Fighting Fiscal Awkwardness: How Relationship Strength Changes Individuals' Communication Approach When Resolving Interpersonal Debt

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Social interactions can be uncomfortable. The current research focuses on a particularly uneasy interaction that individuals face with their friends and acquaintances: the need to request owed money back. Nine preregistered studies ($N = 6,953$) show that individuals' approach to resolving interpersonal debt varies based on their closeness with the requestee. Specifically, people prefer communication methods low in social richness (e.g., digital apps) when requesting money back from weak social connections such as distant acquaintances. However, they prefer communication methods high in social richness (e.g., in-person interactions) when requesting money back from strong social connections such as close friends. Process evidence reveals the psychological dynamics at play: (a) people anticipate discomfort when requesting money back from distant acquaintances in person, driving them away from in-person requests and toward digital apps, and (b) people are more averse to appearing impersonal with close friends, driving them away from digital apps and toward in-person requests. In sum, individuals adaptively approach uncomfortable financial interactions based on the relationship dynamics at hand.

Public Significance Statement
Our research examines how individuals approach the common discomfort of requesting owed money, finding that the method chosen is influenced by the strength of their social ties. While individuals favor impersonal methods, like digital payments, for distant connections, they prefer more personal methods for closer social ties. This work reveals the psychological trade-offs shaping important and sensitive social interactions.

Keywords: relationships, social discomfort, communication richness, digital communication, interpersonal debt

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Suppose that you recently went to lunch with a coworker. Your coworker forgot their wallet, so you covered their meal. Several days have passed, and this coworker still has not repaid you, so you decide to ask for the money back. Would you make this request in person? Or would you avoid the in-person confrontation and send a digital request instead?

People often lend and borrow money from each other (Banerjee & Duflo, 2007; Lee & Persson, 2016; Morvinski & Shani, 2022; Rona-Tas & Guseva, 2018). Although such exchanges are common, navigating interpersonal debt can evoke unease because of the social complexities surrounding money (Belk & Wallendorf, 1990; Kim et al., 2019; Sun & Slepian, 2020). Money can represent power (Zelizer, 1989), status (Cooley et al., 2021; Ivanic et al., 2011), and achievement (Ridgeway, 2014; Rose & Orr, 2007), and therefore, insecurities about money can trigger feelings of anxiety (Fitch et al., 2011; Sweet et al., 2013), distrust (Yamauchi & Templer, 1982), and even psychological distress (Prelec & Loewenstein, 1998; Weinstein & Stone, 2018). Owed money can create particularly uncomfortable situations because indebtedness prompts feelings of inequity (Adams, 1963), at times reshaping power dynamics within relationships (Blau, 1964). How do people navigate such fraught interactions?

The current research investigates how people request owed money back from peers. We find that people strategically tailor their request approach to fit the relationship in question. Specifically, we find that the strength of the social connection between individuals affects their request behaviors. Because people anticipate substantial discomfort when requesting owed money from weak social connections, they choose request methods low in social richness, such as digital apps, and thus avoid face-to-face interactions. However, in the case of strong social connections, people have greater concern that a request could appear impersonal, driving them toward request options high in social richness such as in-person requests. In summary, this research documents how people navigate communication about uncomfortable topics with members of their social network, showing that people adjust their communication mode to fit the relationship priorities at hand.

The Discomfort of Financial Discussion

People frequently encounter sensitive issues such as those about money, race, sex, and health. Due to the delicate nature of these topics, people often avoid discussing them (Hart et al., 2021; Sun & Slepian, 2020), sometimes allowing important questions to go unasked. For example, societal stigma can deter individuals from discussing mental distress (Barker et al., 2005; Cauce et al., 2002; Michelmore & Hindley, 2012). Patients with end-stage renal disease who are eligible for kidney transplants sometimes fail to receive donations because of the discomfort surrounding donation requests (Jaroszewicz, 2020). When in need of financial assistance, sometimes people prefer to incur significant costs rather than seek help from their social network (Jaroszewicz, 2020).

Among these sensitive topics, one stands out as highly uncomfortable yet also ubiquitous: financial matters. Despite its undeniable role in our everyday lives, money talk is often avoided (Sun & Slepian, 2020). People believe that money provides a signal of one's competence and abilities (Furnham, 1984), and relatedly, indebtedness or a perceived lack of money is associated with lower psychological and physiological well-being (Clayton et al., 2015; Fitch et al., 2011; Ong et al., 2019; Rose & Orr, 2007; Sweet et al., 2013). Because money, or lack thereof, can be a source of insecurity and angst (Furnham, 1984; Furnham et al., 2012), discussing one's finances with others can elicit an array of negative emotions including discomfort and nervousness. Consequently, money conversations are among those most avoided across cultures (Belk & Wallendorf, 1990; Hart et al., 2021; Krueger, 1991; Trachtman, 1999; Wherry et al., 2019).

In a pilot study for this project, we attempted to gauge people's discomfort in response to an array of potentially uncomfortable issues. We measured individuals' ($N = 544$) discomfort discussing 10 sensitive topics including money, sex, relationship problems, and politics with both close friends and distant acquaintances. We found that "money issues" was rated as the second most uncomfortable topic overall to discuss with one's social connections (see Figure 1; for pilot study details, see Supplemental Materials A). These results are broadly consistent with those from Sun and Slepian (2020), showing that money and financial matters were the most commonly

Figure 1
Perceived Discomfort in Discussing Sensitive Topics With Peers
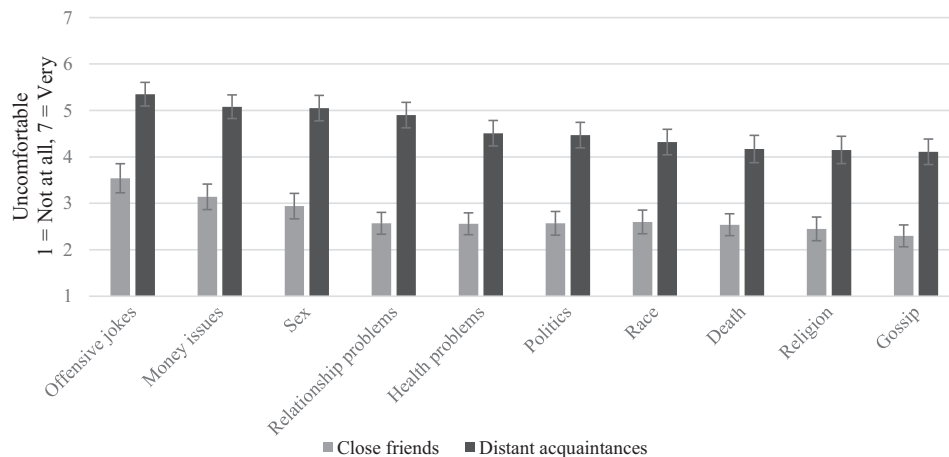
Note. Error bars represent 95% confidence intervals.

avoided discussion topics, and similar to Hart et al. (2021), showing that when individuals are asked to generate highly sensitive questions, they often produce questions about money. Notably, we also found that respondents consistently rated all of these topics as substantially more uncomfortable to discuss with distant acquaintances than with close friends (see Figure 1).

Given these results, financial interactions offer a valuable context in which to study how people handle uncomfortable interactions with those in their social circle. In our investigation, we specifically focus on owed money, or interpersonal indebtedness, because it is both a highly uncomfortable topic even within the realm of financial discussions and it also represents an experience that almost everyone encounters. We further hypothesize that our findings within the realm of financial discussions will generalize to other uncomfortable topics, a prediction that we explore in the final study of this article (Study 7).

Social Connection Strength

Within their social networks, people tend to maintain both strong social connections (e.g., close friends) and weak social connections (e.g., acquaintances). The relationship strength of these social connections is determined by the emotional intimacy and feelings of connectedness shared between individuals (Aron et al., 1992; Granovetter, 1973). Strong social connections typically involve relationships with family members, close friends, and significant others and are characterized by numerous interactions, shared experiences, and feelings of affection (Garcia-Rada et al., 2022; Krackhardt et al., 2003). Weak social connections, on the other hand, typically involve relationships with acquaintances and distant others that are less developed. There is a relative lack of emotional closeness, fewer feelings of connectedness, and lower importance attached to these weak social connections (Granovetter, 1973; Lydon et al., 1997). Within this conceptualization, it is important to note that weak social connections do not include strangers nor disliked individuals, nor even necessarily mere transactional connections (Clark & Mils, 1993, 2012). Instead, both strong and weak social connections generally refer to positive social relationships that differ primarily in psychological closeness (Fowler & Christakis, 2008; Granovetter, 1973).

Given the distinction between strong and weak social ties, we argue that the strength of social connections can influence how people approach uncomfortable topics including financial ones. Interactions with weak social ties, which lack the personal connection of strong social ties, generate greater uncertainty in judgment. For instance, people tend to underestimate how much distant (vs. close) others appreciate being approached (Liu et al., 2023) or welcome social support (Dungan et al., 2022), while they overestimate the potential awkwardness of engaging in deep conversations or revealing personal information with them (Kardas et al., 2022). Research about providing feedback shows that the anticipated discomfort of delivering feedback is a key factor in people's tendency to underestimate how much others appreciate receiving feedback, and that this underestimation is pronounced between distant acquaintances (Abi-Esber et al., 2022).

Such findings imply that the prospect of discussing fraught topics with one's weak social connections can evoke considerable discomfort. As shown in our earlier pilot study (Figure 1), people report substantially greater discomfort when discussing uncomfortable topics with their weak versus strong social connections. The close personal bond that people share with their strong social connections appears to buffer a substantial share of the unease that arises when discussing uncomfortable subjects.

It is also the case, however, that stronger personal bonds indicate that people value a relationship more and might feel a need to signal care within its interactions. Individuals are generally more concerned about how their strong social connections view them (Garcia-Rada et al., 2022; Wilcox & Stephen, 2013), and consequently, strong social connections exert an especially powerful influence on behavior (Brown & Reingen, 1987). For example, people avoid gifting impersonal gifts to their close friends, sometimes even prioritizing gifts that signal their personal relationship over gifts recipients prefer (Ward & Broniarczyk, 2016). Heightened concern for maintaining close relationships suggests that people might be especially averse to appearing impersonal with their close social connections in order to protect the relationship. We predict that a priority of signaling care within a close relationship has the potential to influence how people choose to interact with their close social ties, in particular, the communication method that they choose.

