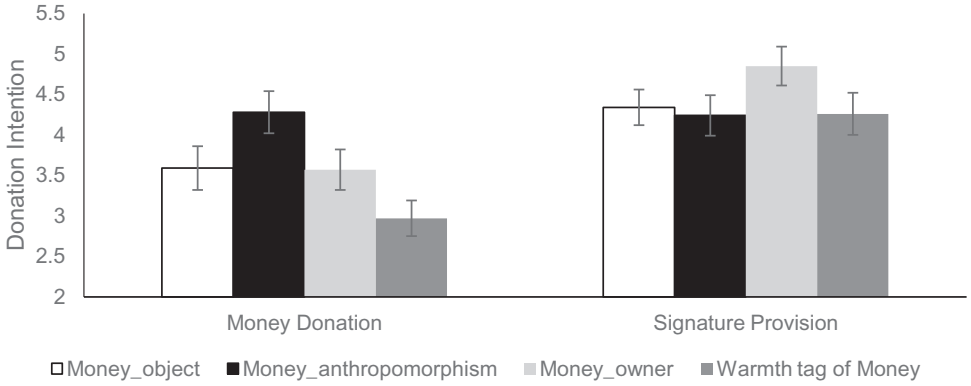
The emotional tag condition ($M = 2.97$, $SD = 1.89$) also did not induce higher donation intention compared to the money object condition ($M = 3.59$, $SD = 1.71$, $t(480) = 1.77$, $p = .077$, $d = .34$); rather, donation intention in the emotional tag condition was marginally lower than that in the money object condition. Thus, the money anthropomorphism effect is not driven by a positive emotional tag attached to money. One reason for our observation of lower donation intention in the emotional tag condition (vs. money object condition) may be because participants considered the money given by their grandmother to be more valuable and were thus less willing to part with it. In the signature provision condition, there were no significant differences in donation intention across the four conditions ($F(3, 480) = 1.44$, $p = .231$). Thus, money anthropomorphism did not enhance the participants' intention to provide their signature, presumably because money was not the target of donation that people can give to help others in this situation.

STUDY 4

In the last study, we examine whether the positive effect of money anthropomorphism on charitable giving is unique to money anthropomorphism or whether anthropomorphizing

FIGURE 2

DONATION INTENTION (MONEY VS. SIGNATURE) IN STUDY 3



other financial instruments such as credit cards will induce the same effect. In one sense, a credit card is a financial instrument with which people can donate money; thus, anthropomorphizing a credit card may also increase monetary donations. However, in another sense, people are ultimately giving away money and not a credit card. Thus, anthropomorphizing a credit card may not enhance monetary donations. To systematically test the role of credit card anthropomorphism in monetary donation, we adopted a 2 (target: money vs. credit card) × 2 (anthropomorphism: present vs. control) between-subjects design.

Methods

Two hundred thirty-eight undergraduate students ($M_{age} = 20.42$, 40.30% male) at a large university in Hong Kong participated in this study in exchange for monetary compensation.

Anthropomorphism Manipulation. Following Aggarwal and McGill's (2012) method as in study 3, in the money (credit card) anthropomorphism condition, the participants were asked to construe money (a credit card) as a human, whereas in the money (credit card) object condition, they were asked to construe money (a credit card) as an object. Then, we measured the same manipulation-check items as in the previous studies.

Charity Materials and Measures. The participants read a charitable appeal that was retrieved from the UNICEF website (http://www.unicef.org). The participants were informed that UNICEF would start a donation program at their university to help children in need of education. Then, the participants were asked to indicate, if they had a chance, how much they would be willing to donate (HK$) to help those children in need. We also measured the participants' warmth perceptions of money or a credit card depending on the condition with the same items in study 2.

Results

Manipulation Checks. A 2 (target: money vs. credit card) × 2 (anthropomorphism: present vs. control) ANOVA revealed only a significant main effect of anthropomorphism ($F(1, 234) = 17.63$, $p < .001$, $\eta_p^2 = .07$), while the other effects were not significant (all $ps > .28$). Planned contrasts revealed that both money and a credit card were perceived to be more humanlike when they were anthropomorphized ($M_{money} = 2.42$, SD = 1.03; $M_{credit\_card} = 2.15$, SD = 1.16) than when they were not ($M_{money} = 1.75$, SD = .87, $t(234) = 3.75$, $p < .002$, $d = .70$; $M_{credit\_card} = 1.76$, SD = .80, $t(234) = 2.20$, $p = .030$, $d = .39$).

