

**SOCIAL CONCERNS AND FINANCIAL REASONING WHEN BORROWING FROM  
FAMILY**

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## ABSTRACT

Consumers who face financial hardship may want to borrow money from friends and family members. From a financial standpoint, such *informal loans* are often attractive: they tend to offer favorable terms relative to formal loans and are available to many consumers. However, mixing family and money can be socially risky, potentially straining close relationships. We find that, relative to formal borrowing, informal borrowing elicits negative self-conscious emotions such as guilt, shame, and embarrassment. These emotions serve an important social role, helping borrowers preserve valued relationships. At the same time, thoughts associated with these emotions dominate the borrower's cognition, leading consumers to neglect the financial advantages of informal loans. Although these emotions inhibit borrowers from seeking informal loans, they may also serve an interpersonal function by increasing lenders' willingness to provide support. Our findings reveal a fundamental tension in informal borrowing: the very psychological processes that help consumers maintain social relationships can interfere with the financial tradeoff thinking required to make economically advantageous financial decisions.

## CONSUMER RELEVANCE AND CONTRIBUTION STATEMENT

In this research, we address a significant gap in understanding how consumers manage their expenses by examining their use of informal loans: money borrowed from family and friends. Prior research has focused primarily on when and how consumers think about and use formal debts, such as bank loans, credit cards, or payday loans. In contrast, comparatively little work has examined how consumers evaluate informal borrowing, which differs from formal borrowing due to its favorable financial terms but potentially reputational and relational costs.

We contribute by showing how these social and financial concerns interact. First, we show how asking family for money can lead to negative self-conscious emotions such as guilt, shame and embarrassment. In addition, we show that consumers think comparatively little about the practical financial details of such loans. Next, we show that these negative self-conscious emotions directly inhibit financial tradeoff thinking, diminishing willingness to borrow from family through this route. Finally, we show how negative self-conscious emotions can preserve relationships with lenders and help borrowers secure aid.

This work advances understanding of an understudied aspect of consumer financial decision-making and highlights how social concerns can override thinking about financial tradeoffs. It offers insights for consumers facing financial hardship, who may recognize how social concerns shape their evaluations of financial options. It also informs policymakers seeking influence consumer financial decision-making through messaging or regulation. Finally, it is relevant to fintech firms that facilitate informal loans by providing insights for messaging.

## INTRODUCTION

Kevin has been struggling to keep up with his bills lately – a mortgage, car payments, student loans, and a new baby to feed have stretched his finances thin. One morning while driving to work, he notices that his car is emitting a burning smell. He takes his car to the mechanic, who tells him the brake pads have worn down completely, and the repair will cost \$1,500. Kevin cannot afford to pay this additional expense himself. Though his family is not well off, he does have a successful cousin who has helped family members financially in the past and who he believes would probably lend him money if asked. However, Kevin is worried that his cousin will judge him for his financial struggles and does not want to face the embarrassment of having that conversation. Instead, Kevin decides it would be easier to use his credit card to pay the expense. He believes he will be able to pay it off over the course of the year, though he will pay a couple hundred dollars in interest.

When experiencing financial hardship, consumers like Kevin often consider how to borrow money to cover their expenses. Like Kevin, they may use *formal* financial products, such as credit cards, personal bank loans, or payday loans. Alternatively, they may rely on *informal* loans provided by family members, friends, or other private individuals. Although formal and informal loans can serve the same purpose, they involve different costs and benefits. Compared to formal loans, informal loans introduce social concerns, as borrowers must consider how asking for financial aid might affect their social standing and close relationships. At the same time, informal loans can offer substantial financial advantages, including lower or no interest, fewer fees, and no credit checks. Though Kevin decided to use his credit card, many consumers seek informal loans due to their financial benefits (Rieck 2026). In this research, we examine

how consumers navigate the social concerns and financial tradeoffs involved in borrowing money from family members.

Asking a family member for a loan is socially risky. A prospective borrower needs to justify their need to the lender and risks seeming irresponsible, needy, or presumptuous in the process (Bénabou, Jaroszewicz, and Loewenstein 2025; Karaivanov and Kessler 2018; Lee and Persson 2016). *Negative self-conscious emotions* such as embarrassment, shame, and guilt help people anticipate and manage social threats like these. Such emotions help individuals notice and avoid situations in which they might lose social standing. In addition, when one must do something that harms their social standing, expressing self-conscious emotions can help preserve and repair relationships (Feinberg, Willer, and Keltner 2012). Prior work suggests that negative self-conscious emotions should be especially common when consumers consider informal borrowing during financial hardship: people experience shame when struggling financially (Starrin, Åslund, and Nilsson 2009), guilt when burdening others (Feige and Yen 2021), and embarrassment when asking for help (Lens, Nugent, and Wimer 2018). Therefore, we propose that consumers considering informal loans will experience greater negative self-conscious emotions than consumers considering formal loans.

Despite their social risks, informal loans can offer substantial financial advantages relative to formal loans. They do not have the fees, screening processes, and credit checks associated with formal borrowing and often charge low or no interest (Karaivanov and Kessler 2018; Lee and Persson 2016, 2024). Formal lenders, in contrast, typically charge interest, ranging from roughly 12% APR for bank loans to 300% APR or more for short-term loans such as payday loans. Because of these financial benefits, consumers sometimes use informal loans

instead of formal loans. Normatively, consumers deciding whether to borrow from family should weigh these financial advantages against the potential social costs of asking for help.

However, consumers may not fully weigh these social and financial considerations when deciding whether to borrow from family. We propose that the negative self-conscious emotions associated with informal borrowing reduce consumers' engagement in financial tradeoff thinking. Negative self-conscious emotions are affective – therefore, they will likely arise automatically, influencing subsequent cognition and attention (Chang and Pham 2013; Loewenstein 1996; Zajonc 1984). In contrast, interest rates, fees, and other financial tradeoffs of different loans are relatively less emotional and therefore less salient. As a result, the negative self-conscious emotions associated with informal borrowing should crowd out consideration of its financial advantages. This attentional narrowing may lead some consumers who would otherwise prefer informal loans to instead choose more costly formal borrowing options.

We thus show that the social cognitive processes that arise when considering informal borrowing can prevent consumers from thinking about the financial tradeoffs between informal loans and formal alternatives. Our research builds on work on informal borrowing in consumer psychology showing its social costs (Angulo, Goldstein, and Norton 2024; Dezső and Loewenstein 2012), and on work in economics showing why informal loans have such low interest rates (Ayyagari et al. 2010; Demirguc-Kunt et al. 2018; Karaivanov and Kessler 2018; Lee and Persson 2016, 2024) by showing how borrowers think about both these concepts. More broadly, our findings suggest that emotions arising from social relationships can impact not only consumers' preferences, but also the information they attend to and consider when making financial decisions. Cognitive processes that help preserve relationships can lead people to neglect to consider financial tradeoffs.

## INFORMAL BORROWING ACROSS THE INCOME SPECTRUM

Consumers across the income distribution frequently borrow, lend, and gift money within their social networks (Morduch, Ogden, and Schneider 2015). A 2017 survey found that 38 percent of respondents had engaged in informal borrowing or lending in the past year (Chow 2017), with both lower- and higher-income households relying on them (Long 2020). People engage in informal borrowing for many reasons, including starting a business, paying for school, or covering unexpected expenses. In this research, however, we focus on informal borrowing during periods of financial hardship, which many consumers experience at some point in their lives (Rank and Hirschl 2015). In the remainder of this section, we report two supplemental studies that demonstrate the widespread availability of informal loans to consumers across the income spectrum during periods of financial strain.

Using data from the United States Household Pulse survey (United States Census Bureau 2024; Supplemental Study S1: N=2,776,484; see WA-C for full study details) we examine how rates of informal borrowing vary by income level and financial hardship. We find that, although lower-income Americans borrow from family more frequently overall, rates of informal borrowing increase substantially across all income levels when consumers experience financial hardship (see Table 1). Indeed, much of the overall relationship between income and informal borrowing appears related to differences in the frequency of financial hardship across income groups: higher-income households report lower rates of borrowing in part because they are less likely to experience severe financial strain. When they experience significant financial hardship, high-income households report rates of informal borrowing above 25%. These descriptive results suggest that, although informal borrowing varies by income, it is used during periods of financial hardship by consumers across the income distribution.

**TABLE 1:**  
**PERCENTAGE USING INFORMAL LOANS IN LAST SEVEN DAYS BY INCOME AND**  
**FINANCIAL HARDSHIP**

Household income	Difficulty paying expenses in last 7 days				Row average
	Not at all difficult	A little difficult	Somewhat difficult	Very difficult	
\$12,500 or less	3.8% (n=53,756)	14.4% (n=67,829)	25.8% (n=75,065)	48.9% (n=89,125)	27.1% (n=285,775)
\$12,500 to \$32,500	1.4% (n=63,804)	10.0% (n=64,948)	20.8% (n=59,036)	45.0% (n=48,106)	18.7% (n=235,894)
\$32,500 to \$42,500	1.0% (n=103,968)	7.5% (n=83,384)	18.2% (n=64,562)	41.2% (n=44,713)	13.9% (n=296,627)
\$42,500 to \$62,500	0.6% (n=215,378)	5.6% (n=129,064)	13.9% (n=83,272)	37.8% (n=46,873)	9.0% (n=474,587)
\$62,500 to \$87,500	0.5% (n=220,036)	4.2% (n=100,623)	11.1% (n=54,322)	32.0% (n=25,251)	5.6% (n=400,232)
\$87,500 to \$125,000	0.3% (n=330,640)	3.2% (n=111,306)	9.1% (n=50,198)	27.3% (n=19,596)	3.3% (n=511,740)
\$125,000 to \$175,000	0.3% (n=188,292)	2.7% (n=44,923)	8.2% (n=17,018)	23.4% (n=5,941)	2.1% (n=256,174)
\$175,000 to \$250,000	0.3% (n=267,224)	2.7% (n=33,299)	7.3% (n=10,909)	25.7% (n=4,023)	1.3% (n=315,455)
Column average	0.7% (n=1,443,098)	7.0% (n=635,376)	17.4% (n=414,382)	42.5% (n=283,628)	11.3% (n=2,776,484)

*Note.* Percentages are weighted to be nationally-representative of the U.S. population with respect to sex, age, and educational attainment, race, and Hispanic origin in the American Community Survey in the year of data collection. Data collected between 2020-2023.

We also examine whether consumers tend to have access to informal loans (i.e., whether they know someone they could plausibly approach for financial help). We recruited participants from Prolific (Supplemental Study S2: N=206; see WA-C for full details) and asked them to list six family members. Participants next indicated whether each person would be able to lend them money for an unexpected expense if asked. Overall, 94 percent of participants (95% CI: [89%, 96%]) reported knowing at least one family member who would be willing to give them a loan. Even among the lowest income participants (income <\$25,000), 86 percent reported having at

least one such person who would willingly help them.<sup>1</sup> Together, the findings of these two supplemental studies suggest that access to informal loans to cover expenses during periods of hardship is widespread across income levels. For this reason, we study consumers of all income levels in this research.

### **THE SOCIAL FUNCTION OF NEGATIVE SELF-CONSCIOUS EMOTIONS**

Although informal loans can offer relief to consumers experiencing financial hardship, asking another person for financial support can harm the borrower's social standing (Bénabou et al. 2025; Nadler 1991, 2015). Needing financial assistance may signal dependence or an inability to provide for oneself, which conflicts with widely held norms of independence and self-reliance (Arnett 2000; Zelizer 1989). Needing to reveal one's financial struggles to close others may lead one to worry about being judged and seen as lesser by peers. Such worries are psychologically potent: they receive preferential attention and elicit negative self-conscious emotions such as embarrassment, guilt, and shame (Dickerson and Kemeny 2004; Sznycer 2019; Zein et al. 2024). These emotions help people monitor situations that might harm their social standing, helping them to avoid such situations or repair relationships if necessary. Accordingly, we predict that considering informal borrowing, which entails exposing one's financial hardship to members of one's social network, should elicit elevated negative self-conscious emotions compared to other ways of paying expenses.

The borrower's negative self-conscious emotions also communicate to the lender.

Negative self-conscious emotions play an important social role by communicating the internal state of the person feeling the emotion to others. Asking another person for money imposes on

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<sup>1</sup> Because Prolific participants were used in most of our studies, Study S2 suggests that participants we examine had access to informal borrowing opportunities.

the lender and may strain the relationship. Prior work has shown that expressions of guilt, shame, or embarrassment signal trustworthiness and positive moral character (Stearns and Parrott 2012). Apologies (Hareli and Eisikovits 2006), blushing (Halmesvaara et al. 2020), and expressions of thanks (Tangney, Stuewig, and Mashek 2007) all improve observers' evaluations of and increase prosocial behavior toward the expresser. For example, participants in one study behaved more prosocially toward a partner they believed blushed with embarrassment after defecting in a prisoner's dilemma than toward one who did not blush (Dijk et al. 2011). In the context of informal borrowing, therefore, we predict that expressions of negative self-conscious emotions may similarly help borrowers communicate positive traits to lenders. Accordingly, although considering informal borrowing should elicit elevated negative self-conscious emotions in borrowers, these same emotions should increase lenders' willingness to provide borrowers with support.