Selecting the Approach: Social Richness Matters

As outlined above, we predict that (a) people anticipate greater discomfort when interacting with weak social connections regarding sensitive topics such as owed money and (b) people are more averse to appearing impersonal with strong social connections. Due to these two forces, we propose that people will use communication approaches differing in social richness to address uncomfortable topics with their weak versus strong social ties.

Social richness in communication is defined as the degree to which a communication medium varies in intimacy and immediacy (Daft & Lengel, 1986; Short et al., 1976). Under this conceptualization, face-to-face interactions are high in social richness because they are interpersonal and synchronous; face-to-face interactions therefore allow rich social cues, immediate feedback, and personal connection. By comparison, digital interactions are low in social richness due to their indirect communication and asynchronous features, rendering limited social cues, a delayed response, and a feeling of impersonality.

We conducted a second pilot test ($N = 100$) for this project to gauge the social richness of seven different methods for communicating about financial matters with peers: (a) in-person communication, (b) phone calls, (c) texts, (d) emails, (e) Venmo, (f) PayPal, and (g) a standard bank app (for pilot study details, see Supplemental Material B). Based on earlier conceptualizations of social richness (Daft & Lengel, 1986; Oh et al., 2018; Short et al., 1976), participants answered three questions: (a) "To what extent is communicating via [communication method] a socially rich way to communicate with others?" (b) "To what extent would you feel that you are in the presence of others when communicating via [communication method]?" and (c) "To what extent would you feel connected with others when communicating via [communication method]?" on an 11-point scale ($1 = not\ at\ all$, $11 = extremely$; $\alpha = .91$). The order in which participants saw the seven communication methods was randomized.

Consistent with prior theories of social richness, post hoc comparisons showed that participants rated in-person interactions as the most socially rich, followed by phone calls, texts, emails, Venmo, PayPal, and a standard bank app (see Supplemental Materials B, Figure 1). In the current research, we focus the bulk of our

investigation on the communication media that are the highest in social richness (in-person requests) versus the lowest (digital payment apps) and test how these media are used for social and financial interactions.

While digital apps are commonly used for their convenience in requesting money, we propose that because they are judged to be low in social richness, digital apps can also minimize the social discomfort associated with fiscal interactions. We hypothesize that people will prefer less socially rich request methods, for example, digital apps, when requesting owed money from weak social ties in particular because people expect request methods low in social richness to mitigate discomfort from discussing financial topics (see Table 1, Hypotheses 1 and 2).

In contrast, we predict that people will rely more heavily on socially rich methods, such as in-person requests, to resolve indebtedness with close social connections. Digital communication, unlike face-to-face interaction, lacks social cues and reduces personalization (Kiesler et al., 1984; Sproull & Kiesler, 1986; Walther, 1995, 1996). The absence of these social features in digital communication has potential negative downstream consequences, such as miscommunication (Kruger et al., 2005), the risk of appearing impersonal (Sproull & Kiesler, 1986), or even dehumanization of the communicator (Schroeder & Epley, 2016; Schroeder et al., 2017; Walther, 1996). Drawing on previous psychological theories of social interactions, we anticipate that, for sensitive contexts such as interpersonal debt, the use of digital apps poses a concern that the requester might appear impersonal to the requestee (Sproull & Kiesler, 1986; Walther, 1996). We further expect that this concern should emerge for strong social ties in particular. As a result, we hypothesize that people will prefer socially rich options, such as in-person requests, when requesting owed money from strong social connections (see Table 1, Hypotheses 1 and 3).

Overview of Studies

We test our four main hypotheses across nine preregistered studies. Studies 1A and 1B use retrospective recall paradigms to provide evidence that people adjust the way they request owed money depending on the strength of their social connection with the requestee. Study 2 replicates these findings across a variety of social scenarios while relying on experimental manipulation of social connection strength, carefully controlling for potential confounds. Study 3 relies on mediation to measure and test the two proposed mechanisms. Studies 4A and 4B further test the process by directly manipulating discomfort and impersonality, respectively. Study 5

broadens the investigation to explore how people resolve indebtedness with nonfriend or acquaintance relationships (i.e., a purely transactional relationship). Additionally, Study 5 examines people's choices when given the option to not request owed money back at all. Study 6 explores the requestee's (i.e., the individual who owes money) perspective and investigates how they prefer to be approached when resolving such issues. Finally, Study 7 examines the generalizability of our findings across nonfinancial domains.

Transparency and Openness

For all studies, we report all data exclusions (if any), all manipulations, and all measures. No formal power analyses were conducted. In all studies, sample sizes were determined a priori, without intermittent data analyses. Sample sizes, exclusion criteria, designs, and analysis plans were formally preregistered for all studies (except Supplemental Materials Study A). Data were analyzed using R, Version 4.2.3 (R Core Team, 2022). All preregistrations, materials, stimuli, data, and analysis scripts are available from ResearchBox at https://researchbox.org/144.

Study 1A: Roommate Retrospective Study

Study 1A tests H_1 that people prefer requesting money via methods low in social richness when interacting with weak social connections and prefer request methods high in social richness when interacting with strong social connections. We used a retrospective recall paradigm with a large sample of participants to study real monetary requests. Given that the frequency with which people see a requestee may influence how requests are made, Study 1A relied on a natural setting—house or apartment sharing—where someone tends to see the other person frequently. We expected that participants who report weaker social connections with their roommates would be more likely to request owed money via digital apps, whereas participants who report stronger connections with their roommates would be more likely to request in person.

Method

Participants and Design

We recruited 1,198 Amazon Mechanical Turk (MTurk) participants via CloudResearch between the ages of 18 and 40. All participants were asked about their age ("What is your age?") with an open-ended text box and about gender ("What is your

Table 1
Table of Hypotheses Tested Within Studies

Hypothesis	Study
H_1: When people request owed money from weak social ties, they prefer media low in social richness (e.g., digital apps). When people request owed money from strong social ties, they prefer media high in social richness (e.g., in-person requests).	1A, 1B, 2, and 5
H_2: People anticipate more discomfort when requesting money in person from weak (vs. strong) social ties, which in turn increases requests low in social richness.	3 (mediation) and 4A (moderation)
H_3: People are more averse to appearing impersonal with strong (vs. weak) social ties, which in turn increases requests high in social richness.	3 (mediation) and 4B (moderation)
H_4: People's preference to use media low in social richness with weak (vs. strong) social ties extends to other nonfinancial sensitive contexts (e.g., discussing health issues).	7

gender?") with the choice options: (a) Male, (b) Female, (c) Nonbinary, and (d) Prefer not to say. The average age of participants was $M_{age} = 30.33$. Five hundred ninety-two participants reported their gender as male, 577 as female, 21 as nonbinary, and eight preferred not to say their gender. No information about race or ethnicity was collected.

Following our preregistered criteria (described below; https://aspredicted.org/SRV_FPX), our final sample consisted of 803 participants.

Procedure

Participants first answered two "yes or no" questions about whether (a) within the past 5 years, they had a housemate or roommate who was not a family member, and (b) they had ever been in a situation where a roommate owed them money and they requested the money back. Participants who answered "yes" to both questions were eligible for the study and typed the first name or initials of the roommate from whom they had requested money back. Participants then answered our main dependent variable question—how they requested the owed funds from their roommate—among six choice options: (a) in-person (face-to-face); (b) via a phone call; (c) via text message; (d) via a payment app such as Venmo, Zelle, PayPal, or Facebook Messenger; (e) via email; or (f) other. Next, participants answered how close they were with their roommates—our key independent variable. Participants were asked, "How close were you to your roommate, [name], at the time you requested the money?" on a 20-point scale (1 = [name] *was like a complete stranger to me*, 20 = [name] *was like a close family member to me*). Lastly, participants answered whether they had the option to request the owed money via a payment app (yes or no), how much money their roommate owed, how long they waited before requesting their money back, and demographic variables such as age and gender. Following our preregistration, only participants who correctly answered the attention check question about whom they had to request back owed money and answered "yes" to having the option to request owed money via a payment app were included in the final analysis.[1]

Results

On average, participants' roommates owed $284.62, and participants waited 24.88 days before requesting back the owed money. In-person requests were the most frequent (57.66%), followed by texts (22.54%), digital payment apps (17.68%), emails (.88%), other (.87%), and phone calls (.37%; see Supplemental Materials C, Table 1, for details).

Following our preregistration, we concentrated on the two request methods that differ most in social richness based on the previously mentioned social richness pilot test (Supplemental Materials B): digital payment apps versus in-person requests. To test our hypothesis, we created a combination of dummy variables by comparing the choice of request made via digital payment apps (coded as "1") or in person (coded as "0"). With this combination of the dummy variables ($n = 605$), we conducted a logistic regression predicting the choice of request method based on how close participants were with their roommates.

As hypothesized, regression analyses (see Table 2) revealed that closeness with one's roommate is negatively associated with the choice of request made via digital apps ($\beta = -.23$, $SE = .10$, $z = -2.35$, $p = .019$). This association persisted even after controlling

for the amount of money that was owed ($\beta = -.22$, $SE = .10$, $z = -2.25$, $p = .024$) and the number of days waited until requesting the money back ($\beta = -.22$, $SE = .10$, $z = -2.19$, $p = .029$). These results are consistent with H_1, providing evidence that individuals adapt their approach to resolving interpersonal debt based on the strength of their social connection with the requestee. Specifically, we found that, even when participants had the opportunity to interact with their roommates frequently, weaker social connections between participants and their roommates predicted a greater likelihood of requesting money using digital apps and a lower likelihood of requesting in person.

Although not preregistered, we conducted additional comparisons of text requests to in-person and digital payment app requests due to their high usage frequency (22.54%). In our social richness pilot test (Supplemental Materials C), we observed that text communication scored somewhere in between in-person and digital payment app communication on the social richness scale. While we did not have any a priori prediction regarding how text requests would differ from these two methods of communication when requesting money, we still thought it was important to explore how people use this common approach.