Donation Amount. The donation amount was positively skewed (skewness = 3.36, SE = .16); thus, we log-transformed the amount after adding 1 to each score to include the zero values. Consistent with studies 1a and 1b, we reported an untransformed donation amount. A 2 × 2 ANOVA on donation amount (HK$1 = US$0.13) revealed a significant main effect of anthropomorphism ($F(1, 234) = 4.84$, $p = .013$, $\eta_p^2 = .02$) and a significant interaction effect ($F(1, 234) = 8.01$, $p = .005$, $\eta_p^2 = .03$, see figure 3). Planned contrasts showed that anthropomorphizing money enhanced the amount of money participants were willing to donate ($M_{anthro} = US\$8.66$, SD = 10.90; $M_{control} = US\$3.75$, SD = 3.28; $t(234) = 3.59$, $p = .004$, $d = .61$); however, anthropomorphizing a credit card did not ($M_{anthro} = US\$5.60$, SD = 5.68; $M_{control} = US\$6.22$, SD = 7.79; $t(234) = .44$, $p = .66$, $d = .09$).

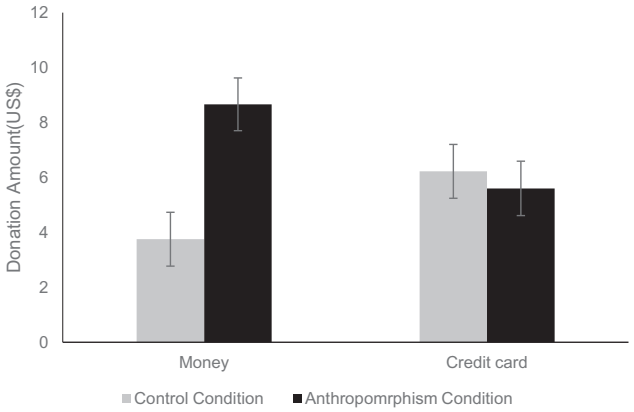
Warmth Perceptions. A 2 × 2 ANOVA on warmth perceptions showed significant main effects of the target variable ($F(1, 234) = 8.85$, $p = .003$, $\eta_p^2 = .04$) and

anthropomorphism ($F(1, 234) = 7.00$, $p = .009$, $\eta_p^2 = .03$) and a significant interaction ($F(1, 234) = 5.00$, $p = .026$, $\eta_p^2 = .02$). Planned contrasts revealed that anthropomorphizing money increased money-warmth perception ($M_{anthro} = 3.35$, $SD = 1.31$; $M_{control} = 2.53$, $SD = 1.18$; $t(234) = 3.48$, $p < .001$, $d = .66$), replicating the previous findings. However, anthropomorphizing a credit card did not enhance credit-card-warmth perception ($M_{anthro} = 3.40$, $SD = 1.22$; $M_{control} = 3.47$, $SD = 1.45$; $t(234) = .29$, $p = .773$, $d = .05$).

Mediation Analyses. A bootstrap analysis (Hayes 2013; Zhao et al. 2010; see figure 4) revealed that warmth perceptions mediated the interaction effect between anthropomorphism and its target (money vs. credit card) on the amount of money (log-transformed) participants were willing to donate (ab = .04, SE = .03, 95% CI = [.003, .12]). Moreover, in the money condition, money-warmth perceptions mediated the effect of money anthropomorphism on donation amount, replicating the findings in study 2 (b = .04, SE = .02, 95% CI [.006, .10]). However, in the credit card condition, the credit-card-warmth perceptions did not mediate the credit card anthropomorphism effect ($b = .004$, SE = .01, 95% CI [–.02, .04]).