### **NEGATIVE SELF-CONSCIOUS EMOTIONS INHIBIT FINANCIAL COMPARISONS**

Although informal borrowing may strain relationships, consumers may nevertheless prefer such loans because they offer substantial financial advantages over formal borrowing. Informal loans typically involve lower interest rates, fewer fees, and fewer barriers to access than formal loans. These advantages may be especially important when consumers are struggling to meet their financial obligations. For example, one recent report found that 34 percent of Americans could not make their full monthly debt payments, leading to financial hardship and anxiety (*Rising Debt Is Taking a Toll on Americans' Financial and Mental Health* 2026). Normative models of decision making suggest that consumers should consider all the costs and benefits of informal borrowing and integrate them to make a decision (Baron 2004). However,

we propose that negative self-conscious emotions will hinder consideration of financial benefits. This will occur due to a combination of the affective nature of negative self-conscious emotions (Castro and Fernández 2026; Eisenberger 2015) and to the limited cognitive capacity consumers have to consider all aspects of a decision (Simon 1990).

We predict that thoughts related to negative self-conscious emotions will arise early in the thought process and recur frequently. This cognitive process will produce *attentional narrowing*: neglect of the financial tradeoffs between informal and formal borrowing. Individuals have limited cognitive capacity, and the activation of one type of thought can inhibit consideration of others (Johnson, Häubl, and Keinan 2007; Shah, Friedman, and Kruglanski 2002; Simon 1990). For example, retrieving one particular piece of information can inhibit or reduce access to related but distinct information (Anderson, Bjork, and Bjork 2000; Murayama et al. 2014). We propose that thoughts related to negative self-conscious emotions can crowd out consideration of the relatively less salient financial advantages of informal borrowing, consistent with prior work demonstrating neglect of decision-relevant attributes in other domains (e.g., Frederick et al. 2009; Kardes, Pfeiffer, and Bechkoff 2012; Pennycook, Newton, and Thompson 2022). In other words, instead of fully weighing the social and financial consequences of borrowing from family, many consumers may focus so heavily on negative self-conscious thoughts that they fail to meaningfully consider the financial implications of their choice.

Thus, we propose a fundamental tension in informal borrowing during financial hardship: the negative self-conscious emotions that protect borrowers' social standing and relationships interfere with financial tradeoff thinking. Specifically, due to their affective nature, these negative self-conscious thoughts dominate cognition and inhibit consideration of the financial advantages of informal borrowing. As a result, borrowers may fail to fully weigh the financial

consequences of their borrowing options, leading some consumers to choose more costly formal loans instead of considering economically advantageous informal alternatives.

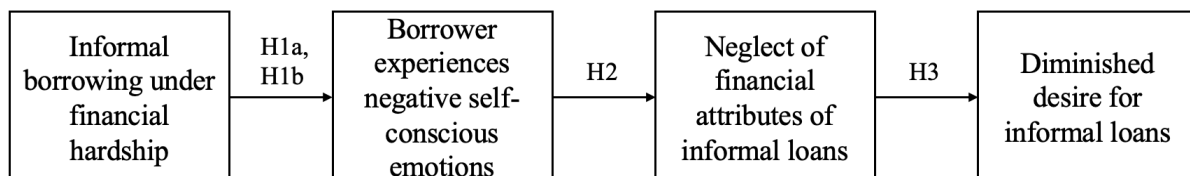
## OVERVIEW OF STUDIES

Across eight studies (plus three supplemental studies reported in the Web Appendix), we show that informal borrowing elicits elevated negative self-conscious emotions and that these emotions inhibit financial tradeoff thinking. This thought process reduces willingness to borrow from family. Figure 1 presents our conceptual framework and hypotheses.

In all studies involving participant recruitment, participants completed a two-item English comprehension and attention check prior to beginning the survey; those who failed were excluded from participation. All surveys were completed in full screen mode on desktop devices. Studies 1c, 2a, 2c, 4, and S3 additionally used Prolific’s built-in AI-use detection feature. Materials for all studies are available at [https://researchbox.org/4576&PEER\\_REVIEW\\_passcode=YWYYVQ](https://researchbox.org/4576&PEER_REVIEW_passcode=YWYYVQ). All studies were preregistered.

**FIGURE 1**

### THEORETICAL FRAMEWORK AND HYPOTHESIS OVERVIEW



As detailed in the figure, we hypothesize:

**H1a:** Consumers considering informal borrowing during financial hardship will experience greater negative self-conscious emotions than consumers considering other forms of borrowing.

**H1b:** These negative self-conscious emotions will arise because informal borrowing requires exposing one's financial need to members of one's social network.

As described earlier, we hypothesize that negative self-conscious emotions will crowd out other forms of cognition, particularly financial tradeoff thinking related to informal borrowing.

**H2:** Negative self-conscious emotions will produce *attentional narrowing*, reducing consumers' consideration of the financial tradeoffs associated with informal borrowing.

Further, we hypothesize that, when consumers do not engage in financial tradeoff thinking, they will become less willing to borrow from family.

**H3:** Reduced financial tradeoff thinking will decrease willingness to borrow from family.

Finally, because negative self-conscious emotions can communicate that the borrower understands the costs of the request to the lender (Hareli and Eisikovits 2006), we also test whether expression of negative self-conscious emotions increases lenders' willingness to provide support. This test speaks to the social role of negative self-conscious emotions from the lender's perspective.

Study 1a provides initial support for a negative correlation between negative self-consciousness and financial tradeoff thinking, showing high levels of expression of negative self-consciousness in a large-scale analysis of Reddit posts, providing support for H1a and H2. Studies 1b and 1c test H1a and H1b, showing in controlled online studies that informal borrowing elicits elevated negative self-conscious emotions. Studies 2a, 2b, 2c, and 3 support H2 and H3, demonstrating that these emotions inhibit financial tradeoff thinking and reduce

willingness to borrow from family. Finally, Study 4 examines the interpersonal implications of negative self-conscious emotions, showing that lenders are more willing to provide support to borrowers who express such emotions. Table 2 provides an overview of all studies, findings, and hypotheses supported.

**TABLE 2:**  
OVERVIEW OF STUDIES

<b>Study</b>	<b>Sample size</b>	<b>Design</b>	<b>Main finding(s)</b>	<b>Hyp. supp.</b>
Study 1a	438,363 (Reddit posts)	Large-scale text analysis	Posts about informal loans contain more negative self-conscious content and less financial tradeoff thinking than posts about other loans	H1a, H2
Study 1b	218 (Prolific)	Survey	Consumers experience greater negative self-conscious emotions when considering informal loans than formal loans	H1a
Study 1c	524 (Prolific)	Experiment	Negative self-conscious emotions arise because informal borrowing exposes financial hardship to members of one's social network	H1a, H1b
Study 2a	418 (Prolific)	Experiment, thought-listing	Informal loans elicit more emotional thoughts and fewer financial tradeoff thoughts than credit cards Emotional thoughts negatively correlate with subsequent financial tradeoff thinking	H1a, H2
Study 2b	411 (Prolific)	Thought-listing	Consumers generate more negative self-conscious thoughts than financial tradeoff thoughts when considering informal borrowing Negative self-conscious thoughts negatively predict financial tradeoff thinking Financial tradeoff thinking positively predicts willingness to borrow from family	H1a, H2, H3
Study 2c	625 (Prolific)	Experiment, thought-listing	Negative self-conscious thoughts causally reduce financial tradeoff thinking Financial tradeoff thinking causally reduces negative self-conscious thoughts Thought content causally influences willingness to borrow from family	H1a, H2, H3
Study 3	148 (Prolific)	Survey	Making interest rates salient increases preference for informal borrowing.	H3

Study 4	792 (Prolific)	Experiment	Lenders are more willing to help borrowers who express negative self-conscious emotions in borrowing requests	H1b
Study S1	2,776,484 (Census data)	Nationally-representative survey	Informal borrowing occurs across the income distribution during financial hardship.	-
Study S2	209 (Prolific)	Social network survey	Most consumers across income levels report access to at least one potential informal lender	-
Study S3	401 (Prolific)	Experiment	Controlled replication of Study 4 showing that self-conscious emotions improve lender evaluation.	-

### STUDY 1A: NEGATIVE SELF-CONSCIOUS EMOTIONS ON REDDIT

Study 1A is a large-scale, correlational test of H1a and H2 using data from an online forum where users post about their personal financial situations. It had three objectives: 1) to test whether posts about informal loans have more negative self-conscious content than posts about other types of loans, 2) to test whether posts about informal loans contain less content about financial attributes than posts about other types of loans, and 3) to show that negative self-conscious content and financial attributes content had a negative correlation. We also show that these patterns are stronger for self-conscious cognitions than for general negative emotionality. Posts were about many different things, so we did not expect overall high levels of negative self-consciousness: our hypotheses concerned relative levels of negative self-consciousness.

**Data and Filtering.** Our data were posts from /r/personalfinance from its inception on February 2, 2009 to December 2025 collected using the PushShift API framework (Baumgartner et al. 2020). After removing deleted or empty posts, approximately 1 million posts remained. We then used the LLM gpt-5.4-nano to classify each post based on (a) whether it primarily concerned a loan and (b) the type of loan discussed. See WA-A for a full list of loan categories and the full prompt. After filtering, the final sample consisted of 438,363 posts describing

personal financial situations involving a loan (including 13,057 involving informal loans) written by 332,437 unique authors between August 7, 2010, and December 31, 2025.

***Negative self-conscious emotions coding.*** After filtering to posts about loans, we used gpt-5.4-nano to code the level of self-consciousness expressed by each poster. Following prior work showing that LLMs can perform comparably to human coders at identifying emotional content (Mousavi et al. 2026; Rathje et al. 2024), we prompted the model to generate a single self-consciousness rating for each post. Specifically, it received the following instructions: "Role: You are a highly emotionally intelligent and careful coder. Task: Read the post and output exactly one integer code. Please assess how much negative self-consciousness the post expresses. Negative self-consciousness is a family of emotions including guilt, shame, and embarrassment. Please assess the level of negative self-consciousness from 1 to 7. Posts can be questions, stories, information, or anything else. Regardless of the style of the post, please code how much it describes negative self-conscious emotions such as guilt, shame, and/or embarrassment. 1 = the post expresses no self-consciousness (guilt, shame and/or embarrassment), 7 = the post expresses a great deal of self-consciousness (guilt, shame, and/or embarrassment). Code meaning, don't just look for keywords." We also conducted an analysis using LIWC proxies (reported in WA-B) with similar results.

***Financial tradeoffs coding.*** We also used gpt-5.4-nano to code the extent to which each post compared the financial attributes of the loan being discussed to alternatives. We used the following prompt: "Task: Read the post and output exactly one integer code. Posts are about loans. Assess how much the post focuses on comparing the practical financial details of the poster's loan to other types of loans. Posts can be questions, stories, information, or anything else. Regardless of the style of the post, please code how much, when it discusses a loan, it

compares the financial details of that loan to other types of loans. Rate this from 1 to 7: 1 = no comparison of relative financial details, 7 = lots of comparison of relative financial details.”

## Results

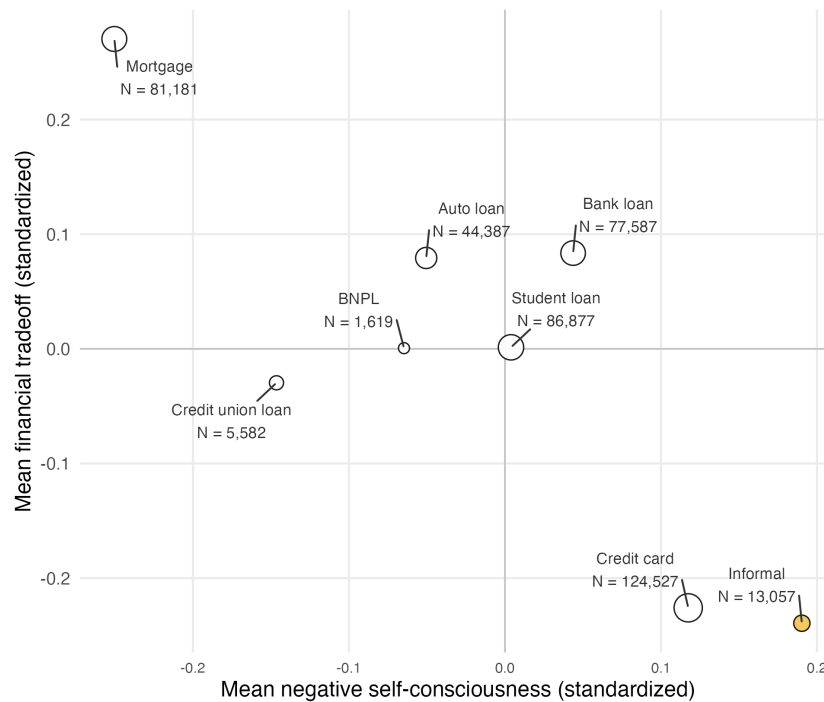
We predicted that informal loans would elicit higher negative self-conscious emotions than other types of loans. To test this, we conducted a linear mixed model predicting LLM-rated self-consciousness by loan type, controlling for the date of the reddit post and its length in words and including a random intercept for each author.

