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An unintended consequence of social distance regulations: COVID-19 social distancing promotes the desire for money

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Social distance regulations have been widely adopted during the global COVID-19 pandemic. From an evolutionary perspective, social connection and money are interchangeable subsistence resources for human survival. The substitutability principle of human motivation posits that scarcity in one domain (e.g., social connection) could motivate people to acquire or maintain resources in another domain (e.g., money). Two experiments were conducted to test the possibility that COVID-19 social distancing enhances the desire for money. Results showed that compared with controls, participants receiving social distancing primes (via recollection of experiences of social distancing or a Chinese glossary-search task) offered less money in the dictator game, showed lower willingness towards charitable donation (Experiment 1; $N = 102$), donated less money to a student fund, and rated money as having more importance (Experiment 2; $N = 140$). Our findings have far-reaching implications for financial decisions, charitable donations, and prosociality during and after the COVID-19 pandemic.

To deal with the global COVID-19 pandemic, most countries around the world have implemented social distance regulations (Parmet & Sinha, 2020). From an evolutionary perspective, obtaining money is one of the primary challenges for survival in modern societies (Lea & Webley, 2006). In a similar vein, social connection may serve as a means to achieve wants and needs from human society (Lasaleta, Sedikides, & Vohs, 2014). According to one perspective on human motivation (Carver, 2004), cues that signal deprivation of one subsistence resource (e.g., social connection) should increase the desire for others (e.g., money). In this article, we provide the first demonstration that social distancing may promote the desire for money, especially under the social distance regulations for control of the COVID-19 pandemic. The link between social distancing and the desire for money is crucial to understanding how strongly social distance regulations impact money-related decision in the COVID-19 pandemic.

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Social distancing and the desire for money

Evolutionary psychologists hold that the desire to form and maintain social bonds has an evolutionary basis (Ainsworth, 1989; Buss, 1991). Humans rely on each other to get what they want and need (Baumeister & Leary, 1995). The desire to obtain money is one of the strongest motivations for humans living in modern societies (Briers, Pandelaere, Dewitte, & Warlop, 2006). Money is considered an instrument for the satisfaction of wants and needs because we use it to procure basic necessities, shelter, and interpersonal resources (Lea & Webley, 2006). Money enables people to obtain what they want from the society and the culture, a type of instrumental value that also underlies connections with others (Lasaleta & Vohs, 2013). Hence, it would be reasonable to argue that social connection and money are interchangeable with regard to people's striving for survival and success (See Lasaleta et al., 2014, for a similar idea).

Given that social connection is important to humans' survival, the meaning of life, and overall well-being (Stavrova & Luhmann, 2016), it is crucial for people to monitor abundance or scarcity in social connection. According to a fundamental principle of the self-regulation of motivation and action (Carver, 2004), cues that signify scarcity in one domain might motivate people to acquire or maintain resources in another domain (Briers et al., 2006). Following this substitutability hypothesis, we suggest that the desire for social connection and the desire for money are closely intertwined. Some behavioural evidence supports this proposal. For example, Lasaleta and Vohs (2013) showed that participants who recalled instances of social support rated financial success and business skills (both related to the acquisition of money) as less important than those who recalled a number of facts they had learned. In another experiment, participants who were reminded of their friends scored lower on a money importance scale than did those reminded of facts, indicating that a surge in social connectedness may reduce the desire for money (Lasaleta et al., 2014).

In principle, the substitutability hypothesis of subsistence resources proposes that people treat money and social connection as interchangeable resources. Prior research has shown that a feeling that social connection is plentiful decreased the desire for money (e.g. Lasaleta et al., 2014) and vice versa (e.g., Vohs, Mead, & Goode, 2006; Zhou, Vohs, & Baumeister, 2009). However, little research has empirically tested whether experiencing scarcity in social connection (i.e., social distancing) would increase the desire for money. The current research aimed to rectify this research gap. Therefore, our investigation examined the possibility that people may have more desire for money under the impact of COVID-19 social distancing.

The current research

Building on the notion that social distancing may signify scarcity in one subsistence resource and thereby motivate people to acquire or maintain other subsistence resources (e.g., money), we conducted two experiments to examine whether reminding participants of COVID-19 social distancing would motivate them to strive for money. Experiment 1 tested whether social distancing primes (recalling experiences of social distancing) would enhance the desire for money, as evidenced by offering less money in the dictator game and showing lower willingness to contribute money to a charity. Experiment 2 tested the hypothesis that participants primed with social distancing (via a Chinese glossary-search task, Bargh, Gollwitzer, Lee-Chai, Barndollar, & Troetschel, 2001) would consider money more important and donate less money to a student fund.