FIGURE 3

THE AMOUNT OF MONEY PARTICIPANTS WERE WILLING TO DONATE IN STUDY 4

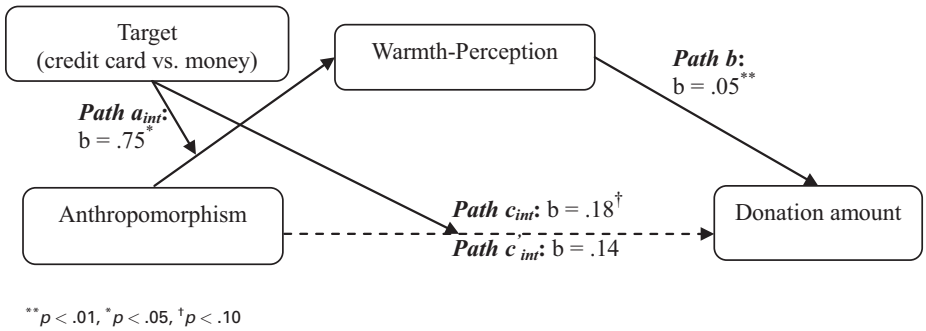


Discussion

In this study, we replicated the findings in the previous study that money anthropomorphism enhances charitable giving by increasing the warmth perceptions of money. We also showed that this effect was unique to money anthropomorphism and that anthropomorphizing other financial instruments such as a credit card did not induce the same effect. However, we acknowledge that it is unclear why credit card anthropomorphism did not induce the same effect as money anthropomorphism. First, anthropomorphism manipulation for a credit card may not have worked. However, our data indicate that this may not be a plausible explanation because the manipulation checks indicated that a credit card was perceived to be more humanlike when it was anthropomorphized than when it was not. Second, it may be because a credit card as an object is less associated with coldness-related concepts than money as an object is, and thus anthropomorphizing a credit card did not further enhance warmth perceptions. Indeed, prior work suggests that credit card priming does not make people impersonal and self-focused as money priming does (Vohs 2015). Our warmth perception measures in this study also support this prior work in that the warmth perceptions of a credit card as an object ($M = 3.40$, $SD = 1.22$) were higher than the warmth perceptions of money as an object ($M = 2.53$,

FIGURE 4

MEDIATION ANALYSIS IN STUDY 4



$^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$

SD = 1.18, $t(234) = 3.67$, $p < .001$, $d = .72$), and that this perception was not significantly different from the rating in the money anthropomorphism condition ($M = 3.35$, SD = 1.31, $t(234) < .001$, $p > .99$). Third, credit card anthropomorphism may not have enhanced credit card warmth because credit cards lack the monetary characteristic of a currency that can be donated to people in need. That is, people are ultimately giving money instead of a credit card. Because credit cards lack such a "giving" characteristic, they may not be imbued with warmth when they are construed as being human. Also, a credit card being an instrumental tool to send another instrumental tool (i.e., money) may seem odd as an anthropomorphized entity. Future research should further explore possible explanations for the credit card anthropomorphism effect.

GENERAL DISCUSSION

The present research investigated the downstream consequences of money anthropomorphism. Across five studies with various money anthropomorphism manipulations and diverse participant populations, we showed that money anthropomorphism encouraged people to exhibit greater intentions to help others and to make larger charitable donations. Study 1a showed that money anthropomorphism increased real money donations. In study 1b, we replicated the finding of study 1a by employing a more practical method of manipulating money anthropomorphism (i.e., inserting money clip art into charitable campaign materials). In study 2, we found that imposing humanlike characteristics on money led people to assign greater warmth and competence to money, but that only enhanced warmth increased donation intention. Study 3 showed that money anthropomorphism did not enhance other types of charitable giving, such as signature provision. This study also showed that the money anthropomorphism effect was not driven by mere exposure to the human schema nor by an emotional tag attached to money. Study 4 showed that anthropomorphizing other financial instruments such as a credit card did not induce the same effect as the money anthropomorphism effect does.

Our finding that people are more likely to donate anthropomorphized money may appear to be at odds with prior work showing that the anthropomorphism of objects and products can make people feel more connected to them (Epley et al. 2007; Tam et al. 2013) and thus less likely to give them away (Chandler and Schwarz 2010). However, it should be noted that the prior work has demonstrated that anthropomorphism does not increase connectedness for all objects and for all consumers. For example, low-power individuals perceived a humanlike (vs. nonhumanlike) slot machine or a disease to be riskier and more avoidable (Kim and McGill 2011), and they also perceived humanized time to be more aversive (May and Monga 2014). Thus, anthropomorphizing objects does not always induce connectedness to those objects. We argue that people may not necessarily feel greater connectedness toward money when it is anthropomorphized. Unlike products owned by individuals to serve a specific purpose (e.g., a doll to please a baby), money is meant to be exchanged for other purposes (Lea and Webley 2006). Therefore, when a product is anthropomorphized, an individual might feel a greater connectedness to the product, assuming that he or she already liked the product (e.g., people feel greater guilt when disposing of long-owned products when the products are anthropomorphized; Chandler and Schwarz 2010). However, money is an instrumental medium that is expected to be exchanged for other things (e.g., products). Thus, people may not necessarily feel greater connectedness toward money when money is anthropomorphized.