*Levels of negative self-consciousness and financial tradeoffs.* Posts about informal loans exhibited the second-highest expression of negative self-conscious emotions ( $M=1.97$ ,  $SD=1.24$ ), higher than all other types of loans (third were credit cards:  $M=1.89$ ,  $SD=1.17$ ,  $B=-.07$ ,  $SE=.0098$ ,  $t=-7.23$ ,  $p<.001$ ) except for short-term, high-interest loans ( $M=2.57$ ,  $SD=1.54$ ,  $B=.57$ ,  $SE=.020$ ,  $t=28.54$ ,  $p<.001$ ). They also exhibited the lowest financial attributes ratings ( $M=1.80$ ,  $SD=1.44$ ), significantly lower than all other loans (though marginally significantly lower than credit cards, the second lowest ( $M=1.82$ ,  $SD=1.43$ ,  $B=.026$ ,  $SE=.015$ ,  $t=1.74$ ,  $p=.08$ )). A mixed regression predicting the financial tradeoffs rating by the negative self-conscious emotions rating, controlling for the date of the post and including a random intercept for author revealed a negative correlation between self-consciousness and financial attributes discussion ( $B=-.19$ ,  $SE=.0023$ ,  $t=-80.41$ ,  $p<.001$ ). Another mixed regression controlling additionally for the length of the text replicated the relationship ( $B=-.24$ ,  $SE=.0023$ ,  $t=-103.86$ ,  $p<.001$ ). Figure 2 highlights how posts about informal loans exhibited high rates of negative self-consciousness and low levels of writing about financial tradeoffs relative to other loan types. See WA-B for a table of all values and statistical tests, as well as analyses using proxies in the LIWC, including

an analysis showing that the high levels of negative self-conscious emotions observed in informal loan posts are over and above general negative emotionality.

**FIGURE 2:**

**NEGATIVE SELF-CONSCIOUSNESS AND FINANCIAL TRADEOFF WRITING**



*Note.* Circle size denotes number of posts of each type. The x- and y- axes are standardized to have mean 0 and standard deviation 1 and are in units of standard deviations. Short-term, high-interest loans are excluded.

## Discussion

The results of Study 1a provide initial support for H1a and H2: posts about informal borrowing exhibited greater negative self-conscious emotions, and this self-consciousness may lead to less consideration of financial attributes. However, these results should be interpreted with caution due to the study's correlational nature. The findings do not allow us to infer that considering informal loans *causes* elevated self-consciousness or lower financial attribute thinking, nor that one of these causes the other. The language used in the posts likely reflects a combination of factors, including the borrower's personal circumstances (e.g., age or financial

hardship), the consequences of borrowing, and norms surrounding how different types of loans are discussed. These factors may correlate with loan type and expressions of self-consciousness. Thus, Study 1a provides descriptive evidence that consumers writing about informal loans tend to use more self-conscious language than those writing about other types of loans and discuss their practical financial aspects less. In Studies 1b and 1c, we test whether considering informal loans directly leads to negative self-conscious emotions. In Studies 2a-2c, we test how these negative self-conscious emotions impact thoughts about financial attributes.

### **STUDY 1B: INFORMAL LOANS LEAD TO HIGH SELF-CONSCIOUSNESS**

A key limitation of Study 1a is that it did not disentangle negative self-conscious emotions arising from borrowers' personal circumstances (e.g., financial hardship) from those associated with the type of loan under consideration. For example, the elevated negative self-conscious emotions observed in posts about informal loans may reflect the financial distress of the borrowers rather than informal borrowing itself. In Study 1b, we address this limitation and further test H1a by holding the borrowing situation constant while asking participants to consider multiple ways of covering the same expenses, including informal loans, credit cards, and bank loans.

#### **Method**

***Participants and procedure.*** We recruited 219 participants from Prolific. One participant failed an attention check, resulting in a final sample of 218 participants ( $M_{age}=43$ , 55% female, 44% male, 1% nonbinary/other). Participants read a hypothetical scenario in which they imagined experiencing difficulty covering their everyday expenses. This study was preregistered at <https://aspredicted.org/dxkt-rwhh.pdf>. The text of the scenario is below.

*Imagine that, over the past couple weeks, your household has been facing **financial difficulties**. Your regular income, including wages and checking account balance, isn't sufficient to cover **usual household expenses** such as food, rent or mortgage, car payments, medical bills, student loans, and so on.*

*Below, you'll find a list of **alternative sources of money** you might consider to cover these expenses. Please **rank these options according to your preference** by clicking and dragging them into order. Place the source you would **first use to pay your expenses** at the **top** and the one you would **only use as a last resort at the bottom**.*

Participants first ranked six options for covering their expenses, ordering them from the option they would be most likely to use to the one they would be least likely to use: taking out a bank loan, using a credit card, deferring payments, drawing from savings, selling possessions, and borrowing from friends or family (an informal loan). Participants then reported how self-conscious they would feel using each option. Negative self-conscious emotions were measured with two items: “How self-conscious would you feel using each of these options to cover a \$500 expense?” (1 = not at all to 7 = extremely) and “How embarrassed or judged would you feel if you used each of these options to cover a \$500 expense?” (1 = not at all to 7 = extremely). We averaged these items ( $r=.70, p<.001$ ) to form a measure of negative self-conscious emotions. Participants also completed an exploratory question about injunctive norms (see ResearchBox for full text). We focus on negative self-conscious emotions in the present analysis.

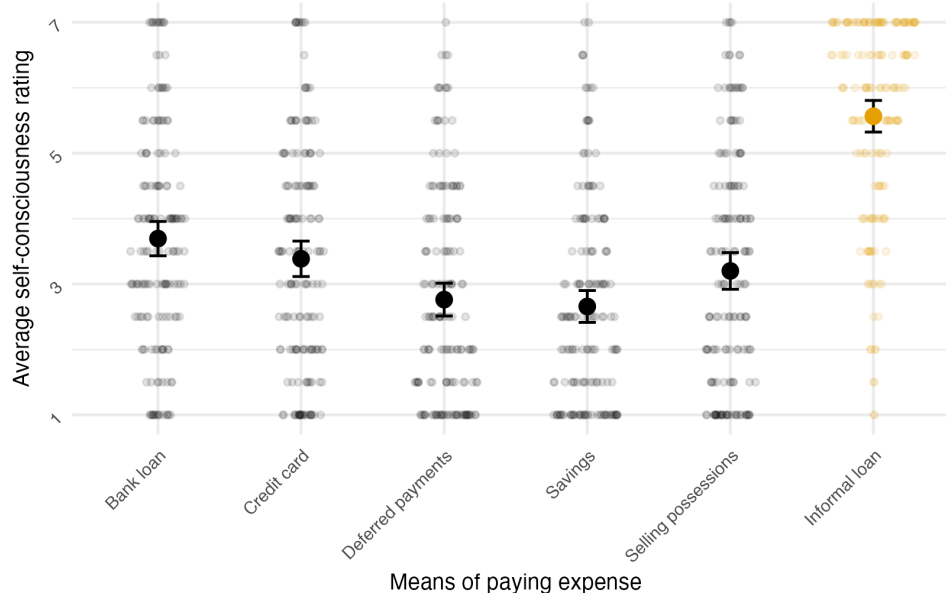
### **Results.**

Replicating Study 1a while holding the borrowing situation constant, participants reported substantially greater negative self-conscious emotions when considering informal loans than any other payment option (Figure 3). A mixed-effects linear regression predicting negative self-conscious emotions from payment option showed informal loans elicited significantly greater negative self-conscious emotions ( $M_{\text{informal}}=5.73, SD=1.34$ ) than the next-highest option,

bank loans ( $M_{\text{bank loan}}=3.87$ ,  $SD=1.73$ ,  $B=1.87$ ,  $SE=.13$ ,  $t=14.78$ ,  $p<.001$ ).<sup>2</sup> These findings provide additional support for H1a, suggesting that elevated negative self-conscious emotions arise from informal borrowing itself rather than the financial hardship circumstances in which such loans are typically sought.

**FIGURE 3:**

**SELF-CONSCIOUSNESS IS HIGHER FOR INFORMAL LOANS**



*Note.* Error bars denote 95% CI. Informal loans in gold.

**STUDY 1C: THREAT TO SOCIAL STANDING LEADS TO NEGATIVE SELF-CONSCIOUS EMOTIONS**

Study 1c replicates H1a in a new paradigm and tests H1b: whether the elevated negative self-conscious emotions associated with informal borrowing arise from the threat to the social standing entailed by revealing one's financial situation to one's social network (Sznycer 2019).

<sup>2</sup> Preferences broadly tracked these evaluations. Participants ranked informal loans relatively low among the six borrowing options ( $M=4.30$  out of 6). A paired Wilcoxon signed-rank test indicated that informal loans were ranked significantly lower than the next-lowest option, credit cards ( $M_{\text{rank}}=3.75$ ,  $V=14,786$ ,  $p=.002$ ), and lower than all options except bank loans ( $M_{\text{rank}}=4.70$ ,  $V=9,263$ ,  $p=.003$ ; Figure 3, left panel, informal loans in gold). An ordered logit revealed that negative self-conscious emotions correlated with ranking informal loans closer to the bottom ( $\text{Exp}(B)=1.68$ ,  $SE=0.096$ ,  $z=5.41$ ,  $p<.001$ ).

The processes of obtaining a formal and informal loan under financial hardship differ in three ways, each of which could plausibly contribute to negative self-conscious emotions. The first is *help-seeking*: informal borrowing requires directly asking another person for assistance, whereas formal borrowing is typically handled through an impersonal application process. The second is *scrutiny*: informal borrowing requires disclosing one's financial hardship to a specific individual, while formal loans are typically processed through institutional channels. The third is *threat to social standing*: informal borrowing requires exposing one's financial hardship to members of one's close social network, creating the possibility of reputational costs that do not arise when borrowing from relatively anonymous institutions. Study 1c experimentally manipulates these features to identify which aspects of informal borrowing drive negative self-conscious emotions. Table 3 summarizes these distinctions and their proposed psychological consequences.

## Methods

**Participants.** We recruited 525 participants on Prolific. One participant failed an attention check, resulting in a final sample of 524 (59.9% female, 35.7% male, 4% other,  $M_{\text{age}}=43$ ). The study was preregistered at <https://aspredicted.org/rs945k.pdf>.

**Procedure.** Study 1c employed a five-cell between-subjects design. As in Study 1b, participants read a scenario in which they imagined experiencing financial hardship and needing to borrow money to cover an expense. The expense amount was \$1,000 (instead of \$500 in Study 1b) to make the bank loan conditions more realistic; otherwise, the scenario closely matched that used in Study 1b (see ResearchBox for full text).

Participants were randomly assigned to evaluate one borrowing scenario. In the two informal borrowing conditions, participants considered whether they would ask for a loan from family either without a prior offer of help (*informal*) or after help had been explicitly offered

(*informal + offer*). In the three formal borrowing conditions, participants considered whether they would take out a personal loan from a bank under one of three variations. The *formal* condition asked participants to consider whether they would take out a loan from a bank, using identical wording to the *informal* condition. The *formal+explain* condition included additional text asking participants to imagine that they would need to discuss their financial situation with a bank employee, a stranger. The *formal+explain+social* condition was identical to the *formal+explain* condition, but the bank employee was described to participants as “someone you know well from your social circle.” These manipulations were designed to isolate the roles of help-seeking, scrutiny, and threat to social standing in generating negative self-conscious emotions (see Table 3).

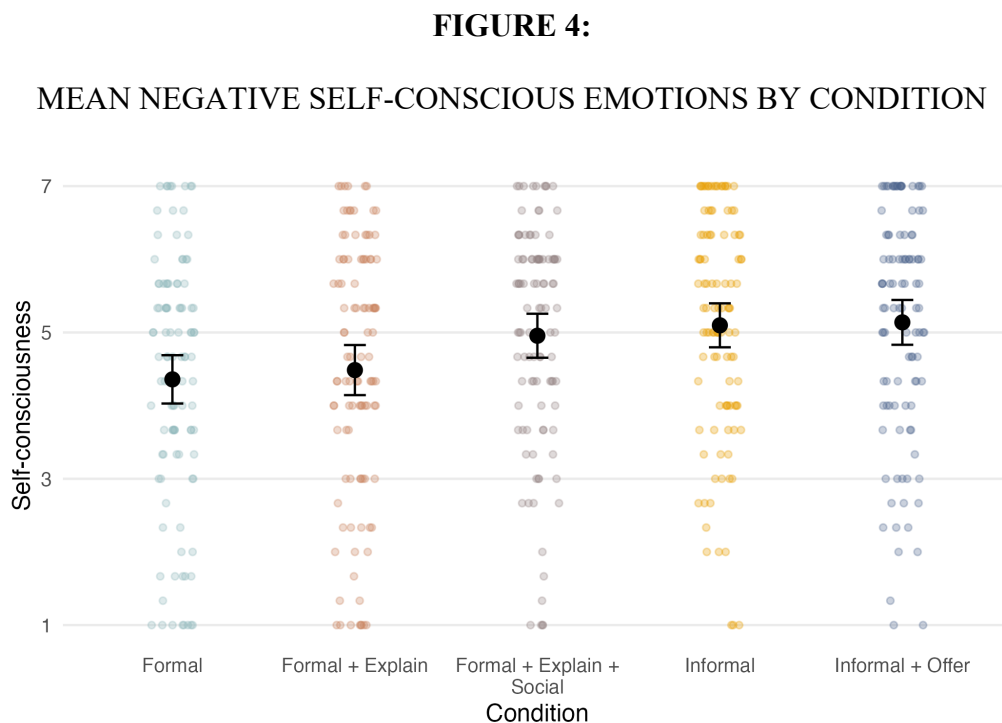
After reading the scenario, participants indicated how likely they would be to take out the loan. This item was included primarily to ensure engagement with the scenario and was not central to our hypotheses (see WA-B for results). Participants then completed three measures of negative self-conscious emotions. Two items were adapted from Study 1b with minor wording changes to fit the scenario (see ResearchBox for full wording). The third assessed concern about social evaluation: “How much would you be concerned about what other people think of you in this situation?” (1 = Not at all, 4 = Moderately, 7 = Extremely). We averaged the three items to form a composite measure of negative self-conscious emotions ( $\alpha=.91$ ). Finally, participants completed a memory check and demographic questions.