We conducted two exploratory analyses comparing requests: (a) via text versus in-person and (b) via digital payment app versus via text, based on roommate relationship closeness.

When comparing text requests (coded as "1") and in-person requests (coded as "0") by how close participants were with their roommates, we found a significant negative association between relationship closeness and the choice of request method ($\beta = -.27$, $SE = .08$, $z = -3.18$, $p = .001$; see Supplemental Materials C, Table 2), consistent with the key results mentioned above. This suggests that with weaker social connections, people choose relatively less socially rich means (texts) to make requests, whereas with stronger social connections, people prefer more socially rich means (in person). However, when comparing digital payment apps requests (coded "1") and text requests (coded as "0"), we found no significant association between relationship closeness and the choice of request method ($ps > .05$; see Supplemental Materials C, Table 3). It appears that in this context of roommate requests, people treated text requests similar to requests via digital apps.

In summary, our findings provide support for H_1, suggesting that with weaker social connections, individuals tend to opt for less socially rich communication means, such as digital payment apps (and texts), when making requests. Conversely, with stronger social ties, people were inclined to choose more socially rich means, such as in-person communication.

Study 1B: Retrospective Study Across Contexts and Connections

The goal of Study 1B is to replicate the patterns from Study 1A, but with a broader set of contexts. In this study, participants could report any experience in which a friend or acquaintance owed them money. As in Study 1A, we expected that individuals who requested

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[1] We conduct a robustness test including the full sample (i.e., including those who answered "no" to having the option to request owed money via a payment app) and report the results in Supplemental Materials C, Table 4. The results indicate that, even when including these participants in the regression analyses, individuals were more inclined to request via digital apps with weaker social ties ($\beta = -.22$, $SE = .09$, $z = -2.32$, $p = .021$).

Table 2

Study 1A Logistic Regression Predicting Choice of Request Method by Relationship Closeness

Independent variable	Model 1	Model 2	Model 3	Model 4
Closeness	-0.23^* (.10)	-0.22^* (.10)	-0.22^* (.10)	-0.22^* (.10)
Amount of money owed		-0.88^* (.35)		-0.46 (.36)
Number of days waited			-1.16^{***} (.34)	-1.02^{**} (.36)

Note. Requests made via digital app were coded as 1 and in-person requests as 0.
$^* p < .05.$ $^{**} p < .01.$ $^{***} p < .001.$

money from weak versus strong social ties would use digital apps more frequently and ask in person less frequently.

Method

Participants and Design

We recruited 252 MTurk participants via CloudResearch between the ages of 18 and 35. All participants were asked about their age ("What is your age?") with an open-ended text box and gender ("What is your gender?") with the choice options: (a) Male, (b) Female, (c) Nonbinary, and (d) Prefer not to say. The average age of participants was $M_{age} = 28.10$. One hundred fifteen participants reported their gender as male, 134 as female, and three as nonbinary. No information about race or ethnicity was collected.

Following our preregistered criteria (https://aspredicted.org/blind .php?x=gu8v7x), our final sample consisted of 192 participants.

Procedure

Participants first answered two questions about whether they had ever been in a situation where (a) a close friend and/or (b) a distant acquaintance owed them money and they had to request the money back from that person. Participants who answered "yes" to either question were eligible for the study and typed the first name or initials of the close friend and/or distant acquaintance from whom they had requested money back. Participants next answered open-ended questions describing the situation (e.g., why they lent the money), how much money they lent, and how long they waited (in days) before requesting the money back. After describing each situation, participants answered our main dependent variable question—how they requested the owed funds from their close friend or distant acquaintance—from among five options: (a) in-person (face-to-face); (b) over a phone call; (c) via text message; (d) via a payment app such as Venmo, Zelle, PayPal, or Facebook Messenger; or (e) other.

Results

Out of 192 participants, 178 (92.71%) reported that they had been in a situation where a close friend owed them money and they had to request it back, and 94 (48.96%) reported that they had been in a situation where a distant acquaintance owed them money and they had to request it back (see Supplemental Materials D, Table 1, for descriptive statistics details). Participants reported that, on average, their close friends owed $168, and they waited 27.73 days before requesting back the owed money. In-person requests were the most frequent when requesting from close friends (48.31%), followed by

texts (33.70%), digital payment apps (11.24%), phone calls (5.06%), and other (1.69%).

With distant acquaintances, participants reported that acquaintances owed, on average, $89.27 and waited 21.97 days before requesting back the owed money. In-person requests were the most frequent method of request (41.49%), followed by digital payment apps (26.60%), texts (21.28%), phone calls (6.38%), and other (4.25%).

Using an approach similar to Study 1A, we created a combination of dummy variables by comparing the choice of request made via digital payment apps (coded as "1") or in person (coded as "0"). With this combination of the dummy variables ($n = 170$), we preregistered a chi-square analysis comparing the choice of request method by requestee relationship (close friend vs. distant acquaintance). However, after closer examination of the preregistered analysis and helpful comments from the review team, we concluded that a chi-square analysis was not the most appropriate statistical test to conduct because of our sampling procedure. Specifically, some participants answered "yes" to both questions of having been in a situation where they requested owed money from a close friend and/or distant acquaintance, meaning they were counted twice, potentially skewing results. To account for the repeat participant in the analysis, we instead conducted a logistic regression to regress participants' choice of request method (1 = digital payment app request, 0 = in-person request) on the requestee relationship (1 = close friend, 0 = distant acquaintance) while including participant ID as a fixed effect in the regression model.

Replicating the pattern of results from Study 1A, our logistic regression analysis, including a fixed effect of participant ID, revealed a negative association between requestee relationship and the choice of request method such that participants were more likely to request owed money via digital apps when requesting from a distant acquaintance compared to a close friend ($\beta = -.28$, $SE = .11$, $z = -2.48$, $p = .013$), supporting our hypothesis. This pattern of results is consistent with the preregistered chi-square analysis which revealed that participants requested money using digital apps more frequently when requesting from distant acquaintances (39.06%) than when requesting from close friends, 18.87%; $\chi^2(1, N = 170) = 8.36$, $p = .004$; see Supplemental Materials D for detailed results.

We conducted an additional exploratory robustness test by focusing only on participants who have requested owed money from both a close friend and a distant acquaintance ($n = 80$) to ensure that within this subsample, our hypothesized results remain consistent. The test revealed the same pattern of results: Participants were more likely to request owed money via digital apps when requesting from a distant acquaintance compared to a close friend, even within this group of participants ($\beta = -.28$, $SE = .11$, $z = -2.48$, $p = .013$; see Supplemental Materials D for detailed results).

Studies 1A and 1B Discussion

Studies 1A and 1B both show support for H_1 that people's approach to interpersonal debt depends on the strength of their social ties with the requestee when we look at reports of their actual requesting behavior. People frequently request repayment using socially rich methods (i.e., in-person requests) from their peers. However, with weaker social ties such as distant acquaintances, people's preference for less socially rich methods (e.g., digital app requests) increases.

While we focus the bulk of our investigations on the request methods that are the highest (in-person requests) versus the lowest (digital payment apps) in social richness, we also explored how text communication—a request method moderate in social richness—differs from the two primary request methods of interest. Here, we found mixed results. Study 1A shows a significant association between the choice of request method (text vs. in-person) and relationship closeness. Study 1A further shows that in the context of roommate requests, text communication was treated similarly to digital app communication. Study 1B yields a different pattern (see Supplemental Materials D for exploratory analyses): In this study's contexts, text requests are treated similarly to in-person requests and were less preferred when requesting from distant acquaintances compared to digital app requests. Given the complexity of these results, we conclude that text communication appears to be an interesting middle ground in its usage for uncomfortable interactions, warranting further exploration in future studies. For the current research, we maintain our focus on request methods that are both the highest and lowest in social richness, specifically, in-person and digital app requests.

One advantage of the methods in Studies 1A and 1B is that we examined participants' recall of real instances of their financial request behaviors. Moreover, the roommate context in Study 1A suggests that these patterns occur even in settings where people see the requestee frequently. However, these studies do not demonstrate causality. Various factors such as payment amount and loan circumstances may also vary across these relationship types, potentially contributing to the differences in their choice of request method. Thus, in the following studies, we use experimental designs to investigate and isolate whether the strength of the social connection between the requester and requestee drives preferences for communication methods in interpersonal debt.

Study 2: Stimulus Sampling

Study 2 provides further support for H_1 by directly manipulating the strength of the social connection between the requester and requestee and otherwise holding the situation constant. In addition, we implemented stimulus sampling, systematically presenting nine different scenarios across participants to verify the generalizability of the phenomenon under study and reduce the threat of idiosyncratic features within any individual scenario (Judd et al., 2012; Wells & Windschitl, 1999). We expect that, across scenarios, individuals requesting from a distant acquaintance relative to a close friend would be more likely to request owed money via digital apps and, accordingly, would be less likely to request in person.

Method

Participants and Design

We recruited 1,505 Amazon MTurk participants via CloudResearch. All participants were asked about their age ("What is your age?") with an open-ended text box and gender ("What is your gender?") with the choice options: (a) Male, (b) Female, (c) Nonbinary, and (d) Prefer not to say. The average age of participants was $M_{age} = 39.58$. Seven hundred thirty-five participants reported their gender as male, 752 as female, nine as nonbinary, and nine preferred not to say their gender. No information about race or ethnicity was collected.

Participants were randomly assigned to one of two experimental conditions in a two-cell (requestee: close friend vs. distant acquaintance) between-subjects experimental design. Each participant was then randomly assigned to view one of nine scenarios (amusement park, car troubles, concert ticket, food, gas money, happy hour, housing, movie ticket, Uber ride). The amount of money lent in each scenario varied from $10 to $100. As outlined in our preregistration (https://aspredicted.org/K9M_Q6D), only participants who correctly answered the attention check questions—identifying who the requestee was and how often they saw the requestee—were included in the analyses. This yielded a final sample of $N = 1,140$ ($n = 619$ in the *close friend* condition and $n = 521$ in the *distant acquaintance* condition).