EXPERIMENT 1

Method

Participants

A total of 102 college students (52 women; mean age = 20.9 years, SD = 1.6) were recruited and then tested in a between-subjects experiment. They received course credit for participation. The required sample size was determined for testing the mean difference between two independent groups under the following conditions: α = .05, d = 0.50 (medium effect size; Cohen, 1988), and power = .80. The present study was approved by our university Institutional Review Board.

Procedure

To disguise the purpose of the experiment, participants were told that they would be helping us with pilot testing of unrelated tasks. After providing consent, every two participants were assigned to one of two study conditions (social distancing vs. control) via a block-randomized schedule. We employed the emotional-event recollection technique (Chao, Cheng, & Chiou, 2011; Leith & Baumeister, 1996) to prime experiences of social distancing. For the social distancing condition, participants were asked to recall a salient and impressive event that made them feel a strong sense of social disconnection due to the government's social distance regulations around COVID-19. For the control condition, participants were asked to recall a routine event from before the COVID-19 pandemic. It has been argued that manipulation checks may amplify, undo, or interact with the effects of a manipulation (Hauser, Ellsworth, & Gonzalez, 2018). Therefore, we conducted a pilot study (N = 56; 30 females) to check on the effectiveness of our manipulation. Participants in the social distancing condition reported a higher level of felt social distancing (M = 4.79, SD = 1.50) on a 7-point scale (1 = *not at all*, 7 = *very much*) than those in the control condition (M = 3.75, SD = 1.51), $t(54)$ = 2.579, p = .013, Cohen's d = 0.75, 95% confidence interval (CI) [0.23, 1.84]. These results confirmed that our manipulation affected immediate feelings of social distancing. After the recall task, all participants were asked to rate the availability of social connection in their immediate experience on a 7-point scale (1 = *not available at all*, 7 = *very available*).

Following the experimental manipulation, each participant played a one-trial, anonymous version of the dictator game (Hoffman, McCabe, Shachat, & Smith, 1994). The dictator game includes two roles: a proposer and a recipient. In this case, the proposer had NT $300 (approximately US $10; 30 units of money @ NT 10$ per unit) to allocate between him/herself and the recipient. Participants were told that the proposer decides unilaterally how much (if any) to give to the recipient. The recipient can choose to accept or reject the offer. All participants played as the proposer because the only available role cards, which they selected from a box, indicated 'proposer' (e.g., Chiou & Cheng, 2013; Lasaleta et al., 2014; Wu, Wu, & Chiou, 2017). It was reasoned that as the desire for money increased, the amount of money offered would decrease. The amount of money offered served as the dependent measure (i.e. an indicator of a desire for money, Lasaleta et al., 2014).

After the dictator game, participants completed a short demographic questionnaire in which we embedded an item ('How willing would you be to donate money to a charity if you had some spare money right now') to measure participants' willingness to donate money (1 = *not at all* to 7 = *very much*). During the probe, none of our participants guessed the real purpose of this experiment. To avoid participants' disclosing the goal of

the experiment to fellow students, the debriefing occurred through e-mail 5 days after the experiment.

Results and Discussion

An independent *t*-test on the availability of social connection revealed that participants in the social distancing condition perceived social connection as being less available ($M = 3.18$, $SD = 1.35$) than did participants in the control condition ($M = 4.22$, $SD = 1.43$), $t(100) = -3.767$, $p < .001$, Cohen's $d = 0.75$, 95% CI [−1.59, −0.49] (see Table 1). Moreover, among all participants, a felt sense of social connection availability was correlated with offering less money in the dictator game ($r = .531$, $p < .001$) and lower willingness to donate money ($r = .567$, $p < .001$).

In Table 1, as predicted, participants in the social distancing condition offered less money (M = NT \$67.65, $SD = 36.53$) in the dictator game (an amount of NT \$300 available to offer) than did those in the control condition (M = NT \$87.84, $SD = 39.46$), $t(100) = -2.682$, $p = .009$, $d = 0.53$, 95% CI [−35.14, −5.26]. Similarly, participants receiving social distancing primes were less willing to donate money ($M = 3.22$, $SD = 1.32$) than were control participants ($M = 4.04$, $SD = 1.02$), $t(116) = -3.533$, $p < .001$, $d = 0.70$, 95% CI [−1.29, −0.36]. In addition, the effects of social distancing on the two indicators of desire for money were not associated with participant sex (Fs < 1, ps > .05).