## **Results**

We conducted a linear regression predicting negative self-conscious emotions from condition. Replicating prior studies, participants in the *informal* borrowing condition reported significantly greater negative self-conscious emotions than participants in the *formal* borrowing

condition ( $M_{\text{informal}}=5.10$ ,  $SD=1.56$  vs.  $M_{\text{formal}}=4.36$ ,  $SD=1.76$ ,  $B=.74$ ,  $SE=.22$ ,  $t=3.28$ ,  $p=.001$ ).

Figure 4 plots condition means and raw observations.



*Note.* Error bars denote 95% CI. See Table 3 for key statistical tests.

The need to disclose one's financial hardship to a member of one's social network appears to account for much of the difference in negative self-conscious emotions between informal and formal borrowing (see Figure 4, *formal+explain+social* column). Introducing a social network member into an otherwise formal borrowing context (the *formal+explain+social* condition) produced levels of negative self-conscious emotions higher than those in the other *formal* condition (see Table 3, bottom two rows) and not significantly different from those observed in the informal borrowing condition.<sup>3</sup> In contrast, neither the need to ask for help (versus receiving an unsolicited offer) nor the need to explain one's situation to a stranger

<sup>3</sup> In an exploratory contrast, levels of negative self-conscious emotion in the *formal+explain+social* condition did not differ significantly from the *informal* condition ( $p=.53$ ).

significantly increased negative self-conscious emotions. These findings support H1b, suggesting that negative self-conscious emotions arise specifically from exposing financial hardship to close others, consistent with the broader social-regulatory function of such emotions (Sznycer 2019; Tracy 2007).

**TABLE 3:**

KEY HYPOTHESIS TESTS IN STUDY 1C

Difference between loan types	Psychological mechanism	Condition comparison	Beta (SE)	<i>t</i>	<i>p</i>
Need to ask for help	Help-seeking	<i>Informal vs. informal+offer</i>	-.04 (.23)	-.18	.86
Need to explain financial hardship	Scrutiny	<i>Formal vs. formal+explain</i>	-.13 (.23)	-.56	.57
Need to explain financial hardship in one's social network	Scrutiny + Threat to social standing	<i>Formal vs. formal+explain+social</i>	-.60 (.23)	-2.64	.0086
Isolating loss of social standing	Threat to social standing	<i>Formal+explain vs. formal+explain+social</i>	-.47 (.23)	-2.08	.038

**STUDY 2A: DIFFERENT THOUGHT PROCESSES BETWEEN INFORMAL LOANS AND CREDIT CARDS**

Studies 1a-1c demonstrate both correlationally and experimentally that informal borrowing elicits elevated negative self-conscious emotions (H1a) and that concerns about social standing drive this effect (H1b), while Study 1a additionally shows low levels of financial tradeoff thinking when people write about informal loans online (H2). Study 2a provides an initial test of how these emotions manifest in the borrower's cognitive process. Using a thought-listing paradigm, we examine both the salience and frequency of thoughts related to negative self-conscious emotions, replicating H1a. In addition, thought listing is well-suited to testing H2,

which concerns specifically what consumers fail to consider. We test whether participants neglect financial tradeoff thinking in informal loans relative to credit cards.

We adapted the online thought-listing paradigm from Johnson, Häubl, and Keinan (2007). Participants listed their thoughts sequentially while considering a borrowing scenario and then coded each thought as reflecting either an emotional reaction or practical aspect of the loan. In this study, we use emotional reactions as a broad proxy for negative self-conscious thoughts and practical thoughts as a proxy for financial tradeoff thinking. Studies 2b and 2c employ more specific coding schemes to distinguish these constructs more directly.

## **Methods**

**Participants.** We recruited 420 participants from Prolific. Two participants failed an attention check, resulting in a final sample of 418 participants (42% male, 56% female, 2% other,  $M_{age}=39$ ). The study was preregistered at <https://aspredicted.org/ax4zu4.pdf>.

**Procedure.** Upon entering the study, participants were introduced to a thought-listing interface and completed two practice exercises. In the first, they familiarized themselves with the interface by typing the numbers “one” through “five.” In the second, they practiced generating thoughts by considering the purchase of a convertible car and entering up to 20 thoughts.

Participants were instructed that there were no right or wrong answers, to enter one thought at a time, and to record their thoughts as quickly as possible.

Participants then completed the main task. All participants imagined struggling to cover their expenses and needing to pay a \$500 bill (the scenario closely matched those used in Studies 1b and 1c; see ResearchBox for full scenario text). Participants were randomly assigned to one of two between-subjects conditions: in the *informal loan* condition, participants were asked to consider borrowing money from family to cover the expense, while in the *credit card* condition

they were asked to consider paying for the expense with a credit card. Both conditions specified that repayment would take several months. Otherwise, the scenarios differed only in the type of borrowing described. Participants then listed up to 20 thoughts sequentially before reporting their likelihood of either borrowing money from family or using their credit card (1 = highly unlikely to 7 = highly likely).

Participants were next trained to categorize their thoughts. After reading instructions describing the coding categories, participants completed a three-item quiz to ensure understanding (see WA-A for full instructions and answers). Thoughts could be classified into four categories. Practical thoughts referred to practical aspects of borrowing (“...such as the repayment, costs, logistics, or financial consequences of the loan”). Emotional reactions included self-conscious thoughts as well as other emotional reactions to borrowing (“...any feelings you experience when thinking about the loan, whether about the financial situation (e.g., stress, worry, relief) or about yourself and others (e.g., pride, embarrassment, happiness”). To ensure comprehensive coding, participants could also indicate whether a thought concerned handling the situation without a loan (“Is the thought about how you might want to handle this situation on your own, without a loan?”; which we will refer to as thoughts about “alternatives”)<sup>4</sup> or classify the thought as “other” if it did not fit any category.

After passing the quiz, participants completed the coding task. They reviewed their previously listed thoughts one at a time (displayed in blue) and selected all applicable categories for each thought (see Figure 5).

FIGURE 5:

### **THOUGHT RATING INTERFACE**

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<sup>4</sup> In pilot testing, these types of thoughts were common, so we included them in all thought listing studies to ensure precise coding.

Here is the first thought you typed in:

[thought text]

Which topic(s) best describes what this thought was about? If about more than one, you may select all that apply.

If none of the topics apply, please only select "other."

<input type="checkbox"/>	Practical details - the details of getting, having, or paying off the loan
<input type="checkbox"/>	Emotional reactions - emotions you feel about getting, having, or paying off the loan
<input type="checkbox"/>	Handling the situation a different way - how you might handle the situation on your own, without taking out a loan
<input type="checkbox"/>	Other

*Note.* Participants viewed this interface for each thought generated during the initial task. Thoughts were presented sequentially in the order entered. The blue “[thought text]” field displayed the participant’s previously entered thought. The first two checkboxes correspond to the focal coding categories.

After classifying their thoughts, participants completed an attention check and provided demographic information.

## Results

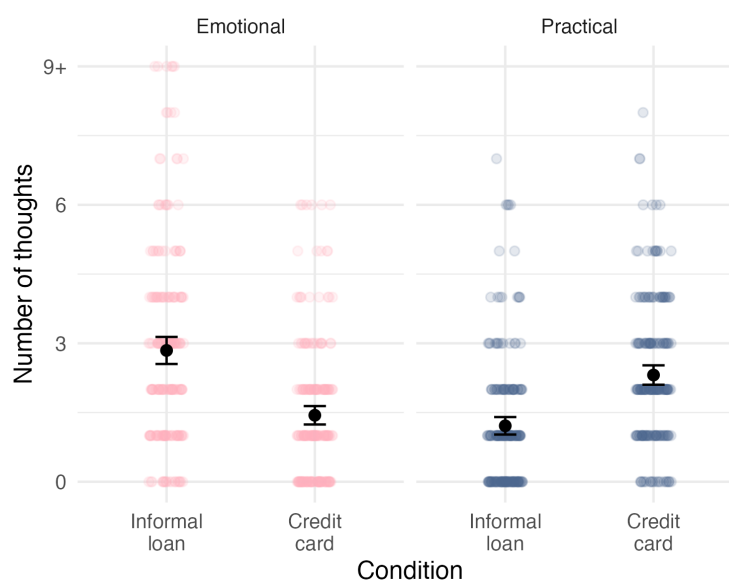
***Number of thoughts.*** Participants generated an average of 4.26 thoughts ( $SD=2.32$ ) with no significant difference in the total number of thoughts between conditions ( $p=.23$ ). We hypothesized that participants considering informal loans would generate more emotional thoughts and fewer practical thoughts than participants considering credit cards. To examine thought content, we estimated Poisson regressions predicting the number of thoughts of each type by condition. Since participants could generate different numbers of thoughts, we included the log-transformed number of thoughts each participant had as an offset. We used robust standard errors (HC2) to account for overdispersion.

Consistent with our predictions, participants considering borrowing from family generated more emotional thoughts ( $M= 2.87$ ,  $SD=2.24$ ) than participants considering using a

credit card ( $M=1.44$ ,  $SD=1.47$ ;  $\text{Exp}(B)=1.87$ ,  $z=8.91$ ,  $p<.001$ ). They also generated fewer practical thoughts ( $M_{\text{informal}}=1.21$ ,  $SD=1.38$  vs.  $M_{\text{credit card}}=2.31$ ,  $SD=1.55$ ,  $\text{Exp}(B)=-.49$ ,  $z=-9.04$ ,  $p<.001$ ; see Figure 6). Exploratory analyses showed slightly fewer thoughts about alternatives in the informal condition than in the credit card condition ( $\text{Exp}(\beta)=0.72$ ,  $z=-2.14$ ,  $p=.03$ ) and no significant difference in thoughts categorized as “other” ( $\text{Exp}(\beta)=0.86$ ,  $z=-.65$ ,  $p=.52$ ).

**FIGURE 6:**

**THOUGHT FREQUENCY BY LOAN TYPE**



*Note.* Error bars denote 95% CI.

***Attentional narrowing: salience and suppression.*** To provide initial evidence for attentional narrowing, we examined whether emotional thoughts occurred earlier in the thought sequence (salience) and whether they predicted a lower likelihood of subsequently generating practical thoughts (suppression). Because these analyses were exploratory and not preregistered, they should be interpreted with caution.

***Emotional thought salience in informal borrowing.*** We first examined which types of thoughts tended to arise earlier in the thought sequence. For each participant, we identified the

position of the first occurrence of each thought category and then calculated the average position of that first thought across participants.<sup>5</sup> Analyses were restricted to participants who generated at least one thought of the relevant type. Table 4 reports the mean position of first occurrence for each category.

Linear regressions predicting the position of first emotional versus practical thought showed that in the *credit card* condition, practical thoughts emerged earlier than emotional thoughts ( $B=-.78$ ,  $SE=.16$ ,  $t=-5.03$ ,  $p<.001$ ). In contrast, in the *informal loan* condition, emotional thoughts emerged earlier than practical thoughts ( $B=.90$ ,  $SE=.16$ ,  $t=5.58$ ,  $p<.001$ ). A Wald test confirmed that these effects differed significantly across conditions ( $\chi^2(1)=56.43$ ,  $p<.001$ ). Thus, the relative ordering of emotional and practical thoughts reversed depending on whether participants considered informal borrowing or credit cards (see Table 4, first four lines).

**TABLE 4:**

MEAN POSITION OF FIRST THOUGHT OF EACH TYPE

Thought type	Condition	N	Mean	Median	SD
Practical	Credit card	190	1.45	1	0.93
Practical	Informal	131	2.21	2	1.36
Emotional	Credit card	145	2.23	2	1.45
Emotional	Informal	187	1.31	1	0.68
Alternative	Credit card	90	2.50	2	1.43
Alternative	Informal	86	2.72	2	2.32

<sup>5</sup> To measure salience, we focused on the position of the *first* occurrence of each thought type, rather than the *average* position across all thoughts of that type. Using average position could artificially reduce apparent salience because later recurring thoughts would increase the mean position. Consider two participants. Participant A generated three emotional thoughts before generating two practical thoughts (mean emotional thought position= $(1+2+3)/3 = 2$ ). Participant B generated only two emotional thoughts followed by two practical thought (mean emotional thought position= $(1+2)/2 = 1.5$ ). If we calculated salience using the average position of each thought, Participant B would be recorded as having more salient emotional thoughts than Participant A, despite the two participants generating the thoughts equally early and Participant A generating more emotional thoughts than Participant B.

Thought type	Condition	N	Mean	Median	SD
Other	Credit card	44	3.14	3	2.25
Other	Informal	35	3.26	3	2.09

*Note.* N denotes the number of participants in each condition who generated at least one thought of the type in the left column. Summary statistics are calculated conditional on generating at least one such thought and reflect the average position for each participant of the first occurrence of each thought type in the sequence (lower values indicate earlier occurrence).