Procedure

Participants imagined that either a close friend or a distant acquaintance named Charlie had borrowed money (see Supplemental Materials E, Table 1). We describe the concert ticket scenario below, but all scenarios follow a similar pattern. Participants in the concert ticket scenario imagined that Charlie had forgotten their wallet and asked the participant to cover the cost of their concert ticket. Participants were told that a couple of weeks had passed since Charlie borrowed the money, and there were two ways to request the money back, either (a) via Venmo or (b) in person. Venmo was described as a digital payment service that allows users to request money through its phone app. Requesting in person was described as, "You can request the money from Charlie face to face (assume you see Charlie twice a week and the money will be paid through a digital payment method)." We specified these assumptions for the in-person request to hold constant other factors that could affect the choice of request method, such as how often the participant sees Charlie and the method by which they would receive payment due to convenience. Participants then answered the question, "How would you ask for the money Charlie, [one of your closest friends/one of your distant acquaintances], owed?" Participants could respond either "Ask via Venmo" or "Ask in person."

Results

We conducted a logistic regression to regress participants' choice of request method (1 = Ask via Venmo; 0 = Ask in person) on the requestee type (1 = distant acquaintance, 0 = close friend), including fixed effects for scenarios. As predicted, participants in the *distant acquaintance* condition (45.49%; 237/521) were more likely to request owed money via a digital app than were participants in the *close friend* condition (27.30%; 169/619; $b = .82$, $SE = .13$, $z = 6.45$, $p < .001$); correspondingly, participants in the *close friend* condition

were more likely to request in person (72.70%; 450/619) than were participants in the *distant acquaintance* condition (54.51%; 284/521). That is, when participants requested owed money from a weak social connection (i.e., a distant acquaintance) compared to a strong social connection (i.e., a close friend), they were more likely to request via a digital app and less likely to ask in person. The pattern of results was also directionally consistent when looking at each scenario separately (see Table 3).

Discussion

Study 2 provided additional evidence that, across multiple social contexts, individuals have different preferred methods for requesting owed money back based on the strength of social connection with the requestee. When the requestee is an acquaintance relative to a close friend, people are more likely to request via a digital app and less likely to request in person.

To further consider the possibility that the observed findings could be attributed to participants' assumptions regarding the frequency of their encounters with the requestee, we conducted an additional study to test for the robustness of the effect (see Supplemental Materials F). Results showed that even when participants expected to see the requestee every day, they were more likely to request owed money via a digital app when the requestee is a distant acquaintance compared to a close friend.

In Study 3, we test our proposed mechanisms via mediation.

Study 3: Mediating Role of In-Person Request Discomfort and Aversion to Appearing Impersonal

Thus far, we have established that individuals navigate interpersonal debt differently based on whether they are requesting owed money from a close friend versus a distant acquaintance. We predict that both the discomfort of requesting in person and the aversion to appearing impersonal mediate the relationship between one's social tie strength with the requestee and their choice of request method. In Study 3, we expect to replicate the results of Studies 1A–2: Individuals are more likely to request owed money via digital apps with a distant acquaintance versus a close friend. We further predict that when resolving interpersonal debt with a distant acquaintance (vs. a close friend), individuals feel more discomfort requesting in person, which in turn increases requests via digital apps (H2). We also predict that individuals are less averse to appearing impersonal when

requesting money from a distant acquaintance (vs. a close friend), further contributing to the preference for using digital apps with distant social connections to request funds (H3).

Method

Participants and Design

We recruited 401 Amazon MTurk participants via CloudResearch. All participants were asked about their age ("What is your age?") with an open-ended text box and gender ("What is your gender?") with the choice options: (a) Male, (b) Female, (c) Nonbinary, and (d) Prefer not to say. The average age of participants was $M_{age} = 39.91$. Two hundred fourteen participants reported their gender as male, 185 as female, and two preferred not to say their gender. No information about race or ethnicity was collected.

Participants were randomly assigned to one of two conditions (requestee: close friend vs. distant acquaintance) in a between-subjects experimental design ($n = 196$ in the *close friend* condition and $n = 205$ in the *distant acquaintance* condition). Each participant was then randomly assigned to view one of three scenarios (concert ticket, food, or Uber ride). Following our preregistration (https://aspredicted.org/blind.php?x=5un8ta), we collapsed analyses across all scenarios, focusing our analysis and interpretation on the two different requestee relationship conditions.

Procedure

In Study 3, participants provided the first name of either a close friend or a distant acquaintance. Participants imagined requesting owed money from that individual following one of three scenarios (concert ticket, food, or Uber ride; see Supplemental Material E, Table 1) and were asked, "How would you request the money that [name of the close friend/distant acquaintance] owed?" We then measured our two proposed mechanisms: (a) the discomfort of requesting in person and (b) the aversion to appearing impersonal. We asked participants in all conditions to rate their discomfort of requesting the money in person using three items (adapted from Jiang et al., 2013): (a) "How uncomfortable … ," (b) "How awkward … ," and (c) "How confrontational would you feel when requesting money from [name of the requestee], your [close friend/distant acquaintance] in person?" (1 = *not at all*, 7 = *very much*; α = .89). To measure the aversion to appearing impersonal, we again used three items (adapted from Short et al., 1976): "How much of a problem would it be if [name of the requestee], your [close friend/distant acquaintance] saw you as (a) a cold person, (b) impersonal, and (c) insincere?" (1 = *not much of a problem*, 7 = *very much of a problem*; α = .95). The order in which participants saw the two sets of items was randomized.

Results

Choice of Request Method

Replicating our previous results, we found that participants were more likely to request owed money via a digital app in the *distant acquaintance* condition (44.88%; 92/205) than in the *close friend* condition, 31.63%; 62/196; $\chi^2(1, N = 401) = 7.43$, $p = .006$. That is, when requesting owed money from a weak (vs. a strong) social tie, participants were more likely to request via a digital app and,

Table 3

Study 2 Percentage of Digital App Requests by Requestee and Scenarios

Scenario	Close friend (%)	Distant acquaintance (%)	p
Amusement park	31.75	54.90	.013
Car troubles	18.42	32.20	.06
Concert ticket	27.50	49.15	.009
Food	25.35	35.82	.18
Gas money	33.96	46.00	.21
Happy hour	22.86	42.11	.02
Housing	23.73	50.00	.003
Movie ticket	24.64	47.69	.005
Uber ride	38.46	54.72	.07
Collapsed	27.30	45.49	<.001

consequently, less likely to request in person. The pattern of results was also consistent when looking at each scenario separately (see Supplemental Materials G, Table 1).

Discomfort and Impersonality

As predicted, participants in the *distant acquaintance* condition ($M = 4.14$, $SD = 1.74$) reported more discomfort requesting in person than those in the *close friend* condition, $M = 3.43$, $SD = 1.73$; $t(399) = 4.09$, $p < .001$, $d = .41$, 95% CI [.21, .61]. Also as predicted, participants were less averse to appearing impersonal in the *distant acquaintance* condition ($M = 3.16$, $SD = 1.66$) compared to the *close friend* condition, $M = 4.57$, $SD = 1.74$; $t(399) = -8.30$, $p < .001$, $d = -.83$, 95% CI [−1.03, −.63].

Mediation

We tested whether the effect of the requestee relationship on the choice of request method was mediated by the (a) discomfort of requesting in person and (b) aversion to appearing impersonal (Hayes, 2017, Model 4). Contrasting the *close friend* (0) and *distant acquaintance* (1) conditions, we simultaneously tested the significance of both measured mediators by calculating the standardized effects for 10,000 bootstrapped samples. We found a statistically significant indirect effect of the discomfort of requesting in person (indirect effect = .24; 95% CI [.11, .41]), and the indirect effect of the aversion to appearing impersonal was marginally significant (indirect effect = .17; 95% CI [−.02, .38]).[2] As illustrated in Figure 2, including the two mediators in the model, the direct effect of requestee relationship on the choice of request method was no longer significant, indicating full mediation (direct effect = .20, $p = .41$, 95% CI [−.27, .67]). In sum, the proposed mechanisms jointly and fully mediated the effect of requestee relationship on the choice of request method. These results suggest that participants were more uncomfortable requesting in person and less averse to appearing impersonal with distant acquaintances versus close friends, thus increasing requests via digital apps for those weak social ties.

Discussion

Study 3 provided evidence for the hypothesized mediators driving our effect. When resolving interpersonal debt, individuals feel more discomfort requesting money in person from an acquaintance versus a close friend, which increases their likelihood to request through digital means instead. In addition, individuals are less averse to appearing impersonal when requesting money from an acquaintance versus a close friend, thus increasing their digital (vs. in-person) requests.

Study 4A: Moderation via Decreased Discomfort

Study 3 showed initial evidence that the increased discomfort of requesting in person and the decreased aversion to appearing impersonal when interacting with distant acquaintances contribute to people's preference for requesting money using digital apps. Studies 4A and 4B seek additional evidence of our proposed mechanisms via moderation (Spencer et al., 2005).

In Study 4A, we directly manipulated the discomfort of requesting in person by describing the requestee as someone who

is approachable. If people feel discomfort when requesting owed money from distant acquaintances in person, then assuring minimal discomfort should influence their choice of approach. Accordingly, we expected a reduction in the preference for digital requests when a distant acquaintance is described as a person who is easy to talk to. However, given that discomfort is already low for close friends, we expected a more modest decrease in digital requests when this description is used for a close friend.

Method

Participants and Design

We recruited 1,201 Amazon MTurk participants via CloudResearch. All participants were asked about their age ("What is your age?") with an open-ended text box and gender ("What is your gender?") with the choice options: (a) Male, (b) Female, (c) Nonbinary, and (d) Prefer not to say. The average age of participants was $M_{age} = 37.16$. Five hundred ninety-five participants reported their gender as male, 602 as female, and four as nonbinary. No information about race or ethnicity was collected.