Following Preacher and Hayes (2004), a bootstrap analysis was employed to examine whether felt availability of social connection mediated the link between the experimental condition (dummy code: 1 = social distancing, 0 = control) and the amount of money offered in the dictator game (see Figure 1). When we controlled for felt availability of social connection, the effect of social distancing on the amount of money offered in the dictator game ($B = -20.20$, $SE = 7.53$, $t = -2.682$, $p = .009$) was no longer significant ($B = -6.41$, $SE = 7.07$, $t = -0.904$, $p = .367$). The 95% bias-corrected CI [−23.65, −6.10] for the indirect effect ($B = -13.84$, $SE = 4.48$; bootstrap resamples = 5,000) excluded zero, suggesting significant mediation. With respect to the willingness to donate, the

Table 1. Availability of social connection and desire for money as a function of condition

	Experimental condition			
	Social distancing		Control	
Experiment and measures	Mean	95% CI	Mean	95% CI
Experiment 1				
Availability of social connection (1–7)	3.18	[2.80, 3.56]	4.22	[3.81, 4.62]
Amount of money offered in the dictator game (NT dollar)	67.65	[57.37, 77.92]	87.84	[76.74, 98.94]
Willingness to donate money (1–7)	3.22	[2.85, 3.59]	4.04	[3.75, 4.33]
Experiment 2				
Availability of social connection (1–7)	3.34	[3.03, 3.66]	4.21	[3.86, 4.57]
Amount of money donated to the fund (NT dollar)	30.36	[25.10, 35.61]	40.86	[35.10, 46.61]
Money importance (1–7)	5.10	[4.78, 5.42]	4.41	[4.09, 4.74]

Note. CI = confidence interval.
Units of the dependent measure are presented in parentheses.

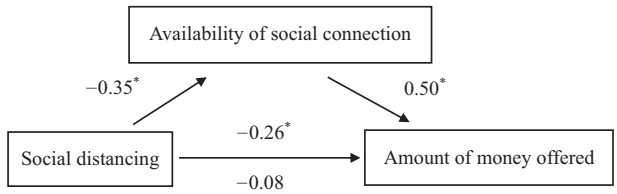

Figure 1. Mediation of the effect of social distancing on the amount of money offered in the dictator game. Values are standardized regression coefficients. On the lower path, the values below and above the arrow are the results of analyses in which the mediator was and was not included in the model, respectively. An asterisk indicates a *p*-value of < .05.

connection between social distancing and willingness to donate money ($B = -0.82$, $SE = 0.23$, $t = -3.533$, $p < .001$) was no longer significant ($B = -0.38$, $SE = 0.22$, $t = -1.745$, $p > .05$) when we controlled for felt availability of social connection. Furthermore, the indirect effect of social connection availability was significant (bootstrap resamples = 5,000), $B = -0.44$, $SE = 0.14$, 95% bias-corrected CI [−0.78, −0.22], indicating that the effect of social distancing on willingness to donate was mediated by social connection availability.

Our first experiment indicated that feeling less availability to social connection induced by recalling experiences of social distancing increased the desire for money, as manifested by keeping more money in the dictator game and a lower willingness to donate money. The present findings lend support to the psychological link between the incentive value of money and the incentive value of social connection (Lasaleta et al., 2014; Vohs et al., 2006), suggesting that people's desire for money may rely on their psychological availability of social connection.