***Evidence for suppression of practical thoughts.*** Next, we examined whether earlier emotional thoughts predicted a lower likelihood of subsequent practical thoughts (this analysis was run on all participants with two thoughts or more,  $N=393$ ). To do so, we estimated a mixed-effects logistic regression at the thought level predicting whether each thought was classified as practical from the cumulative number of prior thoughts in each category, controlling for thought position in the sequence. Because cumulative emotional thoughts were positively skewed (skewness = 2.26) we log-transformed all cumulative thought-counts prior to analysis (log-transformed emotional skewness = 0.37). Across both loan conditions, a greater number of prior emotional thoughts predicted a lower likelihood that a subsequent thought would be practical ( $\text{Exp}(\beta)=.52$ ,  $z=-5.04$ ,  $p<.001$ ). Prior thoughts about alternatives ( $\text{Exp}(\beta)=1.02$ ,  $z=.15$ ,  $p=.88$ ) and other thoughts ( $\text{Exp}(\beta)=.83$ ,  $z=-.67$ ,  $p=.50$ ) were not significantly associated with subsequent practical thoughts.<sup>6</sup>

In a further exploratory analysis, greater practical thought content was associated with an increased willingness to borrow from family (see WA-B for full analysis).

## Discussion

<sup>6</sup> Results using non-log-transformed cumulative thought counts were similar. Prior emotional thoughts remained negatively associated with the likelihood of subsequent practical thoughts ( $\text{Exp}(\beta)=.83$ ,  $z=-2.27$ ,  $p=.023$ ). Prior thoughts about alternatives ( $\text{Exp}(\beta)=1.01$ ,  $z=-.082$ ,  $p=.93$ ) and other thoughts ( $\text{Exp}(\beta)=0.86$ ,  $z=-.86$ ,  $p=.39$ ) were not significant predictors.

Study 2a demonstrates that consumers think less about the practical details and more emotionally when considering informal loans compared to when considering borrowing money on a credit card, a causal replication of the results found in Study 1a. Beyond these differences in thought content, Study 2a provides initial evidence that negative self-conscious cognitions are salient for informal loans and suppress financial tradeoff thinking. Emotional thoughts arose earlier in the thought sequence for informal loans, whereas practical thoughts emerged earlier for credit cards. In addition, earlier emotional thoughts predicted a lower likelihood of subsequent practical thoughts, while earlier occurrence of other types of thoughts did not. Together, these findings suggest that the emotionally salient social concerns associated with informal borrowing may narrow attention, leading people to neglect to think about financial tradeoffs.

A limitation of Study 2a is that the coding scheme needed to remain consistent across informal and formal loans, requiring broad categories (e.g., “emotional” vs. “practical” thoughts). As a result, we could not directly examine informal borrowing-specific constructs such as negative self-conscious emotions and financial tradeoff thinking. Study 2b addresses this limitation by using a more targeted coding scheme to examine these constructs directly, providing further evidence for attentional narrowing.

### **STUDY 2B: THOUGHTS ABOUT INFORMAL LOANS**

Study 2b examines the relationship between negative self-conscious thoughts, financial tradeoff thinking, and willingness to borrow from family. Building on Study 2a, this study employs a more specific coding scheme that allows us to distinguish negative self-conscious thoughts from financial tradeoff thoughts directly. We hypothesized that 1) the attentional narrowing pattern observed in Study 2a would replicate, with negative self-conscious thoughts

associated with reduced financial tradeoff thinking (H2), and 2) reduced financial tradeoff thinking would be associated with lower willingness to borrow from family (H3).

## Methods

**Participants.** We recruited 411 United States residents fluent in English from Prolific (43% male, 57% female,  $M_{age}=38$ ). No participants failed the attention check. The study was preregistered at <https://aspredicted.org/5h8k-5bgk.pdf>.

**Procedure.** This study did not include experimental randomization and followed the general design of the *informal loan* condition in Study 2a. Like in Study 2a, participants first completed two practice exercises to familiarize themselves with the thought-listing interface. They then read a scenario in which they imagined struggling to cover their expenses and considered borrowing \$500 from a family member. They then listed their thoughts sequentially, then reported their willingness to borrow.

After reporting their willingness to borrow, participants reviewed each thought individually and categorized its content. As in Study 2a, participants were trained on the coding scheme and required to correctly classify several example thoughts before proceeding (see WA-A for full instructions). However, the coding categories in Study 2b were tailored specifically to informal borrowing. Rather than broadly coding emotional thoughts, participants identified thoughts about negative self-conscious emotions (whether the thought was about “being embarrassed or feeling judged”). Financial tradeoff thinking was coded using a “financial details” category (whether the thought was about “advantages of this type of loan such as low interest rates or no fees”). To distinguish financial tradeoff thinking from access to financial support, participants also coded thoughts about loan availability (i.e., whether the thought involved “a specific person who would help”). As in Study 2a, participants could additionally

classify thoughts as “alternatives” (handling the situation without a loan) or “other.” Finally, participants completed an attention check and reported their age and credit score. Other demographic information was provided by Prolific.

## Results<sup>7</sup>

***Distribution of Thoughts.*** To test whether participants generated more negative self-conscious thoughts than financial tradeoff thoughts, we compared the frequency of each thought type using a negative binomial regression.<sup>8</sup> The model predicted thought counts by thought type while controlling for participants’ total number of thoughts and including a random intercept for participant.

Consistent with our hypothesis, participants generated substantially more negative self-conscious thoughts than financial tradeoff thoughts: ( $M_{\text{Self-conscious}}=2.09$ ,  $SD=1.82$  vs.  $M_{\text{Financial tradeoffs}}=0.46$ ,  $SD=0.85$ ,  $\exp(B)=4.52$ ,  $z=15.59$ ,  $p<.001$ ; see Figure 7, left panel). These findings were robust across alternative specifications, including modeling thought types as proportions of total thoughts and as binary indicators of presence versus absence (see WA-B for full results and frequency tables).

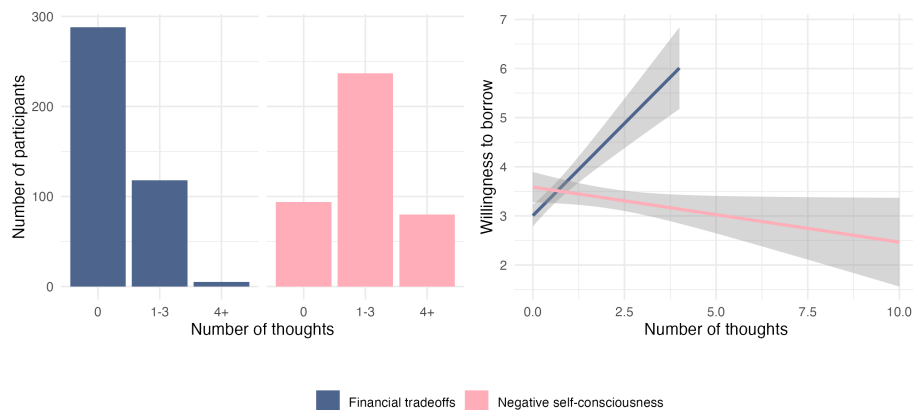
### FIGURE 7:

#### THOUGHT COUNTS AND RELATIONSHIP WITH WILLINGNESS TO BORROW

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<sup>7</sup> Though we preregistered examining both financial tradeoff thoughts and thoughts about loan availability, we only report the results for financial tradeoff thoughts here, since they are germane to our theory. Results for loan thoughts are available in WA-B.

<sup>8</sup> Using this model was a deviation from the preregistration. We did so because computing HC2 robust standard errors, which are required to correct for overdispersion in the Poisson models, is not feasible for mixed models.



*Note.* Shaded area denotes 95% confidence intervals. The left panel shows the number of participants generating each number of thoughts by thought type. In the right panel, lines terminate at the maximum number of thoughts observed for each thought type.

**Attentional narrowing: salience and suppression.** To assess attentional narrowing, we conducted analyses parallel to those in Study 2a, examining whether negative self-conscious thoughts occurred earlier in the thought sequence and were associated with fewer subsequent financial tradeoff thoughts. These analyses were exploratory and were restricted to participants who generated at least two thoughts ( $N=387$ ).

**Negative self-conscious thought salience.** We first examine whether negative self-conscious thoughts tended to arise earlier than other types of thoughts. Following Study 2a, we estimate a linear mixed-effects regression predicting thought position from thought type, including a random intercept for each participant. Analyses focused on the first occurrence of each thought type for each participant. Among participants who generated at least one negative self-conscious thought ( $N=317$ ), such thoughts emerged earliest in the sequence, at an average position of 1.52 ( $SD=1.07$ ). Financial tradeoff thoughts occurred significantly later ( $M=2.54$ ,  $SD=1.66$ ,  $B=1.02$ ,  $SE=.16$ ,  $t=6.53$ ,  $p<.001$ ). See WA-B for summary statistics for all thought categories.

**Evidence for suppression of financial tradeoff thoughts.** We next examined whether earlier negative self-conscious thoughts predicted a lower likelihood of subsequent financial

tradeoff thoughts, replicating the attentional narrowing pattern observed in Study 2a. To do so, we estimated mixed-effects logistic regressions at the thought level, including random intercepts for participants, predicting whether each thought concerned financial tradeoffs from the cumulative number of prior thoughts in other categories and controlling for the thought's position in the sequence. Consistent with Study 2a, the likelihood that a thought concerned financial tradeoffs decreased as the log-transformed number of prior negative self-conscious thoughts increased ( $\text{Exp}(\beta)=.44$ ,  $z=-2.64$ ,  $p=.008$ ).<sup>9</sup>

***Relationship between thought content and informal borrowing preference.*** Exploratory regressions examined the relationship between thought content and willingness to borrow from family while controlling for participants' total number of thoughts (see Table 5, columns 1-2). Negative self-conscious thoughts were negatively associated with willingness to borrow ( $B=-.36$ ,  $SE=.13$ ,  $t=-2.38$ ,  $p=.005$ ), whereas financial tradeoff thinking was positively associated with willingness to borrow ( $B=0.65$ ,  $SE=.10$ ,  $t=6.46$ ,  $p<.001$ ).

We next estimated a model including both thought types simultaneously in the model (see Table 5, column 3). In this specification, financial tradeoff thinking remained a significant predictor of willingness to borrow ( $B=0.61$ ,  $SE=.11$ ,  $t=5.82$ ,  $p<.001$ ), whereas the relationship between negative self-conscious thoughts and willingness to borrow was no longer significant ( $B=-0.12$ ,  $SE=.13$ ,  $t=-0.95$ ,  $p=.34$ ). This pattern is consistent with the possibility that negative self-conscious thoughts influence borrowing preferences, at least in part, through their association with reduced financial tradeoff thinking.

#### TABLE 5:

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<sup>9</sup> Results using non-log-transformed cumulative thought counts were similar. Prior negative self-conscious thoughts remained negatively associated with the likelihood of subsequent financial tradeoff thinking ( $\text{Exp}(\beta)=.64$ ,  $z=-2.90$ ,  $p=.004$ ).

RELATIONSHIP BETWEEN SELF-CONSCIOUS THOUGHTS, FINANCIAL TRADEOFF  
THOUGHTS, AND BORROWING PREFERENCES

	<i>Dependent variable:</i>		
	Likelihood of borrowing (1-7)		
	(1)	(2)	(3)
Negative self-conscious thoughts	-0.358** (0.126)		-0.122 (0.128)
Financial tradeoff thoughts		0.645*** (0.100)	0.614*** (0.105)
Number of thoughts	0.117* (0.056)	-0.024 (0.045)	0.010 (0.057)
Constant	2.843*** (0.265)	3.458*** (0.217)	3.310*** (0.268)
Observations	411	411	411
R <sup>2</sup>	0.020	0.093	0.095
Adjusted R <sup>2</sup>	0.015	0.089	0.089

*Note:*

\*p<.05 \*\*p<.01 \*\*\*p<0.001

Thought counts are standardized to have mean 0 and  
standard deviation 1

Finally, we conducted robustness analyses using alternative specifications, including (1) the proportion of thoughts in each category (standardized to have mean 0 and standard deviation 1) and (2) binary indicators reflecting the presence or absence of each thought type. The results were similar across specifications (see WA-B).

### Discussion

Study 2b provides additional evidence for the attentional narrowing role of negative self-conscious thoughts in informal borrowing decisions. These thoughts tended to arise early in the thought sequence and were associated with reduced financial tradeoff thinking. In contrast, financial tradeoff thoughts were infrequent (only 30% of participants had one or more thought of this kind) and strongly associated with willingness to borrow. However, these findings are

correlational and do not establish causal relationships between negative self-conscious thoughts, reduced financial tradeoff thinking, and borrowing preferences.

## STUDY 2C: THE IMPACT OF INITIAL THOUGHTS ON SUBSEQUENT COGNITION

The attentional narrowing patterns observed in studies 2a and 2b raise a potential third-variable concern: perhaps participants prone to negative self-conscious thoughts are also less likely to engage in financial tradeoff thinking for unrelated reasons. Study 2c addresses this alternative explanation by providing a causal test of H2 (attentional narrowing) and H3 (its consequences for borrowing preferences). We manipulated the content of participants' first thought, directing them to focus either on negative self-conscious emotions or on financial tradeoff thinking. We hypothesized that 1) inducing negative self-conscious thoughts would reduce financial tradeoff thinking, and 2) inducing financial tradeoff thinking would reduce negative self-conscious thoughts.