Participants were randomly assigned to one of four conditions in a 2 (requestee: close friend vs. distant acquaintance) × 2 (discomfort: control vs. decreased) between-subjects experimental design. Each participant was then randomly assigned to view one of three scenarios (concert ticket, food, Uber ride). In accordance with our preregistration (https://aspredicted.org/blind.php?x=7jf7ep), only participants that answered the attention check questions correctly were included in the analysis. This yielded a final sample of $N = 1,085$ ($n = 282$ in the *close friend-control* condition, $n = 269$ in the *distant acquaintance-control* condition, $n = 273$ in the *close friend-decreased* condition, and $n = 261$ in the *distant acquaintance-decreased* condition).

Procedure

As in Study 3, participants imagined either a close friend or a distant acquaintance named Charlie had borrowed money for a concert ticket, food, or an Uber ride and that they had to request the money that was owed. Half of the participants read that Charlie is very friendly and easy to talk to for the decreased discomfort manipulation, while the other half (control) did not read an additional description of Charlie.[3] Then, participants chose how they would prefer to request money back from Charlie (either "using Venmo" or "Ask in person").

Results

Following our preregistration, we collapsed across the three scenarios and conducted a logistic regression of the choice of request method on a contrast-coded indicator for the requestee condition, a contrast-coded indicator for the discomfort condition, and the interaction between these terms. This analysis yielded a significant

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[2] When excluding participants who never used mobile payment apps, we found a significant indirect effect of aversion to appearing impersonal (indirect effect = .26, 95% CI [.02, .52]).

[3] Supplemental Material H includes posttest manipulation check results confirming that the requestee relationship and discomfort decrease manipulations worked as intended.

Figure 2

Mediation Model of (1) Discomfort of Requesting in Person and (2) Aversion to Appearing Impersonal

.24***
[.11, .41]

	Discomfort of Requesting In Person	

$a1 = .71***$ $b1 = .33***$

Requestee Relationship		Choice of Request Method
Distant Acquaintance: 1 Close Friend: 0	c' = .20	Venmo: 1 In-person: 0

$a2 = -1.41***$ $b2 = -.12^{†}$

	Aversion to Appearing Impersonal	

.17†
[-.02, .38]

$^{†} p < .10.$ $*** p < .001.$
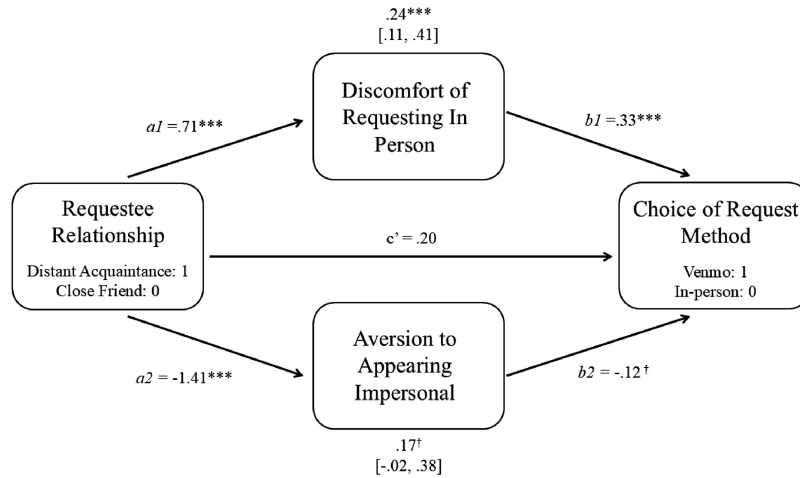
main effect of requestee relationship ($b = .72$, $SE = .13$, $z = 5.67$, $p < .001$) and a main effect of the discomfort manipulation ($b = -.45$, $SE = .13$, $z = -3.56$, $p < .001$). Although we expected a significant interaction between requestee relationship and discomfort, the interaction was only marginally significant ($b = -.44$, $SE = .25$, $z = -1.75$, $p = .081$). To explore this marginally significant interaction further, we conducted pairwise comparisons in the two discomfort conditions. We found that participants were more likely to request the money via a digital app from a distant acquaintance (58.36%; 157/269) than from a close friend, 35.46%; 100/282; $\chi^2(1, N = 551) = 29.02$, $p < .001$, in the *discomfort-control* condition where no additional information about the requestee was provided. In the *discomfort-decreased* condition, however, when Charlie was described as "very friendly and easy to talk to," the difference in digital app requests between a distant acquaintance (41.76%; 109/261) versus

a close friend, 30.4%; 83/273; $\chi^2(1, N = 534) = 7.48$, $p = .006$, was still significant, but directionally smaller (see Figure 3). The pattern of results was also consistent when looking at each scenario separately (see Supplemental Materials G, Table 1).

Discussion

If individuals prefer using digital apps to request money from acquaintances to avoid the discomfort of fiscal confrontation, then reducing this discomfort should influence their preferred approach. Results from Study 4A are partially in line with this conjecture. Reducing discomfort affects the choice of request method, particularly for distant acquaintances. However, it does not completely eliminate the preference for using a digital app when requesting money from distant acquaintances compared to close friends. This evidence is

Figure 3

Study 4A Percentage of Digital App Requests by Requestee and Discomfort Manipulation
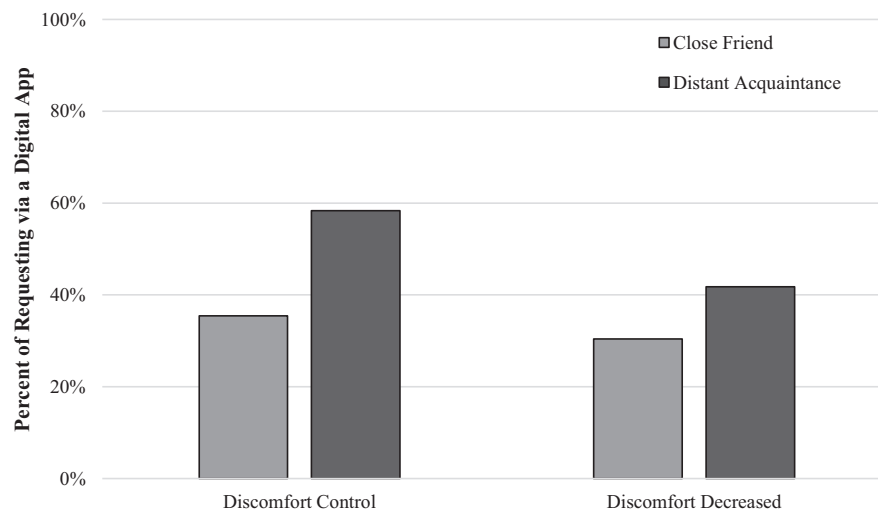
consistent with the idea that individuals choose to request via digital apps with acquaintances partly due to the discomfort they expect when requesting in person; this discomfort generally looms larger with acquaintances than with close friends.

Study 4B: Aversion to Appearing Impersonal Moderation

Study 4B examines our other proposed mechanism: the aversion to appearing impersonal. We manipulated participants' aversion to appearing impersonal by describing the requestee as someone who values warm interactions, thus making it important not to appear impersonal when requesting the money from them. We predicted that people are typically highly averse to appearing impersonal when requesting owed money from close friends but less so when requesting money back from distant acquaintances. Therefore, emphasizing that participants should avoid appearing impersonal should have less of an effect on participants requesting from close friends, who already focus on this dimension, but a relatively larger effect on participants who are requesting from distant acquaintances.

Method

Participants and Design

We recruited 1,402 Prolific Academic participants. All participants were asked about their age ("What is your age?") with an open-ended text box and gender ("What is your gender?") with the choice options: (a) Male, (b) Female, (c) Nonbinary, and (d) Prefer not to say. The average age of participants was $M_{age} = 28.36$. Seven hundred seventy-five participants reported their gender as male, 617 as female, five as nonbinary, and five preferred not to say their gender. No information about race or ethnicity was collected.

Participants were randomly assigned to one of four conditions in a 2 (requestee: close friend vs. distant acquaintance) × 2 (impersonal: control vs. averse) between-subjects experimental design. Each participant was then randomly assigned to view one of three scenarios (concert ticket, food, or Uber ride). Per our preregistration (https://aspredicted.org/blind.php?x=a2nv23), only participants who correctly answered the attention check questions were included in the analysis. This yielded a final sample of $N = 1,291$ ($n = 344$ in the *close friend-control* condition, $n = 321$ in the *distant acquaintance-control* condition, $n = 329$ in the *close friend-averse* condition, and $n = 297$ in the *distant acquaintance-averse* condition).

Procedure

As in Study 4A, participants imagined either a close friend or a distant acquaintance named Charlie had borrowed money for a concert ticket, food, or an Uber ride and that they had to request back the money that was owed. Participants in the *impersonal-averse* conditions read that Charlie is someone who values warm interactions, so it is critical in this situation for them to not appear impersonal when requesting the money. Participants in the *impersonal-control* conditions did not receive this information.[4] Then participants chose how they would prefer to request money from Charlie (either "using PayPal" or "Ask in person").[5]

Results

We collapsed results across the three scenarios, following our preregistration, and conducted a logistic regression of the choice of request method on a contrast-coded indicator for the requestee condition, a contrast-coded indicator for the impersonal condition, and the interaction between these terms. This analysis yielded significant main effects of requestee relationship ($b = .68$, $SE = .16$, $z = 4.32$, $p < .001$) and the impersonal manipulation ($b = -1.22$, $SE = .16$, $z = -7.73$, $p < .001$). Most importantly, we found a significant interaction between requestee and the impersonal manipulation ($b = -.93$, $SE = .31$, $z = -2.95$, $p = .003$). In the *impersonal-control* conditions, participants were more likely to request the money using a digital app with distant acquaintances (41.74%; 134/321) than with close friends, 18.60%; 64/344; $\chi^2(1, N = 665) = 42.52$, $p < .001$. However, when we highlighted an aversion to appearing impersonal (*impersonal-averse* conditions), this difference decreased and was no longer significant, *distant acquaintance*: 11.78%; 35/297; *close friend*: 9.73%; 32/329; $\chi^2(1, N = 626) = .69$, $p = .41$; see Figure 4. The pattern of results was consistent when looking at each scenario separately (see Supplemental Materials G, Table 1).