Theoretical Implications

Our findings significantly contribute to the prior research on money reminders by providing a new and positive perspective on money reminders. The prior research suggests that money reminders often play a negative role in interpersonal relationships. For example, reminding people of money reduced their tendency to help others and their willingness to ask for help (Tang et al. 2008; Vohs et al. 2006). However, the current research focuses on types of money reminders and suggests that the form and manner of money reminders can change the way in which individuals construe money and in turn influence their charitable giving. Our findings suggest that when money reminders are inevitable (e.g., when a charity seeks money donations), causing people to construe money as a person (rather than as a mere object) increases charitable giving. In addition, building on the prior work showing that reminders of money play different roles from reminders of other financial instruments such as credit cards (Vohs 2015), we found that anthropomorphizing a credit card did not induce the same effect as the money anthropomorphism effect.

Our findings also broaden the current knowledge about anthropomorphism and its role in consumer behavior. Recently, anthropomorphism has attracted much attention in the social psychology and consumer behavior literature (Aggarwal and McGill 2007; Chandler and Schwarz 2010; Hur et al. 2015; Waytz et al. 2010). The present research broadens the scope of this growing field of research by examining money anthropomorphism. The current research is the first to look at anthropomorphizing a currency. Although May and Monga (2014) examined time anthropomorphism and prior research has investigated money and time as different types of currencies (Liu and Aaker 2008; Mogilner and Aaker 2009; Monga, May, and Bagchi 2017), May and Monga (2014) examined waiting time rather than time as a currency. In addition, our findings

provide new insight into the psychological processes underlying anthropomorphism and its downstream social consequences. The current study is the first to examine the entire spectrum of mind perception, which comprises two fundamental dimensions—warmth and competence (Fiske et al. 2002, 2007)—to investigate the effect of anthropomorphism on consumer behavior. In contrast, the previous studies on anthropomorphism focus on a particular dimension (Chandler and Schwarz 2010; Kim and McGill 2011; May and Monga 2014; Touré-Tillery and McGill 2015). Furthermore, the current research demonstrates that anthropomorphism is different from other seemingly similar yet different phenomena. Specifically, we show that anthropomorphizing money is different from priming warmth-related concepts or tagging positive emotions to money. We also show that merely activating the human schema did not induce the same effect as money anthropomorphism.

Furthermore, our research contributes to the literature on charitable giving. Increasing consumers' willingness to donate has long been the subject of research, and extensive studies have identified various situational factors that influence prosocial behaviors, including reminders of death or God (Ferraro, Shiv, and Bettman 2005; Shariff and Norenzayan 2007); certain types of emotions, such as awe, nostalgia, or gratitude (Piff et al. 2015; Rudd, Vohs, and Aaker 2012; Zhou et al. 2012); various mediums (e.g., donating money vs. time, Liu and Aaker 2008); references to hedonic versus utilitarian products (Savary, Goldsmith, and Dhar 2015); personal closeness with the victim (Small and Simonsohn 2008); and identification with the victim (Small and Loewenstein 2003). The present research complements these studies by showing that the anthropomorphism of money, which is the most important resource in charitable giving, could significantly increase charitable donations.

Practical Implications

Charitable giving is a US$358 billion industry in the United States (Giving USA Foundation 2015). Charities routinely ask people to donate money. However, asking people directly for money donations can backfire because this approach focuses people's attention on money. The previous studies have shown that reminders of money as an object activate a value-maximization mindset (Liu and Aaker 2008), enhance perceptions of self-sufficiency (Vohs et al. 2006, 2008), and increase endorsement of free-market systems (Caruso et al. 2013), all of which can negatively affect other-directed behaviors. Thus, avoiding the negative reactions evoked by the concept of money and effectively soliciting charitable donations are major challenges for charitable organizations.