In our first study, participants under the control condition were instructed to recall a routine event from before the COVID-19 pandemic, whereas those under the social distancing condition were instructed to recall a social disconnection event during the COVID-19 pandemic. This was done to exclude the possibility that the routine event recalled under the control condition might involve the impact of social distance regulations. It appears that the routine event recalled under the control condition (i.e., before the pandemic) was more distant than the event recalled under the social distancing condition. In addition to priming social distancing, this manipulation may also have primed the temporal distance of recalled events. According to construal level theory (Trope & Liberman, 2010), distant events tend to be construed as more abstract representations (high-level construals), whereas near events tend to be construed as concrete representations (low-level construals). Activating high-level construals may lead individuals to delay immediate gratification (Fujita & Carnevale, 2012) and therefore make control participants less sensitive to desires, such as that for money. Moreover, we employed the dictator game as an index of the desire for money in Experiment 1. However, Galizzi and Navarro-Martinez (2019) showed that economic games of this type have low ecological validity and tend not to predict real world outcomes. Therefore, Experiment 2 used another priming manipulation (i.e., a Chinese glossary-search task) and alternative measures of desire for money (actual money donations and money importance) to replicate the link between social distancing and a heightened desire for money. In addition, reminding participants of COVID-19 social distancing may prime threat in relation to COVID-19, which leads people to shore up monetary resources.

Therefore, we included a measure of perceived threat of COVID-19 in the replication study to exclude this alternative account.

EXPERIMENT 2: A REPLICATION STUDY

Method

Participants

To expand the generalizability, we recruited 140 people from the community (aged 20–64 years, mean age = 36.6, *SD* = 9.3; 71 females) through flyers distributed in the 9 district offices in Kaohsiung and online posters on Facebook. The method using to estimate the required sample size in the replication was identical to that of Experiment 1, except that the power condition was increased from .80 to .90. Each participant was paid NT $120 (approximately US $4.0) in NT $10 coins for participation. This was done to ensure that participants had money to donate. This study was approved by the Institutional Review Board of our university.

Procedure

Upon arrival, participants were told that they were helping us to test unrelated tasks that would be used in future studies. After providing consent, every two participants were randomly assigned to one of the two study conditions (social distancing vs. control) via the block randomization method. Following Bargh et al. (2001), we used a Chinese glossary-search task to prime social distancing. Participants were instructed to search for seven target terms embedded in a 9 × 9 array of Chinese characters. In the social distancing condition, the targets were six items associated with social distance regulations (*avoiding gatherings*, *city lockdown*, *home quarantine*, *home isolation*, *social distancing*, and *take-out only*). In the control condition, these items were not related to social distance regulations (e.g. *citizen diplomacy*, *Confucianism*, *playing house*, *township office*, *travelling*, *out of the loop*). We conducted a pilot study (N = 58; 32 females) to check the effectiveness of the manipulation. As intended, participants receiving social distancing primes reported a greater sense of felt social distancing (M = 4.83, SD = 1.44) than did those receiving neutral primes (M = 3.86, SD = 1.55), t (56) = 2.455, p = .017, 95% CI [0.18, 1.75], confirming that our manipulation altered feelings of social distancing.

After completing the glossary-search task, participants rated their psychological availability of social connection (1 = *not available at all*, 7 = *very available*), as in Experiment 1. At the end of this experiment, participants were asked to complete a short demographic questionnaire that included a question assessing money importance ('Frankly speaking, having money is something that I value') on a seven-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Based on Kim (2020), two items assessing perceived of COVID-19 (i.e. 'How life-threatening is COVID-19?/In your opinion, is COVID-19 a serious threat?', 'How much are you worried about being infected by the coronavirus?') on seven-point scales (1 = *not at all life-threatening/ serious*, 7 = *very life-threatening/serious*; threatening, Cronbach's α = .883) were included in the filler questionnaire. Higher scores represent greater perceptions of COVID-19 as a threat. Finally, the experimenter announced that the laboratory was taking donations for the University Student Fund, providing an opportunity to donate: 'If you would like to donate, great; if not, don't worry about it. It's completely up to you'. (Chiou & Cheng, 2013) Each

participant was left alone to drop a donation in the box by the door or not. We conducted a post-experimental probe, which indicated that none of the participants guessed the real purpose of the experiment.

Results and Discussion

Age (social distancing: $M = 35.8$, $SD = 9.73$; control: $M = 37.3$ years, $SD = 8.86$; $t(138) = 0.953$, $p = .342$) and participant sex (social distancing: 37 females; control: 34 females; $\chi^2(138) = 0.257$, $p = .612$) were not associated with experimental condition, indicating that our random assignment created equivalent groups. Moreover, our three measures (i.e. social connection availability, amount of money donated to the fund, and money importance) were not significantly related to age (ps $< .145$) and participant sex (ps $< .154$). Hence, these two factors were not treated as control variables in subsequent analyses.