Discussion

Study 4B provided further evidence for the role of an aversion to appearing impersonal in people's choice of repayment request method. When people request owed money from a distant acquaintance (vs. a close friend), they are more likely to use digital apps because they are less averse to appearing impersonal in these relationships. However, we find an attenuation of this effect when the distant acquaintance is described as someone with whom people do not wish to appear impersonal.

## Study 5: Requesting Money Back in a Transactional Relationship

In Study 5, we sought to broaden our investigation in two ways. First, we wished to test a logical extension of our conceptualization: As one's relationship with a requestee becomes increasingly distant, we predict that their preferred financial interactions will become less socially rich as well. We therefore added a third experimental condition in which participants requested money back from a store vendor. We also included a new choice option, the least socially rich request method from our pilot test, a "standard bank app," to extend the boundaries of our stimuli on social richness. While Venmo and a standard bank app are similar in that they are both primarily used for digital transactions, a standard bank app lacks some of the social communication features of Venmo (e.g., text and emoji features), leading to even less socially rich interactions as verified by our second pilot study.

We expected to replicate our main pattern of results—people are more likely to request owed money from weak social connections

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[4] Supplemental Material H includes posttest manipulation check results confirming that the requestee relationship and impersonal-averse manipulation worked as intended.

[5] We changed the digital app choice option from "Venmo" to "PayPal" in this study because the recruited sample contains participants from the United Kingdom who most widely use PayPal.

Figure 4

Study 4B Percentage of Digital App Requests by Requestee and Impersonal Manipulation
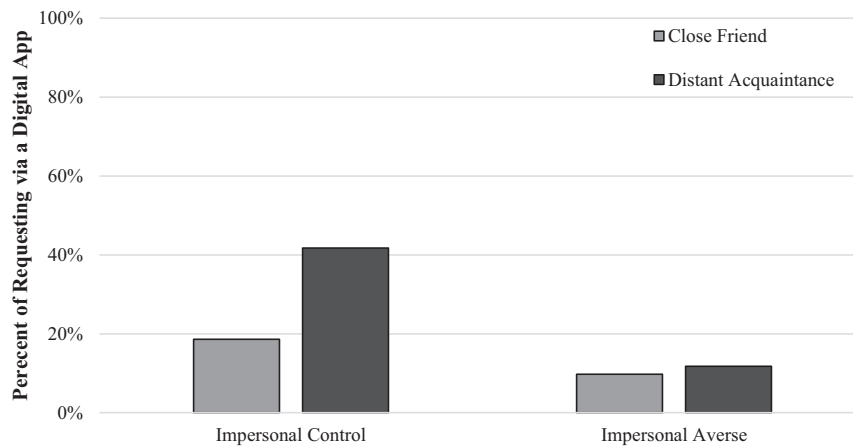
(distant acquaintances and store vendors) using less socially rich media (Venmo and a standard bank app) than when requesting from strong social ties (close friends). Moreover, we predicted that people would be more likely to request owed money via a standard bank app, the least social option, with the most distant and transactional relationship (a vendor) than when requesting from a close friend or a distant acquaintance.

Second, we explored how social connection strength affects people's decision to opt out of engaging in this uncomfortable interaction altogether. In practice, the potential discomfort and relationship threat individuals anticipate from requesting owed money may deter them from asking at all (e.g., Jaroszewicz, 2020). We wished to test whether the previously observed differences in communication choice persist when people can opt out of requesting money back.

Method

Participants and Design

We recruited 652 Prolific Academic participants. All participants were asked about their age ("What is your age?") with an open-ended text box and gender ("What is your gender?") with the choice options: (a) Male, (b) Female, (c) Nonbinary, and (d) Prefer not to say. The average age of participants was $M_{age} = 33.36$. Three hundred one participants reported their gender as male, 338 as female, 11 as nonbinary, and two preferred not to say their gender. No information about race or ethnicity was collected.

Participants were randomly assigned to one of three conditions (close friend, distant acquaintance, vendor) in a between-subjects experimental design. Following our preregistration (https://aspredicted .org/blind.php?x=yd6rn7), only participants who correctly answered the attention check question, such as how often they see the requestee, were included in the final analysis. This yielded a final sample of $N = 631$ ($n = 199$ in the *close friend* condition, $n = 228$ in the *distant acquaintance* condition, and $n = 204$ in the *vendor* condition).

Procedure

Participants in the *close friend* and *distant acquaintance* conditions imagined that either their close friend or distant acquaintance named

Charlie owed them money for breaking a set of their dishes. Participants in the *vendor* condition imagined that they had bought a set of dishes from a store vendor but discovered that the dishes were broken when they arrived home. The vendor's policy is that if any of the dishes are broken, people can request a refund in person during their next visit or take a photo of the broken dishes and request the refund electronically (see Supplemental Material E, Table 2, for scenario details).

Participants then answered the question, "How would you request the money from [name of close friend/name of distant acquaintance/ the pottery vendor]?" Participants could respond "Use Venmo," "Ask in person," "Use a standard bank app," or "Do not request the money back." Venmo was described as a digital payment service that allows users to request money through its phone app. Requesting in person was described as, "You will request the money from [Charlie/the vendor] face-to-face." The standard bank app was described as, "another standard bank app on your phone that allows users to request money through a phone app."

Results

Table 4 displays the raw counts and percentages of the request methods for each requestee relationship. A chi-square analysis revealed a significant relationship between requestee and the choice of request method, $\chi^2(6, N = 631) = 52.93$, $p < .001$.

Following our preregistration, we created three combinations of dummy variables to code the choice of request method: (a) Venmo and bank app (combined as "digital apps") versus in-person, (b) bank app versus Venmo and in-person, and (c) do not request the money back versus Venmo, in-person, and bank app.

The first combination of dummy variables (Venmo and bank app vs. in-person) tested our prediction that when participants chose to request owed money from weaker ties, such as a distant acquaintance or a vendor (relative to a close friend), they would be more likely to request using less social rich methods such as digital apps. The second combination of dummy variables (bank app vs. Venmo and in-person) tested our prediction that the least socially rich request method (bank app) would more likely be used with the least social relationship (vendor). The last combination of dummy

Table 4
Study 5 Percentage and Raw Counts of Each Request Method by Requestee Relationship

Requestee relationship	Request method			
	Venmo	In-person	Bank app	Do not request the money back
Close friend (n = 199)	18.59% (37/199)	56.28% (112/199)	5.03% (10/199)	20.1% (40/199)
Distant acquaintance (n = 228)	30.26% (69/228)	47.81% (109/228)	7.89% (18/228)	14.04% (32/228)
Vendor (n = 204)	35.29% (72/204)	49.02% (100/204)	14.22% (29/204)	1.47% (3/204)

variables (do not request the money back vs. Venmo, in-person, and bank app) explores how the strength of social ties affects people's decision to forgo requesting owed money back.

Close Friend Versus Distant Acquaintance

As predicted, pairwise comparisons showed that participants in the *distant acquaintance* condition (44.39%; 87/196) were more likely to request owed money via digital apps (Venmo and bank app) than were participants in the *close friend* condition, 29.56%; 47/159; $\chi^2(1, N = 355) = 8.21$, $p = .004$. That is, replicating previous findings, when people chose to request owed money from a distant acquaintance compared to a close friend, they were more likely to request using digital apps and less likely to request in person. We found no difference in the choice to request using the bank app between the *distant acquaintance* (9.18%; 18/196) and *close friend* (6.29%; 10/159) conditions, $\chi^2(1, N = 355) = 1.01$, $p = .31$. Lastly, participants in the *close friend* condition (20.1%; 40/199) were marginally significantly more likely to forgo requesting owed money than those in the *distant acquaintance* condition, 14.04%; 32/228; $\chi^2(1, N = 427) = 2.79$, $p = .095$.

Close Friend Versus Vendor

Participants in the *vendor* condition (50.25%; 101/201) were also more likely to request owed money using digital apps than were participants in the *close friend* condition, 29.56%; 47/159; $\chi^2(1, N = 360) = 15.70$, $p < .001$. Furthermore, participants in the *vendor* condition (14.43%; 29/201) were more likely to request owed money via a standard bank app than were participants in the *close friend* condition, 6.29%; 10/159; $\chi^2(1, N = 360) = 6.09$, $p = .014$. Lastly, participants in the *close friend* condition (20.1%; 40/199) were more likely to opt out of requesting back owed money compared to the *vendor* condition, 1.47%; 3/204; $\chi^2(1, N = 303) = 36.68$, $p < .001$.

Distant Acquaintance Versus Vendor

We found no difference in the choice to use digital apps with a distant acquaintance (44.39%; 87/196) and a vendor, 44.39%; 87/196; $\chi^2(1, N = 397) = 1.37$, $p = .24$. Contrary to our prediction, we also found no difference in the request made between the *vendor* (14.43%; 29/201) and *distant acquaintance* (9.18%; 18/196) conditions via a standard bank app, $\chi^2(1, N = 397) = 2.61$, $p = .11$, though patterns are directionally consistent with our prediction. Lastly, participants in the *distant acquaintance* condition (14.04%; 32/228) were more likely to opt out of requesting back owed money compared to the *vendor* condition, 1.47%; 3/204; $\chi^2(1, N = 303) = 22.83$, $p < .001$. The greater likelihood to forgo

requesting money in the *distant acquaintance* condition suggests that people do not view distant acquaintances as purely transactional relationships but likely do view vendors this way.

Discussion

These findings provided additional support for our main hypotheses, showing that people adaptively resolve indebtedness depending on the strength of their social connection with the other person. Replicating our previous studies, we found that people were more likely to request owed money using digital apps with weak (vs. strong) social ties. In addition, we found that more people requested using the least socially rich means (i.e., a standard bank app) when interacting with weaker social ties, such as a vendor, relative to stronger social ties, such as a close friend. This pattern indicates that as relationships become more distant, the preferred means of communication can become more distant as well.

Moreover, we found evidence that people were more likely to forgo requesting owed money with close social ties than with weaker social ties. This suggests that opting out of settling financial scores with peers is relatively common, even if this means absorbing the financial cost; however, people are less willing to forgo this financial loss with highly distant and potentially transaction-based social contacts, such as store vendors. Importantly, we also show that our main findings persist even when people are offered the option to not engage in the uncomfortable interaction at all (i.e., when they have the option to not request the money back).