### Methods

**Participants.** We recruited 630 participants from Prolific. Five participants failed an attention check, resulting in a final sample of 625 participants (40% male, 55% female, 5% other;  $M_{\text{age}}=37$ ). The study was preregistered at <https://aspredicted.org/tg643m.pdf>.

**Procedure.** The study followed the general design of Study 2b with one key modification. After reading the borrowing scenario, participants were randomly assigned to one of three between-subjects conditions designed to manipulate the content of their initial thought. In the *negative self-conscious emotion* and the *financial tradeoffs* conditions, participants received prompts directing the content of their first thought. In the *control* condition, participants

generated thoughts without any additional prompt, as in prior studies. In the *negative self-conscious* condition, the prompt read:

*“Please type your first thought about borrowing from family in the box below. This first thought should be about something you are embarrassed or self-conscious about when borrowing from family versus using a different type of loan (such as holding a balance on a credit card or borrowing money from a bank). Consider if you might feel embarrassed or self-conscious borrowing money from family compared to using these other kinds of loans. Once you have finished typing, please ensure that this thought is about embarrassment or self-consciousness you may feel borrowing from family. Then you may hit the "enter/return" key to submit your thought. After entering this first thought about something you are embarrassed or self-conscious about when borrowing from family (versus using a different type of loan), you may enter any other thoughts you want about borrowing from family.”*

In the *financial tradeoffs* condition, the prompt read:

*“Please type your first thought about borrowing from family in the box below. This first thought should be about the financial details of a loan from family versus a different type of loan (such as holding a balance on a credit card or borrowing money from a bank). Consider the different interest rates, fees, and other financial details of these other kinds of loans versus loans from family. Once you have finished typing, please ensure that this thought is about the financial aspects of borrowing from family. Then you may hit the "enter/return" key to submit your thought. After entering this first thought about the financial details and tradeoffs of a loan from family (versus using a different type of loan), you may enter any other thoughts you want about borrowing from family.”*

After entering the first thought, the interface and instructions were identical across all conditions.

Thus, the only difference between conditions was the instructions participants had when entering their first thought.

## **Results**

***Manipulation effectiveness.*** We used binary logistic regressions to examine whether the condition influenced the content of participants’ first thought. The *negative self-conscious emotion* condition substantially increased the likelihood of a negative self-conscious first thought

( $M_{\text{self-conscious}}=87.4\%$  vs  $M_{\text{control}}=57.0\%$ ,  $\text{Exp}(B)=5.24$ ,  $z=6.54$ ,  $p<.001$ ), whereas the *financial tradeoffs* condition reduced it ( $M_{\text{financial}}=26.3\%$ ,  $\text{Exp}(B)=.27$ ,  $z=-6.26$ ,  $p<.001$ ).

A parallel model predicting whether the first thought concerned financial tradeoffs showed the opposite pattern. The *financial tradeoffs* condition substantially increased the likelihood of a financial tradeoff thought ( $M_{\text{financial}}=55.3\%$  vs  $M_{\text{control}}=9.3\%$ ,  $\text{Exp}(B)=12.16$ ,  $z=9.00$ ,  $p<.001$ ), whereas the negative self-conscious emotion condition slightly reduced it from an already low baseline ( $M_{\text{self-conscious}}=4.3\%$ ,  $\text{Exp}(B)=.44$ ,  $z=-1.94$ ,  $p=.052$ ).

Having successfully manipulated the salience of negative self-conscious thoughts and financial tradeoff thinking, we next examined how these initial thoughts influenced subsequent thought generation. Sixty-six participants generated only one thought and were therefore excluded from subsequent analyses ( $N=559$ ). The proportion of participants generating only one thought did not differ significantly between conditions ( $M_{\text{control}}=9.8\%$ ,  $M_{\text{financial}}=10.8\%$ ,  $M_{\text{self-conscious}}=11.1\%$ ,  $\chi^2(2)=.22$ ,  $p=.89$ ).

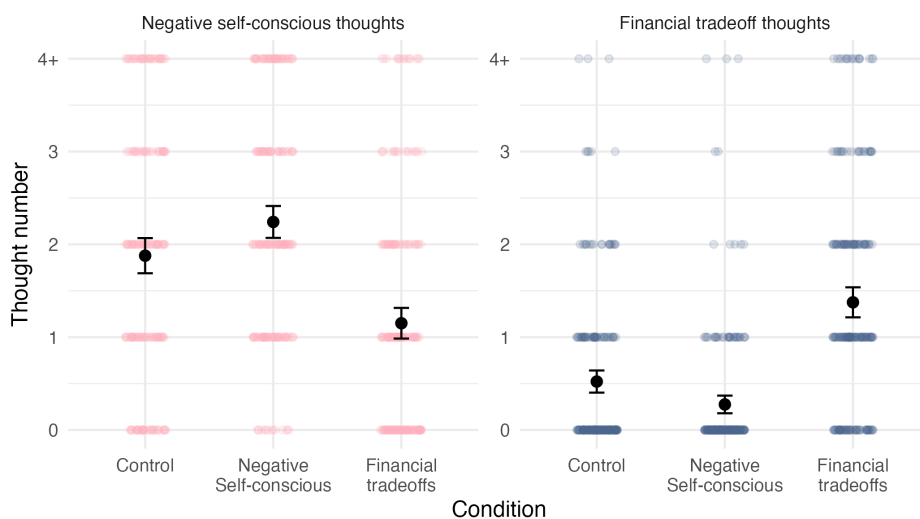
***Attentional narrowing: causal evidence for suppression of financial tradeoff thoughts.***

To assess attentional narrowing due to negative self-conscious emotions, we tested whether participants in the *negative self-conscious emotions* condition generated fewer subsequent financial tradeoff thoughts. A logistic regression predicting the effect of condition on the likelihood of generating at least one financial tradeoff thought showed that participants in the *negative self-conscious emotions* condition were significantly less likely than participants in the control condition to generate such thoughts at all ( $M_{\text{control}}=33.0\%$ , vs.  $M_{\text{self-conscious}}=17.4\%$ ,  $\text{Exp}(B)=0.43$ ,  $z=-3.30$ ,  $p<.001$ ). This pattern was consistent across alternative specifications: A Poisson regression predicting the number of financial tradeoff thoughts (controlling for offset total thoughts) revealed a similar effect ( $M_{\text{control}}=0.49$ ,  $SD=0.85$  vs.  $M_{\text{self-conscious}}=0.29$ ,  $SD=0.87$ ,

Exp(B)=0.64,  $z=-1.77$ ,  $p=.077$ ; see Figure 8), as did a linear regression predicting the proportion of financial tradeoff thoughts ( $M_{\text{control}}=.10$ ,  $SD=.19$  vs.  $M_{\text{self-conscious}}=.06$ ,  $SD=.17$ ,  $B=-0.046$ ,  $SE=0.023$ ,  $t=-2.01$ ,  $p=.045$ ).

**FIGURE 8:**

**EFFECT OF INITIAL THOUGHT MANIPULATION ON THOUGHTS 2+**

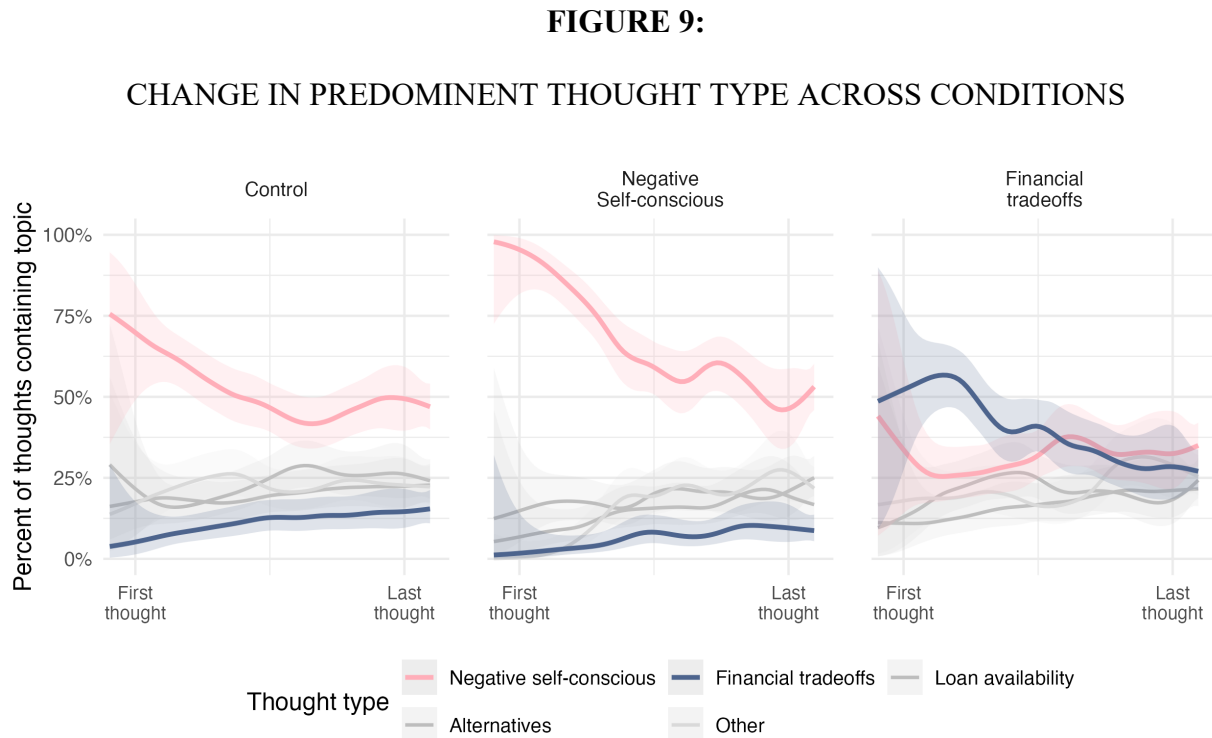


*Note.* Error bars denote 95% confidence intervals. Analyses are restricted to participants who had two thoughts or more.

***Causal evidence for neglect of financial tradeoff thinking.*** In contrast, prompting participants in the *financial tradeoffs* condition to think about the financial details of borrowing led to significantly greater financial tradeoff thinking than in the control condition (see Figure 9: Count:  $M_{\text{financial}}=.97$ ,  $SD=1.16$ , vs.  $M_{\text{control}}=.49$ ,  $SD=.85$ ,  $\exp(B)=2.36$ ,  $z=5.73$ ,  $p<.001$ ; Proportion:  $M_{\text{financial}}=.26$ ,  $SD=.29$ , vs.  $M_{\text{control}}=.10$ ,  $SD=.19$ ,  $B=.15$ ,  $SE=.023$ ,  $t=6.50$ ,  $p<.001$ ; 1 or more thought:  $M_{\text{financial}}=58\%$ , vs.  $M_{\text{control}}=33\%$ ,  $\exp(B)=3.17$ ,  $z=5.22$ ,  $p<.001$ ).

Overall, it appears that when negative self-conscious thoughts arise early, they persist throughout the cognitive process, crowding out thoughts about financial tradeoffs (see Figure 9, left panel). This process, observed in the control condition and prior studies, is exacerbated in the *negative self-conscious* condition (see Figure 9, middle panel) and interrupted in the *financial*

*tradeoffs* condition (see Figure 9, right panel). See WA-B for statistical tests showing the increase in subsequent negative self-conscious cognitions in the *negative self-conscious* condition.



*Note.* The x-axis represents the position of each thought in the sequence, scaled by the total number of thoughts generated by each participant. Lines fit using a GAM. This figure is limited to participants who had two thoughts or more.

***Impact of initial thoughts on preferences.*** A linear regression predicting willingness to borrow from condition, controlling for total number of thoughts, showed that manipulating participants' initial thought changed their willingness to borrow ( $M_{\text{self-conscious}}=3.64$ ,  $SD=2.15$  vs.  $M_{\text{financial}}=4.56$ ,  $SD=2.11$ ,  $B=.92$ ,  $SE=.22$ ,  $t=4.18$ ,  $p<.001$ ). Relative to the *control* condition, willingness to borrow was significantly higher in the *financial tradeoffs* condition ( $M_{\text{control}}=4.03$ ,  $SD=2.13$ ,  $B=0.54$ ,  $t=2.43$ ,  $p=.015$ ) and marginally lower in the *negative self-conscious emotion* condition ( $B=-.38$ ,  $SE=.22$ ,  $t=-1.73$ ,  $p=.08$ ).

## Discussion

Study 2c provides causal evidence for attentional narrowing: initially salient negative self-conscious thoughts reduced subsequent financial tradeoff thinking. The manipulations also influenced willingness to borrow from family. Together, these findings suggest that the negative associations between negative self-conscious emotions, financial tradeoff thinking, and borrowing preferences observed in prior studies reflect a causal process in which salient negative self-conscious thoughts suppress consideration of financial advantages of informal borrowing, leading to a diminished desire to ask. Study 3 builds on these findings by showing that consumers may neglect to consider financial tradeoffs when considering informal loans relative to other types of loans.