Participants in the social distancing condition reported less availability of social connection ($M = 3.34$, $SD = 1.33$) than did participants in the control condition ($M = 4.21$, $SD = 1.49$), $t(138) = -3.648$, $p < .001$, $d = 0.62$, 95% CI [−1.34, −0.40] (see Table 1). As intended, felt availability of social connection was associated with donating less money to the student fund ($r = .524$, $p < .001$) and granting greater importance to money ($r = -.604$, $p < .001$).

Table 1 shows that participants in the social distancing condition donated less money to the fund (M = NT \$30.36, $SD = 22.04$) than did those in the control condition (M = NT \$40.86, $SD = 24.14$), $t(138) = -2.688$, $p = .0008$, $d = 0.45$, 95% CI [−18.23, −2.78]. The effect of social distancing on the desire for money was also evidenced by ratings of money importance. Participants primed with social distancing attributed greater importance to money ($M = 5.10$, $SD = 1.35$) than did control participants ($M = 4.41$, $SD = 1.36$), $t(138) = 2.994$, $p = .003$, $d = 0.51$, 95% CI [0.23, 1.14].

In Experiment 2, the mediating role of social connection availability was also tested for our two indicators of desire for money. The experimental condition was dummy coded (1 = social distancing, 0 = control). The effect of social distancing on monetary donation ($B = -10.50$, $SE = 3.91$, $t = -2.688$, $p = .008$) was not significant ($B = -3.48$, $SE = 3.57$, $t = -0.975$, $p = .331$) after controlling for social connection availability. The 95% bias-corrected CI [−12.88, –3.17] for the indirect effect ($B = -7.00$, $SE = 2.43$; bootstrap resamples = 5,000) was significant in a bootstrap analysis, indicating that felt availability of social connection served a mediating role. The mediating effect of social connection availability on the experimental effect was also observed regarding money importance. When social connection availability was controlled for, the relationship between social distancing and money importance ($B = 0.69$, $SE = 0.23$, $t = 2.994$, $p = .003$) became non-significant ($B = 0.21$, $SE = 0.20$, $t = 1.047$, $p = .297$). Furthermore, the indirect effect of social connection availability (bootstrap resamples = 5,000) was significant, $B = 0.48$, $SE = 0.14$, 95% bias-corrected CI [0.21, 0.79], indicating that social disconnection availability mediated the link between social distancing and participants' ratings of money importance (see Figure 2).

In the aforementioned discussion, we argued that that perceived threat of COVID-19 might also account for the observed differences in amount of money donated to the fund and money importance between the two study conditions. However, the mean difference in perceived threat of COVID-19 between the social distancing ($M = 5.14$, $SD = 1.25$) and control ($M = 4.79$, $SD = 1.34$) groups was not significant, $t(138) = 1.630$, $p = .105$. Moreover, perceived threat of COVID-19 was neither associated with amount of money

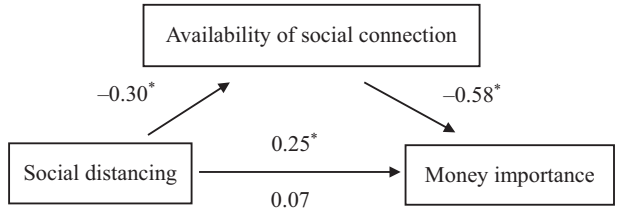

Figure 2. Mediation of the effect of social distancing on money importance. Values are standardized regression coefficients. On the lower path, the values below and above the arrow are the results of analyses in which the mediator was and was not included in the model, respectively. An asterisk indicates a *p*-value of < .01.

donated to the fund, $r = -.114$, $p = .179$, nor with money importance, $r = .152$, $p = .074$. Moreover, the bootstrap analyses showed that the 95% bias-corrected CI [−3.30, 0.35] for the indirect effect ($B = -0.58$, $SE = 0.82$) of perceived threat from COVID-19 in the relationship between social distancing and monetary donation included zero. The bootstrap 95% bias-corrected CI [−0.01, 0.21] for the indirect effect ($B = 0.05$, $SE = 0.05$) of perceived threat from COVID-19 in the relationship between social distancing and money importance also included zero These findings indicated that perceived threat of COVID-19 did not serve as a mediator of experimental effects, thereby excluding this alternative account.

In short, the findings of Experiment 2 supported our hypothesis and replicated the earlier finding that priming with social distancing enhances the desire for money, as manifested by reduced monetary donation and greater money importance. Hence, COVID-19 social distancing may induce a lower sense of social connection availability, which leads to a heightened desire for money.