Study 6: Requestee Preferences

In Study 6, we examine the perspective of the requestees (i.e., those who owe money), investigating whether the requesters' methods for asking for owed money align with how requestees prefer to be asked for that money. If requestees exhibit a stronger preference for being asked via a digital app when a distant acquaintance (vs. a close friend) asks for owed money, it suggests that requesters' approach to resolving indebtedness with each social tie could be well-calibrated. If, however, requestees' preferences do not align with requesters' preferred modes of asking based on the relationship approach, this would suggest a mismatch between how requesters attempt to navigate the difficult situation of requesting owed money back and how requestees wish they would do so.

Method

Participants and Design

We recruited 523 undergraduates from a public university. All participants were asked about their age ("What is your age?") with

an open-ended text box and gender ("What is your gender?") with the choice options: (a) Male, (b) Female, (c) Nonbinary, and (d) Prefer not to say. The average age of participants was $M_{age} = 20.87$. Three hundred eighteen participants reported their gender as male, 203 as female, one as nonbinary, and one preferred not to say their gender. No information about race or ethnicity was collected.

Participants were randomly assigned to one of two conditions in a two-cell (requester: close friend vs. distant acquaintance) between-subjects experimental design. Per our preregistration (https://aspredicted.org/9X6_L14), only participants who correctly answered the attention check questions were included in the final analysis. This yielded a final sample of $N = 439$ ($n = 232$ in the *close friend* condition and $n = 207$ in the *distant acquaintance* condition).

Procedure

Participants imagined they were attending a dinner with a group of people including Charlie, who is a close friend or a distant acquaintance. When paying for the dinner, participants were told that they had forgotten their wallet and could not pay for their dinner bill. So, they borrowed money from Charlie (see Supplemental Materials E, Table 3, for scenario details). On the next page, participants were told that it had now been a couple of days, and they had not paid back Charlie. There were two ways Charlie could request the owed money from the participants, either (a) requesting via Venmo or (b) requesting in person. Venmo was described as a digital payment service that allows users to request money through its phone app. Requesting in person was described as, "Charlie can request the money from you face to face (assume you see Charlie twice a week and the money will be paid through a digital payment method)." Participants then answered the question, "How would you prefer Charlie, [one of your closest friends/one of your distant acquaintances], asks you for their owed money?" Participants could respond either "Ask via Venmo" or "Ask in person." The choice options were counterbalanced.

Results

We found that participants in the *distant acquaintance* condition preferred to be asked for owed money via a digital app (72.46%; 150/207) more so than participants in the *close friend* condition (59.48%; 138/232), $\chi^2(1, N = 439) = 8.17$, $p = .004$. These results indicate that the requestee's preferences for how to be asked for owed money aligns with the findings of our prior studies, suggesting that requesters' strategic approach to resolving peer indebtedness is one that is indeed sensitive to requestees' preferences.

Furthermore, we conducted an analysis comparing participants' preferences for digital apps against a 50% baseline to examine whether their preferences deviated from indifference. Results showed that participants in both the *distant acquaintance*, $\chi^2(1, N = 207) = 41.78$, $p < .001$, and *close friend* conditions, $\chi^2(1, N = 187) = 8.34$, $p = .004$, generally preferred to be asked via a digital app. These findings are noteworthy because they suggest that while requestees may value the convenience of digital apps when asked for owed money, requesters, who frequently choose in-person requests, may be overestimating either (a) the perceived cost of appearing impersonal to the requestee or (b) the perceived importance of impersonality of these interactions from the requestee's perspective. Such a pattern is consistent with existing literature on gift-giving: gift-givers are generally more

concerned with the personal touch of the gift, whereas gift-recipients focus on the gift's desirability (Ward & Broniarczyk, 2016).

Discussion

In summary, Study 6 reveals two key insights regarding people's preferences for requesting and being asked for owed money. First, we observe a general difference in how requesters and requestees value digital requests. Requestees in this study consistently preferred digital requests, whereas our other studies show that requesters tend to prefer in-person requests with close social connections and are split in their preference between in-person and digital requests when interacting with distant acquaintances. Requesters may be overestimating the extent to which digital apps are perceived as impersonal, or the importance of this impersonality, to requesters.

Despite this overall difference in request type preferences for requesters versus requestees, a shift away from digital requests for strong social connections is a preference that both groups share. This insight provides a deeper understanding of how people navigate these sensitive topics based on the social relationship priorities at hand.

Study 7: Testing Generalization to a New Context

The goal of our final study is threefold. First, although the current research focuses primarily on how people resolve uncomfortable financial issues, we aim to explore the generalizability of our findings across uncomfortable nonfinancial domains as well, specifically health issues in this case. Our conceptualization suggests and demonstrates that people are more likely to communicate via methods low in social richness (e.g., digital payment apps) when communicating financial matters with their weak (vs. strong) social ties due to the discomfort associated with such conversations. If our predictions hold true, we should observe a similar pattern of results when people engage in discussions about other topics that evoke similar levels of discomfort.

Drawing from our pilot test results, which illustrate the perceived discomfort of discussing a range of sensitive topics with peers (Supplemental Materials A), we test the generalizability of our findings in the context of discussing health issues within one's social networks. Pilot test results showed that health issues are regarded as uncomfortable discussion topics, with discomfort being more pronounced with distant acquaintances than close friends. According to our conceptualization, we should replicate our primary findings such that when communicating uncomfortable health topics with weak (vs. strong) social ties, people should have a greater preference to use methods low in social richness.

Second, we explore the generalizability of our effect across another communication method low in social richness, specifically email communication. The social richness pilot test (Supplemental Materials B) indicates that email communication ranks significantly lower on the social richness scale compared to in-person communication. Thus, if we compare the preference for email versus in-person communication when communicating uncomfortable topics with one's social networks, we should replicate our primary findings. Specifically, we hypothesize that people will have a greater preference for email communication when discussing uncomfortable health topics with weak (vs. strong) social ties.

Last, we explore the boundaries of the effect by manipulating the sensitivity of the health issue. While discussions of health problems,

on average, may induce discomfort given their sensitivity, certain health topics are perceived as more sensitive than others. For instance, notifying one's social network about an upcoming sensitive medical procedure may evoke significant discomfort, whereas discussion of a dentist appointment may not. Therefore, we investigate whether topic sensitivity can act as a boundary even within the same topic category, and we hypothesize that when health topics are sensitive, people are more likely to prefer methods low in social richness when communicating with their weak (vs. strong) social ties. However, for less sensitive health discussions (e.g., a dentist appointment), we expect our effect to attenuate.

Method

Participants and Design

We recruited 1,006 Prolific Academic participants. All participants were asked about their age ("What is your age?") with an open-ended text box and their gender ("What is your gender?") with the choice options: (a) Male, (b) Female, (c) Nonbinary, and (d) Prefer not to say. The average age of participants was $M_{age} = 38.77$. Five hundred four participants reported their gender as male, 482 as female, 17 as nonbinary, and three preferred not to say their gender. No information about race or ethnicity was collected.

Participants were randomly assigned to one of four conditions in a 2 (coworker relationship: close friend vs. distant acquaintance) × 2 (health topic: sensitive vs. not sensitive) fully between-subjects experimental design. Per our preregistration (https://aspredicted .org/5R8_TN2), only participants who correctly answered the attention check questions were included in the analyses. This yielded a final sample of $N = 971$ ($n = 259$ in the *close friend-not sensitive* condition, $n = 226$ in the *distant acquaintance-not sensitive* condition, $n = 232$ in the *close friend-sensitive* condition, and $n = 254$ in the *distant acquaintance-sensitive* condition).

Procedure

Participants imagined they were going to miss a day of work and needed to let Charlie, a coworker who they consider either a close friend or a distant acquaintance, know about their absence. Participants in the *sensitive health topic* were told that the reason why they were missing work was because of a sensitive medical procedure. Participants in the *not sensitive health topic* condition were told that they were missing work because of a dentist appointment.

On the next page, participants were told that there were two ways to let Charlie know: (a) email them or (b) talk to them in person. The email option was described as, "You can email Charlie that you will be missing a day because of [a sensitive medical procedure/a dentist appointment]." Talking to them in person was described as, "You can tell Charlie in person that you will be missing a day of work because of [a sensitive medical procedure/a dentist appointment] (you see Charlie every day since you work with them)."

Participants then answered the question, "How would you first let Charlie, a coworker who you consider [a close friend/a distant acquaintance] know about your absence from work due to [a sensitive medical procedure/a dentist appointment]?" Participants could respond either "Email them" or "Talk to them in person." The order of the choice options was counterbalanced.

Results

Following our preregistration, we conducted a logistic regression of the choice of communication method (1 = email, 0 = in person) on a contrast-coded indicator for the coworker relationship condition, a contrast-coded indicator for the health topic condition, and the interaction between these terms. This analysis yielded a marginally significant main effect of coworker relationship ($b = .24$, $SE = .13$, $z = 1.87$, $p = .062$) and a nonsignificant main effect of topic sensitivity ($b = .16$, $SE = .13$, $z = 1.23$, $p = .22$). Importantly, we found a significant interaction between coworker relationship and health topic ($b = .54$, $SE = .26$, $z = 2.10$, $p = .036$).

Probing this interaction, we found that participants were more likely to communicate via email with a coworker who they considered a distant acquaintance (56.30%; 143/254) than a close friend, 43.53%; 101/232; $\chi^2(1, N = 486) = 7.90$, $p = .005$, in the *sensitive health topic* condition. In the *not sensitive health topic*, however, the difference in email communication between the *distant acquaintance* (45.58%; 103/226) and *close friend*, 46.33%; 120/259; $\chi^2(1, N = 485) = .03$, $p = .87$, conditions was significantly smaller.

Discussion

Our findings indicate that people's preference for different communication methods extends to other domains, such as health issues, and encompasses email communication as another method low in social richness. Moreover, we demonstrated that topic sensitivity acts as a boundary condition of our effect. Specifically, even within the same topic category, people prefer to communicate via methods low in social richness with weak (vs. strong) social ties when topics are sensitive; however, this preference attenuates when sensitivity decreases.