### STUDY 3: NEGLECT OF FINANCIAL TRADEOFFS IN JOINT CONSIDERATION

Prior studies demonstrating neglect of financial tradeoff thinking examined informal loans largely in isolation. Study 3 extends these findings and tests H3 by testing whether consumers similarly neglect financial tradeoffs when evaluating multiple borrowing options simultaneously. This study had participants rank their likelihood of using five different loan options, estimate the interest rates associated with each, then rank them again. This design provides a more direct test of whether consumers neglect financial tradeoffs when comparing informal borrowing to other options.

***Participants.*** We recruited 151 United States residents fluent in English from Prolific. Three participants failed an attention check, resulting in a final sample of 148 participants (33% male, 67% female,  $M_{age}=41$ ). The study was preregistered at <https://aspredicted.org/6sdq-qcfm.pdf>.

**Procedure.** All participants completed the same sequence of tasks; there was no experimental randomization. Participants first read the same borrowing scenario used in prior studies and then ranked the order in which they would use five loan options for covering a \$500 expense: an informal loan, a bank loan, a credit card, a credit union loan, and a payday loan. This ranking procedure closely followed study 1b.

After providing their initial rankings, participants estimated the annual interest rates associated with each loan type. Participants then ranked the five options again, this time with the estimated interest rates displayed alongside each option. Finally, participants completed exploratory measures assessing descriptive and injunctive norms for each loan type; these measures are not analyzed further.

**Results.** In their initial rankings, participants frequently preferred at least one interest-bearing formal loan over an informal loan, assigning informal loans an average rank of 2.47 (out of 5).

To test whether making financial tradeoffs more salient influenced preferences, we estimated an ordered logistic regression predicting the informal loan rankings as a function of timing (before vs. after estimating interest rates), including participant fixed effects. After estimating interest rates, participants ranked informal loans significantly more favorably (i.e., assigned them a rank closer to 1) ( $M=2.08$ ,  $SD=1.60$ ) than they did initially ( $M=2.47$ ,  $SD=1.53$ ,  $\text{Exp}(B)=0.087$ ,  $z=-5.92$ ,  $p<.001$ , see Table 6).

#### **TABLE 6:**

#### **RANKS AND ESTIMATED INTEREST RATES BY LOAN TYPE**

Loan Type	Mean rank (Before) (SD)	Mean rank (After) (SD)	Geo mean estimated interest rate (SD)
Informal	2.47 (1.60)	2.08 (1.53)	1.5 (11.8)
Bank (personal loan)	2.95 (1.12)	2.82 (1.06)	11.9 (10.0)
Credit union	2.84 (1.16)	2.74 (1.12)	10.2 (10.4)
Credit card	2.72 (1.23)	3.22 (1.22)	18.3 (12.1)
Payday	4.01 (1.39)	4.15 (1.24)	26.2 (184.7)

We next conducted an exploratory ordered logistic regression examining whether the relationship between participants' estimated interest rates (log-transformed)<sup>10</sup> and loan rankings became stronger after interest rates were made salient. The model included participant fixed effects. The results revealed a significant interaction between estimated interest rates and ranking stage (before vs. after estimating interest rates). Although estimated interest rates were already strongly associated with rankings in the initial evaluation ( $\text{Exp}(B)=2.02$ ,  $t=11.17$ ,  $p<.001$ ), this relationship became significantly stronger after participants explicitly considered interest rates (interest rate  $\times$  stage interaction:  $\text{Exp}(B)=1.33$ ,  $t=3.46$ ,  $p<.001$ ).

## Discussion

Study 3 provides converging evidence for H2 and H3 by showing that some consumers neglect to consider financial information even when directly comparing informal loans to other borrowing options. Making interest rates salient increased the attractiveness of informal loans, suggesting that these financial tradeoffs are not fully incorporated into initial evaluations. Taken with Study 2c, these findings provide additional evidence that the neglect of financial tradeoff

<sup>10</sup> We added one to each interest rate prior to log transformation so that a transformed value of 0 corresponded to a 0% interest rate.

thinking can causally influence informal borrowing preferences and lead consumers toward more costly borrowing options.

#### **STUDY 4: NEGATIVE SELF-CONSCIOUS EMOTIONS AND LENDER EVALUATIONS**

Thus far, we have focused on how negative self-conscious emotions influence borrowers' cognition and reduce willingness to seek informal loans. However, Study 1c suggests that these emotions play an important interpersonal function. Prior work shows that expressions of negative self-conscious emotions signal trustworthiness and positive moral character to observers (Stearns and Parrott 2012). Thus, expression of negative self-conscious emotions may also increase lenders' willingness to give to borrowers, even as feeling such emotions diminishes borrowers' propensity to seek help.

Study 4 (along with Study S3, a replication, see WA-C) examines this interpersonal implication of negative self-conscious emotions. The study proceeded in two phases. First, to generate stimuli, we recruited participants with real household expenses that they could not cover themselves to write requests to family members for an informal loan. Next, a separate set of participants viewed an anonymized subset of these messages. Participants imagined that the messages came from one of their family members and rated a) the negative self-conscious emotions expressed in the message, b) their willingness to help the family member, and c) the borrower's character.

#### **Method**

***Stimuli generation.*** We recruited 401 participants from Prolific who reported having a real or upcoming expense or a debt of at least \$500 that they could not cover themselves.

Participants were asked to imagine requesting financial help from a family member and to write a message asking for assistance with their expense or debt. They were instructed to write as if they were asking their family member (by email, conversation, or text).

We then used AI (gpt-5.4-mini) to code the extent to which each message expressed negative self-conscious emotions (using a similar prompt as Study 1a), as well as guilt specifically and apologetic tone, on scales from 1 (not at all) – 7 (a great deal) (see WA-B for prompts, summary statistics, and human rater agreement).

The main study used 85 of these messages as stimuli. To maximize variation in expressed negative self-conscious emotions, we selected all messages receiving either very low AI-measured guilt scores (guilt = 1) or moderate-to-high guilt scores (guilt  $\geq$  4), yielding 102 messages.<sup>11</sup> We then excluded messages that were too vague to interpret (two messages), contained additional commentary unrelated to the borrowing request (eight messages), included sensitive information (four messages), or contained highly specific personal details (three messages). Finally, we edited the remaining messages by removing greetings, names, and sign-offs, and standardizing all requested amounts to \$1,500 (the median loan size in the original messages). These edits reduced noise and minimized confounds between expressed negative self-conscious emotions and loan size.

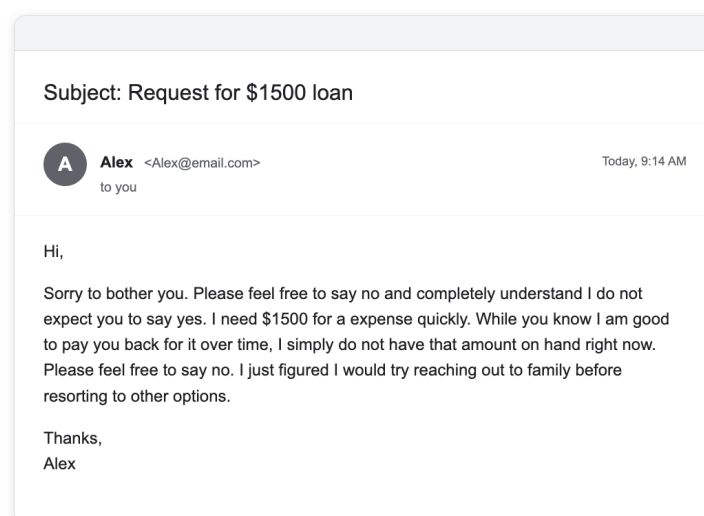
**Main study procedure.** This part of the study was preregistered at <https://aspredicted.org/m9dj7t.pdf>. We recruited 802 participants from Prolific, ensuring no participants who generated stimuli were included. Ten participants failed an attention check, resulting in a final sample of 792 participants (41% male, 57% female, 2% other,  $M_{\text{age}}=38.4$ ).

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<sup>11</sup> We used guilt ratings for stimulus selection because guilt is closely tied to relationship repair, making it especially relevant to informal borrowing requests. In practice, the guilt rating of a message correlated extremely strongly with the AI-rated negative self-consciousness ( $r=.87$ ,  $t=15.71$ ,  $p<.001$ ) and apologetic tone ( $r=.85$ ,  $t=14.53$ ,  $p<.001$ ).

Upon entering the study, participants wrote the first name of an adult family member who might plausibly experience difficulty paying their expenses. Participants who could not identify such a person were routed out of the study. Participants then imagined receiving an email from this family member requesting a \$1,500 loan. Each participant viewed one randomly selected message (see Figure 10 for an example).

**FIGURE 10:**  
STUDY 4 HELP EMAIL INTERFACE AND EXAMPLE



*Note.* The message viewed by each participant was selected randomly. The sender's name (in this example "Alex") was the name of the family member entered by the participant.

After reading the message, participants indicated how likely they would be to lend money to the family member to help cover their expenses (1 = Highly unlikely, 7 = Highly likely). Participants then completed two blocks of questions, presented in random order. In one block, they rated the extent to which the borrower appeared self-conscious, guilty, apologetic, focused on financial details, and focused on repayment (all measured on 1-7 scales). In the other block, participants rated how well seven adjectives described the borrower: ethical, selfish, immoral, warm, kind, entitled, and humble (1 = Does not describe the person at all, 7 = Describes the

person very well). Finally, participants completed the same attention check used in previous studies and provided demographic information.

## Results

***Relationship between participant-rated negative self-conscious emotions and willingness to lend.*** We hypothesized that greater expressions of guilt, apologetic tone, and negative self-conscious emotions in the borrowing messages would be associated with greater willingness to lend money. Following the preregistration, we estimated three mixed-effects linear regressions predicting willingness to lend from participant-rated negative self-conscious emotions, guilt, and apologetic tone, respectively, including a random intercept for message. Consistent with our predictions, all three measures were positively associated with willingness to lend (see Table 7, columns 1-3).

**TABLE 7:**  
CORRELATION BETWEEN NEGATIVE SELF-CONSCIOUS EXPRESSION AND  
WILLINGNESS TO LEND

	<b>Study 4: Models predicting willingness to lend</b>					
	<i>Dependent variable:</i>					
	Willingness to lend					
	(1)	(2)	(3)	(4)	(5)	(6)
Participant-rated negative self-conscious emotions	0.452*** (0.040)					
Participant-rated guilt		0.276*** (0.044)				
Participant-rated apologetic tone			0.409*** (0.039)			
AI-rated negative self-conscious emotions				0.192*** (0.052)		
AI-rated guilt					0.142*** (0.043)	

AI-rated apologetic tone						0.146*** (0.039)
Constant	2.407*** (0.158)	3.181*** (0.153)	2.650*** (0.149)	3.516*** (0.156)	3.589*** (0.151)	3.530*** (0.150)
Observations	792	792	792	792	792	792

*Note:* \*p<.05 \*\*p<.01 \*\*\*p<.001  
Models are mixed-effects models with random intercepts for message.

*Note.* All models are mixed-effects models with random intercepts for message.

***Effect of AI-rated negative self-conscious emotions on willingness to lend.*** The prior analysis partially reflects participants' preexisting relationships with the family members they identified. To more directly isolate the effect of the messages themselves, we conducted an exploratory, non-preregistered analysis, using AI-rated measures of negative self-conscious emotions, guilt, and apologetic tone. Because each participant was randomly assigned a message, the resulting relationships represent causal effects of the messages. The results replicated: messages rated by the AI as expressing greater negative self-conscious emotions were associated with greater willingness to lend (see Table 7, columns 4-6). There was high concordance between the AI and human ratings of the messages ( $r$ 's  $\geq .72$ ,  $p$ 's  $<.001$ , see WA-B).

***Effect of negative self-conscious emotions on character evaluations.*** We also estimated parallel regressions predicting character evaluations from expressions of negative self-conscious emotions. Replicating prior work, across both participant-rated and AI-rated measures, greater expressions of guilt, apologetic tone, and negative self-conscious emotions were significantly associated with more positive character evaluations (e.g., warmth, kindness, humility) and less negative evaluations (e.g., selfishness, entitlement, immorality). See WA-B for full results.

## Discussion

The findings of Study 4 highlight the interpersonal function of negative self-conscious emotions in informal borrowing. Negative self-conscious emotions, along with inhibiting

borrowers from considering their own financial interests, can increase lenders' willingness to provide support when expressed. In a supplemental study (study S3, see WA-C), we replicate these findings using a less naturalistic but more tightly controlled experimental design.

## **GENERAL DISCUSSION**

Across eight main and three supplemental studies, we document how self-conscious cognition suppresses financial tradeoff thinking in informal borrowing decisions. Although informal loans often offer favorable financial terms relative to other options, emotionally salient concerns about social standing narrow borrowers' attention and reduce consideration of these financial tradeoffs. At the same time, these same emotions may help borrowers preserve valued relationships and increase lenders' willingness to provide support. Together, these findings reveal a tension between the social and financial dimensions of informal borrowing: the psychological processes that help consumers navigate delicate social situations can interfere with financially advantageous borrowing decisions.

### **Theoretical Contributions**

We identify a psychological process underlying decisions that include social resources and financial resources. Specifically, social concerns disrupt financial thinking. In this way, we build on prior work examining how consumers think about different types of resources (Bourdieu 1986; Okada and Hoch 2004; Shaddy and Shah 2018), showing that, when social and financial concerns occur jointly in informal borrowing, consumers do not simply weigh them up before coming to a choice. Instead, the thought process that helps consumers navigate social concerns actively suppresses financial considerations. More broadly, our findings suggest that a

potential social threat can influence the information people attend to and consider during financial-decision making.