GENERAL DISCUSSION

To test the substitutability hypothesis of human motivation regarding subsistence resources, we conducted two experiments to examine whether COVID-19 social distancing (i.e., scarcity in social connection) would increase the desire for money. The present research indicates an association between the desire for social connection and the desire for money. In Experiment 1, participants who recalled experiences of social distancing offered less money in the dictator game and were less willing to make a charitable donation compared with control participants. In Experiment 2, social distancing primes, shown to induce a felt sense of reduced availability of social connection, led participants to donate less money to a student fund and to value money more highly than participants receiving neutral primes. Findings from these two experiments suggest that reminders of social distancing may increase the incentive value of money. To our knowledge, this may be the first study to provide experimental evidence for the psychological effects of COVID-19 social distancing on the desire for money.

The present findings contribute to the literature in several ways. The replication study (Experiment 2) employed a different priming procedure that resolved the issue of temporal construal effects, excluded the alternative account of the perceived threat of COVID-19, and used higher statistical power for estimating the required sample size, which contributed to producing convincing and replicable priming effects of social distancing on the desire for money. Second, the observed link between social distancing

and the desire for money provides support for the substitutability principle regarding motivation regulation (Carver, 2004; Lasaleta & Vohs, 2013). A fundamental premise of the substitutability hypothesis is that people treat money and social connection as interchangeable resources. Hence, it predicts that when one resource is seen as scarce, people will be motivated to pursue the other. Furthermore, our findings are congruent with prior research on the psychological link between social connection and money. For instance, Lasaleta and Vohs (2013) showed that participants receiving social support primes ranked financial success as less important, reported less worry over money, and valued money less than those receiving neutral primes. Lasaleta et al. (2014) demonstrated that feeling nostalgic, which is known to foster social connectedness, can weaken the desire for money, as manifested in people's valuing money less (Experiments 3, 4), being less willing to put effort into obtaining money (Experiment 5), and drawing smaller coins (Experiment 6). Regarding the psychological consequences of money (i.e., the other causal relationship between money and social connection), participants primed with money preferred to participate in solitary activities, work on tasks alone, and put more physical distance between themselves and another participant (Vohs et al., 2006). In addition, reminding participants of money reduced distress over social exclusion (Zhou et al., 2009). Finally, we found that social distancing increased the desire for money, supporting the theory that social connection (Lasaleta et al., 2014) and money (Briers et al., 2006) operate as subsistence resources in human motivation. Twenge, Baumeister, DeWall, Ciarocco, and Bartels (2007) showed that participants led to believe that they were likely to be alone later in life donated less money than those in the future belonging condition as well as controls (Experiment 1). Zhou et al. (2009) demonstrated that participants in the social rejection condition donated less money than those in the social acceptance condition. Just as priming with money can buffer the impact of social exclusion by making one feel strong (Zhou et al., 2009), the current research indicates that social distancing may increase the desire for money by making social connection feel less available.

Alternative explanations of the link between social distancing and the desire for money should be discussed because these priming studies are related to fundamental human motivations (i.e., social connection and money). Anderson, Hildreth, and Howland (2015) argued that the desire for status should also be considered a fundamental human motive. They defined status as 'the respect, admiration, and voluntary deference individuals are afforded by others' (Anderson et al., 2015, p. 574). Given that both social connection and money enable greater status, social distancing (or social disconnection) may signal less access to acquiring status through interpersonal interaction, thereby promoting the desire for money, which could serve as an alternative channel for pursuing status. In a similar vein, social rank theory proposes that social rank in humans reflects the ability to attract the attention, admiration, and investment of others (Gilbert, 2005). Based on an evolutionary analysis of resource-regulation strategies, Gilbert (2020) further posited two typical kinds of resource-regulation strategies: 'care and share' versus 'control and hold'. Considering the association between social distancing priming and an enhanced desire for money, it appears that the threat created by social distancing may induce individuals to adopt control and hold-based strategies, thus leading to greater valuing of money and smaller monetary donations. Additionally, extant research has shown that one of the primary psychosocial impacts of COVID-19 is paranoia, that is staying away from others to avoid being contaminated (e.g., Dubey et al., 2020; Lopes & Jaspal, 2020). Accordingly, social distancing may also prime a heightened sense of paranoia, motivating individuals to pursue alternative subsistence resources (e.g., money). However, although these

alternative perspectives (i.e., desire for status, social rank theory, and COVID-19 paranoia) provide potential mechanisms underlying the priming effect of social distancing on the desire for money, they are still in line with the substitutability principle regarding the regulation of human fundamental needs, suggesting that cues signalling reduced availability of one subsistence resource (e.g., social connection) may increase the desire for other interchangeable resources (e.g., money).