General Discussion

Requesting owed money from peers is uncomfortable and potentially fraught with relationship hazards. In the present research, we study how individuals navigate this challenge. Across nine studies, we find that people tailor their approach to requesting owed money based on the strength of their social connection with the requestee. In both retrospective recall paradigms (Studies 1A and 1B) and a stimulus-sampling experiment (Study 2), we document that people are more likely to request owed money using digital apps with weak social connections relative to strong social connections, even when controlling for how frequently they see the requestee. We further find via mediation (Study 3) and moderation (Studies 4A and 4B) that the difference in request method based on social closeness arises because when interacting with weak social ties, people anticipate greater discomfort from requesting in person and are less averse to appearing impersonal, resulting in greater preference for digital request options. Study 5 finds that people's preferred means of communication becomes increasingly distant as relationship strength weakens and that our main finding persists even when people can forgo requesting money back. Study 6 finds that how requestees prefer to be asked for owed money from close friends versus distant acquaintances directionally aligns with requesters' preferences. Finally, Study 7 shows that these preferences for how to best resolve sensitive interactions extend beyond financial matters to, for example, sensitive health topics.

Theoretical Contribution

The current research contributes to three bodies of literature: interpersonal relationships, financial decision making, and communication richness. A sizeable literature has addressed the connections between relationships and personal finances (Beshears et al., 2015; Bursztyn et al., 2014; Garbinsky & Gladstone, 2019; Olson & Rick, 2022; Rick et al., 2011) and the often-negative consequences of introducing money into peer relations (Fiske, 1992; Heyman & Ariely, 2004; Kim et al., 2019). While these findings provide insight into whether or not introducing financial matters affects relationships and vice versa, the current research contributes to our understanding of *how* people navigate the overlap of money and relationships and which relational factors take precedence in such situations. This work is also one of the rare examples that studies finances and social relationships outside of the realm of romantic relationships.

Previous work on personal finance also has stressed the importance of communicating about financial matters with our social connections (Carlin et al., 2018) and has documented the prevalence and significance of informal loans among families, friends, and communities (e.g., Banerjee & Duflo, 2007). Despite the ubiquity of interpersonal debt, little is understood about how people resolve such matters with their social connections and what they experience during this process. People make many decisions with an eye toward how others will perceive them (Barasch & Berger, 2014; Berman et al., 2015; Gershon et al., 2020; Paolacci et al., 2015), and we find that the domain of indebtedness is no exception. Our work contributes to this understudied domain of interpersonal debt and the psychology underlying individuals' approaches to maintaining financial and social harmony in this context.

Lastly, our work contributes to the growing work on social richness and digital communication. Recent work has begun to examine how individuals select communication methods and how this choice affects their well-being and social connections (Kumar & Epley, 2021). As technology advances, people increasingly adopt digital media (Auxier & Anderson, 2021), including using digital applications to pay and request money from peers. Approximately 720 million mobile payment users were recorded worldwide in 2017, and forecasts estimate its growth to over 2 billion users in 2027 (de Best, 2024). Despite this significant adoption of digital payment methods, to the best of our knowledge, our findings are the first to experimentally examine how and why digital apps are used to resolve interpersonal debt. Digital apps are often used to pay social connections as well as vendors (Unger et al., 2020; Zhang et al., 2017); thus, their role in interpersonal debt transactions should not be overlooked.

Alternative Explanations

One might wonder how the current findings align with work on communal versus exchange relationship norms (Clark & Mills, 1979, 1993, 2012). This influential body of research broadly conceptualizes family and close friends as communal relationships and acquaintances as exchange relationships (e.g., Ryu & Han, 2009) due to the differing norms of reciprocity for each relationship type. While the theory of Communal and Exchange (CE) Relationships offers some clear predictions about *whether* people would try to resolve indebtedness with friends versus acquaintances and, therefore, is relevant to some of the findings in Study 5 regarding people's likelihood of requesting money back based on relationship strength, it does not answer the key questions posed in the current research surrounding *how* people resolve interpersonal debt with each relationship type, which is our focus. Instead, we draw from research on social tie strength (Granovetter, 1973) and social richness (Daft & Lengel, 1986; Short et al., 1976) to generate predictions in this domain, as these ideas provide novel insights into how people behave differently with their social connections when resolving indebtedness, as well as into the psychological mechanisms underlying this behavior.

If anything, CE Relationships might predict the opposite of our proposition regarding anticipated discomfort and aversion to appearing impersonal if weak social ties are conceptualized as exchange relationships. Under conceptualizations of CE Relationships, exchange relationships prioritize equity and the amount of benefit that is exchanged (Clark & Mills, 1979, 1993, 2012). Therefore, people could anticipate *less* discomfort when requesting back owed money in person from weak (vs. strong) social ties given the transactional expectation of receiving back what is owed. However, our findings suggest this is not the case. Additionally, conceptualizations of CE Relationships might predict that people actually have lower concerns about appearing impersonal with strong ties because, in close relationships, we are more willing to forgive and accept each other's actions. While individuals in close relationships may indeed be more forgiving of each other's behavior, our findings suggest that concern for the greater value of these relationships (e.g., Garcia-Rada et al., 2022) plays a more influential role in decision making within this context.

Constraints on Generality

Even if the samples collected were diverse regarding some demographic characteristics (e.g., age, gender), it is important to note that all participants, except those in Study 4B, were drawn from the United States—a Western, educated, industrialized, rich, and democratic society (Henrich et al., 2010). This limitation raises the question of whether the current findings would generalize to other non-Western, educated, industrialized, rich, and democratic countries and various cultures.

While we anticipate our primary finding—individuals' approaches in navigating financial discussions are influenced by relationship strength—to be broadly applicable given the pervasive social intricacies surrounding money matters (Furnham et al., 1994; Li et al., 2009; Roberts & Sepulveda, 1999; Tang, 1993; Tang et al., 2002), it is important to acknowledge that cultural distinctions may influence an individual's perspective on money potentially impacting our observed effects. For instance, Falicov (2001) discussed that there is a tendency for collectivistic cultures to communicate indirectly and covertly to maintain harmony and mitigate conflicts. Such a tendency may "minimize their request for material or financial help … and use indirect communication or emotionally 'undercharged' language" (Falicov, 2001, p. 317). This suggests that individuals from collectivistic cultures, irrespective of relationship closeness, might opt for communication methods lower in social richness to avoid fiscal confrontations and protect their social bonds. Future research may delve into the way in which cultural differences in communication preferences and sensitivity toward financial interactions shape the approach individuals employ in navigating fiscal requests.

Additionally, it is important to consider how an individual's age and the changing norms surrounding digital app usage may

influence the generalizability of the observed effect. We recognize that the adoption of tech-based payment methods is likely to rise over time, especially among younger generations, potentially becoming the standard for financial communications in the future. To examine whether the effect of relationship closeness on digital payment app preference that we observe varies by age, we conducted supplementary analyses for Studies 1A, 1B, 2, and 3. These analyses tested whether participants' age interacts with the strength of social ties in predicting the choice of request method (see Supplemental Materials I for detailed results). Exploratory analyses revealed no significant interactions between age and the strength of social ties across our studies, suggesting that the effect of relationship closeness on tech-based payment methods may not differ across generations currently. Moreover, in Study 3, we found no significant interaction between age and relationship closeness on our proposed mechanisms of anticipated discomfort and aversion to appearing impersonal. Finally, in Studies 1A and 2, we observed an overall negative association between age and the preference for digital payment apps such that younger individuals have a stronger preference for tech-based payment methods when requesting owed money. This set of results suggests that while younger individuals may have overall greater tendencies to use tech-based payment methods when resolving financial matters, our primary effect regarding relationship closeness and communication richness does not appear to significantly vary between younger and older generations.

How might changing norms of digital payment app usage influence our observed effect in the future? We believe that while the specific digital communication methods (e.g., Venmo, PayPal, Bank apps) may change over time, the preference for communication methods low in social richness when discussing sensitive topics with weak social connections, and the underlying mechanisms driving this effect (i.e., discomfort of in-person requests and aversion to appearing impersonal), will remain. To illustrate, consider the evolution of communication methods such as mobile phones. The perceived social richness of mobile phone communication may have been notably lower upon its introduction (e.g., Sproull & Kiesler, 1986; Walther, 1996). However, as societal norms shifted and technology advanced, methods like phone calls and text messages became more prevalent as means of social communication, increasing their perceived social richness. On the other hand, newly introduced technologies (e.g., tech-based payments) may initially be perceived as less socially rich forms of communication, as shown in our social richness pilot test (Supplemental Materials B). Such an evolving perception of social richness would suggest that individuals' preferences for a specific communication method will also likely evolve depending on which medium is perceived to be higher or lower in social richness at that time. Nevertheless, we believe that our broader findings (i.e., people prefer methods low in social richness to discuss sensitive topics with distant social connections) will endure because the basic psychological principles will persist.

Lastly, is it possible that people's preferences for requesting owed money through digital methods vary based on the amount owed? Given that larger sums of money may be associated with heightened socioemotional impacts, such as increased anxiety and financial stress (e.g., Ong et al., 2019), we explored whether the amount owed interacts with relationship closeness to influence preferred request method (see Supplemental Materials J for detailed results). We found that individuals are less likely to use digital methods for larger amounts of money ($p = .009$). Interestingly, however, there is no significant interaction between relationship closeness and the amount of money owed regarding digital method preferences ($p = .33$). This suggests that people tend to avoid digital requests for larger amounts and prefer to resolve such matters in person; however, people's preference to use digital methods based on relationship closeness does not appear to significantly vary based on owed amounts.

Conclusion

Interpersonal indebtedness evokes substantial unease. The current research shows that the strength of people's social connections affects how they attempt to resolve this uncomfortable situation. To fight the discomfort of requesting money in person, people rely on media low in social richness to communicate with weak social connections about owed money. At the same time, people use more sociable means to communicate about money issues with their strong social connections to avoid appearing impersonal. Thus, this research documents that when navigating uncomfortable interactions, people selectively maneuver based on the needs of the social relationship at hand.

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