The present research provides a novel set of empirical results to guide the development of practices for soliciting charitable donations. Our research suggests that one way to increase money donations is to impose warmth on money through anthropomorphism. For example, before asking for donations, one could describe monetary donations in human terms. Instead of asking people to donate $10 to help those in need, one could ask people to contribute "one Hamilton." Instead of describing how a certain dollar amount of donated money will help a particular charitable cause, one could ask the potential donor to think about the donated money as a human being and consider how this *person* could help its beneficiaries. In addition, as shown in study 1b, charitable organizations could incorporate symbols of humanized money into their charitable appeals.

Future Research

Future research could enrich the current findings in several ways. For instance, future research can further examine the link between money warmth and charitable giving. We argue that enhancing money warmth through money anthropomorphism increases charitable giving because anthropomorphized money may seem more qualified to be given away as a means to help others. However, future research can explore other possible explanations for this effect. Another potential mechanism for this effect might be based on self-perception theory. The previous research has suggested that the warmth perceptions associated with products and objects are contagious for self-perceptions (Ackerman, Nocera, and Bargh 2010; Kang et al. 2011). For example, sitting on a hard and cold chair resulted in fewer other-directed negotiations (Ackerman et al. 2010). Thus, enhanced warmth perceptions by money anthropomorphism might enhance the warmth perceptions of the self and in turn increase charitable giving. Future research can explore this possibility.

In addition, future research can explore other types of consumer behaviors that might be influenced by money anthropomorphism. The current research focuses on charitable giving and shows that in this context, the enhanced perceptions of money warmth (but not necessarily the enhanced perceptions of money competence) increase charitable giving. However, the money warmth effect may extend to other contexts where the money warmth trait is relevant. For instance, anthropomorphizing money may enhance spending on certain products that are associated with warmth, such as children's clothes and toys. In addition, there may be certain contexts in which perceived money competence is a more important determinant of behavioral change. That is, it may be possible that in certain situations, money competence rather than money warmth changes consumer behavior. The prior research has shown that competence takes primacy over warmth when individuals focus on maximizing their own utility—for example, when looking for a good negotiator or evaluating a relationship with a brand or product (Aaker, Garbinsky, and

Vohs 2012). In such situations, enhanced money-competence perceptions by money anthropomorphism might make people think they need less money to hire a negotiator or to buy a product, which in turn could reduce their money spending. Future research can explore the circumstances in which money anthropomorphism can lead to increased or decreased money spending due to changes in money-competence perceptions by money anthropomorphism. Addressing this issue will broaden our understanding of the effects of money anthropomorphism.

Future research can also explore the antecedents of money anthropomorphism. The prior research on anthropomorphism has shown that people tend to perceive nonhuman objects as humanlike when they behave unexpectedly and thereby impose uncertainty on a situation because, in such situations, people can make better sense of the unexpected or uncertain behaviors of nonhuman objects by anthropomorphizing them (Waytz et al. 2010). That is, attributing uncertain behaviors to the humanlike minds of nonhuman objects makes the objects appear more predictable and understandable, which relieves the anxiety caused by uncertainty. Based on these previous studies, future studies can examine whether the factors that impose uncertainty on situations affect the extent to which people impose humanlike characteristics on money. For example, macroeconomic conditions (e.g., stock market volatility), microeconomic conditions (e.g., employment rates), and personality traits (e.g., the need for closure and chronic anxiety levels) may be antecedents of money anthropomorphism.

DATA COLLECTION INFORMATION

The data for the content analysis in the introduction were collected by the third author under the supervision of the first author in February 2017. The data for study 1a were collected by the third author's research assistants at the School of Management Lab, Zhejiang University, in June 2015. The data for study 1b and its pretest were collected by the third author under the first author's supervision using an online panel in China in April 2016. The data for studies 2 and 3 were collected by the third author under the first author's supervision in May 2015 and September 2017, respectively, using Amazon Mechanical Turk. The data for study 4 were collected by a research assistant for the second author at the University of Hong Kong in September 2017. The data for appendix studies 1 and 2 were collected by the third author under the first author's supervision in May and June 2015 and November 2016, respectively, using Amazon Mechanical Turk. The third author analyzed the data and discussed the results with the first and second authors on multiple occasions.