With regard to limitations and future directions, a single-mediator model may suffer from several weaknesses in demonstrating the underlying mechanism of a causal relationship, such as a failure to consider alternative mediator candidates or causal models, or to consider a mediation model based on well-established theories or empirical laws (Fiedler, Harris, & Schott, 2018). Our single-mediator model was grounded in the literature regarding the substitutability hypothesis. The replication study (Experiment 2) ruled out the potential mediation of perceived threat of COVID-19 and demonstrated replicable priming effects. The criterion for a conceptual time ordering from predictor to mediator to criterion (Tate, 2015) was satisfied in our experimental studies. Taken together, these characteristics suggest that our mediation model appeared to be theoretically sound and to be more compelling and less susceptible to the well-known weakness of inferences from statistical mediation tests. However, a more holistic picture of the impact of social distancing on human fundamental needs may be obtained by employing a *multiple*-mediator model that includes alternative mechanisms (e.g., social rank theory and the desire for status). The use of other measures of the desire for money, such as a list of values, willingness to pay for goods or services, drawing larger coins (a sign of stronger desire for money; Lasaleta et al., 2014), or everyday spending behaviour, may help to expand generalizability. Our participants were university students, who usually do not have a great deal of wealth. This might make them more sensitive to the enhancement effect of social distancing on the desire for money. Moreover, prior research demonstrated that money may serve as a substitute for relationships with others (e.g., Vohs et al. 2006; Zhou et al. 2009), and thinking about money may reduce distress resulting from social exclusion (Zhou et al., 2009). Therefore, the increase in the desire for money should be less prominent for wealthy people. The moderating role of wealth status in the effect of social distancing on a desire for money is worthy of investigation. Along a similar line, the current research focussed on the relationship between social distancing and a greater desire for money. It would be important and interesting to test whether the effect worked both ways. Specifically, we suspected that recalling experiences of positive social connection during COVID-19 might lead to a lower desire for money, as manifested by increased giving and less valuing of money. In addition, neurological evidence has shown that physical and social pain share a common neural circuitry (see Eisenberger & Lieberman, 2004, for a related review). One area for future research is the spillover effect of social distancing (i.e., a source of social pain) on physical pain. Social support has been shown to have pain-attenuating effects (e.g., Fitzsimons & Bargh, 2003; Jackson, Iezzi, Chen, Ebnet, & Eglitis, 2005; Master et al., 2009; Zaza & Baine, 2002). In contrast, one could predict that social distancing would intensify physical pain. During the global COVID-19 pandemic, people are likely to have had frequent experiences of a felt sense of social distancing. The possible pain-expanding effects of social distancing have important implications for pain management and may help to explain why social disconnection or poverty might render people especially vulnerable to physical pain in a global pandemic.

In conclusion, social connection and money are both important in humans' efforts to obtain what they want from the social system. The current research indicates that merely reminding people of social distancing may increase their desire for money. In the global

COVID-19 pandemic, it is inevitable that people will experience social distancing in everyday life. Our findings suggest that COVID-19 social distancing may lead people to desire, obtain, and hold onto money. Hence, social distance regulations may be more closely associated with reduced charitable donations, an increase in self-interested behaviours, personal life goals, money-related crimes, and a dearth of prosociality in the COVID-19 pandemic.

Conflicts of interest

All authors declare no conflict of interest.

Author contributions

Chun-Chia Lee (Conceptualization; Formal analysis; Investigation; Writing – original draft; Writing – review & editing) Yen-Jung Chen (Investigation; Methodology; Writing – original draft) Pai-Lu Wu (Formal analysis; Methodology; Writing – original draft) Wen-Bin Chiou, Ph.D. (Conceptualization; Formal analysis; Methodology; Writing – original draft; Writing – review & editing).

Data Availability Statement

The data sets that support the findings of this study are available in the Mendeley at https://data.mendeley.com/datasets/jwdgcj4sxw/draft?a=21998f6b-b415-49d3-8e7b-65caddd456ea.

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