APPENDIX A

EXAMPLES OF ANTHROPOMORPHIZED MONEY

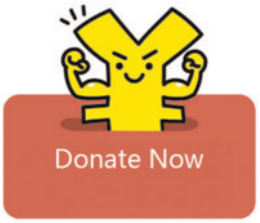
APPENDIX B

DONATION APPEAL IN STUDY 1B: ANTHROPOMORPHISM CONDITION

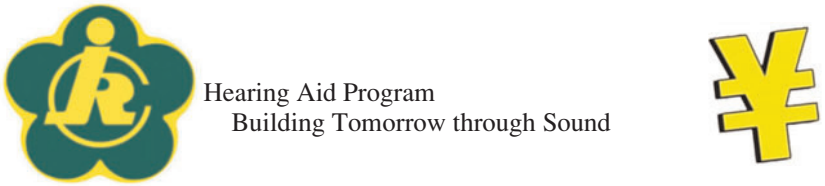
Hearing Aid Program
Building Tomorrow through Sound

There are 137,000 children aged six years and younger with hearing disabilities in China, and nearly 115,000 of these children have severe hearing problems (84% of the total). Most of these children cannot hear or speak even when wearing hearing aids. These children need cochlear implants to significantly rebuild their hearing. Cochlear implants are a high-tech product consisting of modern biomedical and microelectronic technology. However, due to the high price of cochlear implants (approximately $15,000–23,000/each) and the substantial cost of surgery and rehabilitation, most families cannot afford this treatment, which means that many hearing-impaired children miss the optimal treatment stage.

Since 2006, the China Foundation for Disabled Persons has helped 11,250 hearing-impaired children to obtain cochlear implants with public donations. However, many children are still waiting for our help. Please extend a helping hand and join our "Hearing Aid Program" to allow these children to hear all of the beautiful sounds in the world!



DONATION APPEAL IN STUDY 1B: CONTROL CONDITION



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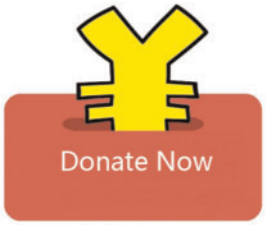
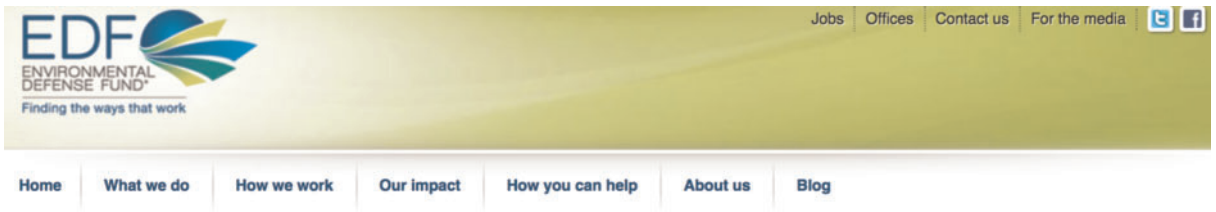


APPENDIX C

DONATION APPEAL IN STUDY 3: MONEY DONATION CONDITION



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The **Environmental Defense Fund** is perhaps the most wide-ranging organization, working to provide solutions under the broad categories of climate change, oceans, wildlife and habitats, and health.

We address today's most urgent environmental challenges by targeting issues that affect people around the world. We work with other organizations, businesses, government, and communities to create incentives for positive environmental actions; help companies become better environmental stewards; influence policy; and keep tabs on emerging issues.

The following are the major objectives:

1. We're focused on the solutions that will have the biggest impact, such as removing obsolete rules that hamper the clean energy market in the U.S.
2. We're meeting demands for food, water, and shelter in ways that allow people and nature to prosper.
3. We use the dual levers of public policy and corporate leadership to drive down exposure to pollutants and toxic chemicals.

We are asking for **monetary donations** to make the world cleaner and safer. No matter how big or small, your donations are needed and appreciated.

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DONATION APPEAL IN STUDY 3: SIGNATURE PROVISION CONDITION

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We are asking for **your signature** to support our objectives, which will help us pass policies to make the world a cleaner and safer place. Each individual's signature is greatly appreciated.

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