The dual role of negative self-conscious emotions – inhibiting financial tradeoff thinking while improving lender evaluations—also provides a psychological foundation for economic theories of informal lending, which seek to explain why lenders extend credit at below-market rates (Ayyagari et al. 2010; Demirguc-Kunt et al. 2018; Karaivanov and Kessler 2018; Lee and Persson 2016, 2024). These models emphasize other-regarding preferences: lenders offer favorable terms because they trust that borrowers who value the relationship will repay. What remains underspecified is how lenders infer that borrowers possess these preferences. Our findings suggest that expressions of guilt, shame, or embarrassment may serve as proximal signals of relational regard. Such expressions may indicate that borrowers are attentive to how their actions may affect lenders (such as by imposing on them) and care about what the lender feels. These self-conscious emotions, in other words, help consumers communicate the other-regarding preferences necessary for the informal marketplace to function. Moreover, the fact that negative self-conscious emotions suppress financial tradeoff thinking may strengthen this signal. Because attentional narrowing reduces consideration of financial advantages, self-conscious borrowers may indeed be less likely to view lenders instrumentally or as a means to an end. This constraint on cognition may make negative self-conscious emotions a credible and persuasive signal of relational concern.

Viewed in this light, our findings help link perspectives on informal borrowing in economics to those in consumer behavior. Economic models emphasize how other-regarding preferences enable access to capital at favorable terms, using valued relationships as a form of “collateral” (Karaivanov and Kessler 2018; Lee and Persson 2016, 2024). Consumer behavior

research, in contrast, has emphasized interpersonal conflict and relational strain associated with borrowing and lending among close others (Dezsó and Loewenstein 2012). Our findings suggest that negative self-conscious emotions may help sustain relationships in informal exchange through two pathways: by signaling positive qualities to lenders while preventing borrowers from asking for such loans unless they truly need them. Thus, negative self-conscious emotions may ensure borrowers have access to advantageous informal loans both by signaling to lenders and by ensuring that they do not overdraw on social resources.

Finally, our findings underscore the importance of considering social resources in consumer financial decision-making more broadly. Prior research has largely examined financial decisions as involving tradeoffs between financial and temporal resources (Beshears et al. 2018; Hershfield et al. 2015; Sussman, Hershfield, and Netzer 2023; Sussman and O'Brien 2016), often treating social factors primarily as influences on financial decisions rather than resources entailing tradeoffs in their own right. Our research highlights how many important financial decisions entail social considerations that can influence cognition and decision making.

### **Practical Implications**

Negative self-conscious emotions, through their impact on the borrower's thought process, may create inefficiencies in the market for informal loans given the widespread availability of formal borrowing alternatives. By narrowing attention away from financial tradeoffs, negative self-conscious emotions may lead consumers to pursue more costly formal borrowing options. At the same time, the signaling role of these emotions implies that lenders are often most willing to help precisely when borrowers are less willing to ask. In settings without accessible formal alternatives, borrowers and lenders may resolve this tension through conversation, with negative self-conscious emotions signaling borrower trustworthiness.

However, given the widespread availability of more costly but less socially risky formal loans, consumers may avoid difficult interpersonal conversations and instead pay a premium to borrow formally, leaving mutually beneficial informal arrangements unrealized.

Firms that facilitate informal borrowing may help reduce these inefficiencies. Platforms such as Namma (<https://namma.co/>) and Zirtue (<https://www.zirtue.com/>) provide services such as drafting agreements, structuring loan terms, and managing repayments. Our findings suggest that these firms could improve outcomes by tailoring messaging to each side of the informal loan market. Communications directed at borrowers could highlight the financial tradeoffs between informal loans and formal alternatives, which borrowers may otherwise neglect. Communications directed at lenders could emphasize the borrower's guilt, embarrassment, or discomfort asking for help, allowing borrowers to signal relational sensitivity and concern for the relationship. A lender-facing message could, for example, highlight that a borrower may feel uncomfortable or embarrassed asking for help and may not be fully considering the financial advantages of doing so.

### **Limitations and Future Directions**

This research has several limitations that suggest directions for future work. First, most of our studies examine isolated, hypothetical scenarios using Prolific participants outside of their broader social context. This approach allows us to identify how consumers think about borrowing and lending with a high degree of experimental control, but it abstracts away from the dynamic nature of real-world interactions. Informal borrowing in the real world may involve back-and-forth communication, during which negative self-conscious emotions and the salience of financial tradeoffs may fluctuate as borrowers and lenders interact. Future research could

examine these dynamics more directly, exploring how cognition evolves across interactions as borrowers and lenders ultimately reach, or fail to reach, agreement.

A related extension would examine how third-party platforms that facilitate informal borrowing influence the processes we identify. Such platforms may provide alternative signals of responsibility and trustworthiness that reduce reliance on self-consciousness as cues, potentially lowering the reputational costs of borrowing. At the same time, they may increase the salience of financial tradeoffs, thereby changing how borrowers and lenders evaluate informal loans.

Second, our analysis focused primarily on main effects in order to establish the core psychological process, but there is likely substantial heterogeneity in cognition (Krefeld-Schwalb, Sugerman, and Johnson 2024). For example, individuals high in psychological entitlement (Campbell et al. 2004) may feel fewer negative self-conscious emotions, whereas those high in self-monitoring may experience more (Gangestad and Snyder 2000). Cultural context is also likely to matter. In more individualist cultures such as the United States (Triandis 2018), borrowing from others may elicit stronger negative self-conscious emotions than in more interdependent cultures, where resources are viewed as shared (Singelis 1994). Social expectations and attendant emotional reactions may also vary by age and by the purpose of borrowing. For instance, borrowing for a home purchase may elicit less self-consciousness than borrowing to cover financial hardship.

Finally, we do not disentangle the distinct effects of specific negative self-conscious emotions for borrowers and lenders. Negative self-conscious emotions include guilt, shame, and embarrassment (Sznycer 2019), each of which may have distinct behavioral consequences. For example, shame tends to produce withdrawal (Gladstone et al. 2021), whereas guilt often motivates reparative behavior (Graton and Ric 2017). Future research could examine how these

specific emotions drive informal borrowing behavior and the positive evaluations we observe among lenders.

### **Conclusion**

When deciding how to cover expenses, consumers must consider costs and benefits. When considering informal borrowing, negative self-conscious emotions lead consumers to neglect financial tradeoffs. Yet these same emotions may also help borrowers secure support from lenders. Prospective borrowers are therefore caught in a double bind: the orientation that inhibits them from asking for help may also be the one that makes lenders most willing to provide it. More broadly, when consumers navigate situations involving both social and financial concerns, the psychological processes that sustain valued relationships may conflict with financially advantageous decision making.

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## **WEB APPENDIX**

### **SOCIAL CONCERNS AND FINANCIAL REASONING WHEN BORROWING FROM FAMILY**

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## WEB APPENDIX A: ADDITIONAL PROCEDURE DETAILS

### Study 1a: All loan types, prompt and exclusions

The loan categories from Study 1a are listed below.

1. Informal loan: loan from friend, family member, partner, acquaintance, or other private individual.
2. Credit card: credit card borrowing, including carrying a balance or taking a cash advance.
3. Credit union: loan from a credit union.
4. Bank loan: loan from a bank, including a personal loan from a bank.
5. High-interest loan: payday loan or other clearly high-interest short-term or predatory loan, including title, pawn, or tribal loans.
6. Student loan: government or student loan.
7. Mortgage: mortgage, HELOC, or other home-secured loan.
8. Auto loan
9. BNPL: buy-now-pay-later or pay-over-time service.

The original dataset of non-deleted posts had 1,181,809 posts. We used gpt-5.4-nano to code the categories above using the prompt in italics below. We excluded all posts not coded as being one of the focal loan types below (N= 743,272). We also excluded posts coded 10 (N=174) due to a lack of data in that particular category. All remaining posts (N=438,363) were included in the analysis.

*Task: Read the post and output exactly one integer code.,*

*First decide whether the post is primarily about borrowing money or a loan. If not, output -1.*

*Be conservative: if borrowing is only mentioned briefly or is not the main focus, output -1. If the post is primarily about borrowing money, code the main source of the loan being discussed.*

*When multiple loan sources are mentioned, code the source that is the main focus of the post meaning the source the poster is mainly asking about, describing, or seeking advice about.*

*Codes:*

*-1 = not primarily about borrowing money or loan source unclear*

*1 = loan from friend, family member, partner, acquaintance, or other private individual*

*2 = credit card borrowing, including carrying a balance or taking a cash advance*

*3 = loan from a bank, including a personal loan from a bank*

*4 = loan from a credit union*

*5 = payday loan or other clearly high-interest short-term or predatory loan, including title, pawn, or tribal loans*

*6 = government or student loan*

*7 = mortgage, HELOC, or other home-secured loan*

*8 = auto loan*

*9 = buy-now-pay-later or pay-over-time service*

*10 = other commercial lender or other loan source*

*Output only the integer code and nothing else.*

## Study 2a

Thought rating instructions are reprinted below:

*We are curious about some topics people might mention when thinking about this choice. To help us better understand what you thought about, we'll ask you which topic(s) best describe(s) each of your thoughts. Please read the topics below **carefully**.*

**Practical details** - *Is the thought about the practical details of getting, having, or paying off the loan? These can be any practical elements such as the repayment, costs, logistics, or financial consequences of the loan.*

*Example: "I wonder how much I would need to pay in interest?"*

**Emotional reactions** - *Is the thought about any emotions you feel in thinking about getting, having, or paying off the loan? These can be any feelings you experience when thinking about the loan, whether about the financial situation (e.g., stress, worry, relief) or about yourself and others (e.g., pride, embarrassment, happiness).*

*Example: "I would feel humiliated having to borrow money in this situation."*

**Handling the situation a different way** - Is the thought about how you might want to handle this situation on your own, without a loan?

Example: "I would rather get a second job than borrow money."

**Other** - Is this about **something else** that is not covered by the topics described above?

A thought can be about one topic, multiple topics, or none of the topics listed. **If none of the topics apply, please only select "other."**

Participants then read three example thoughts and needed to correctly classify them (see table S1).

TABLE S1

STUDY 2 THOUGHT RATING TRAINING QUIZ

Question number	Example thought	Possible answers	Correct answer
1	"I'd take a second job before taking out a loan"	a) Mentions emotional reactions b) Mentions handling the situation a different way c) Mentions both embarrassment and handling the situation a different way d) Other - This is about something else	b)
2	"I am super worried about needing to pay interest, since it might make it hard for me to support my kids"	a) Mentions practical details b) Mentions emotional reactions c) Mentions both practical details and emotional reactions d) Other - This is about something else	c)
3	"Loans are immoral and evil"	a) Mentions practical details b) Mentions handling the situation a different way c) Mentions both practical details and handling the situation a different way d) Other - This is about something else	d)

## Studies 2b and 2c

Thought rating instructions are reprinted below:

*Thank you for sharing your thoughts about whether to borrow from family.*

*We are curious about some topics people might mention when thinking about this choice. To help us better understand what you thought about, we'll ask you which topic(s) best describe(s) each of your thoughts. Please read the topics below **carefully**.*

**Support** - *Is this about a specific person who might **support** you?*

*Example: "My sister might be willing to help me out"*

**Embarrassment** - *Is this about your **embarrassment** or **feelings of judgment**?*

*Example: "I would feel humiliated having to ask for help"*

**Financial benefits** - *Is this about **financial benefit(s)** of borrowing money from family such as low interest rates, no fees, etc.?*

*Example: "I probably would not need to pay interest on this loan"*

**Handling the situation yourself** - *Is this about how you might want to handle this situation **on your own**, without help from others?*

*Example: "I would rather get a second job than rely on someone else for money"*

**Other** - *Is this about **something else** that is not covered by the topics described above?*

*A thought can be about one topic, multiple topics, or none of the topics listed. **If none of the topics apply, please only select "other."***

TABLE S2

### STUDY 3 & STUDY 4 THOUGHT RATING TRAINING QUIZ

Question number	Example thought	Possible answers	Correct answer
1	"I'd take a second job before borrowing from family"	a) Mentions embarrassment b) Mentions handling the situation yourself c) Mentions both embarrassment and handling the situation yourself d) Other - This is about something else	b)
2	"My sister might be willing to help"	a) Mentions a specific person who might support	c)

	me out without charging me interest"	<ul style="list-style-type: none"> <li>b) Mentions financial details</li> <li>c) Mentions both a particular person who might support and financial details</li> <li>d) Other - This is about something else</li> </ul>	
3	"I'd try to pay back the loan as soon as possible" (study 2b)/"Loans are immoral and evil" (study 2c)	<ul style="list-style-type: none"> <li>a) Mentions handling the situation yourself</li> <li>b) Mentions financial benefits</li> <li>c) Mentions both handling the situation yourself and financial benefits</li> <li>d) Other - This is about something else</li> </ul>	d)

### Study 4

#### *AI prompts*

We used gpt-5.4-mini to classify the levels of self-consciousness of the 85 stimuli used in study 7 using the prompts in table S3. Although the purpose of study 7 was not to assess comparability of human and AI ratings, we found large correlations (between .70 and .84) between the human and AI ratings of the messages.

TABLE S3

#### PROMPTS AND SUMMARY STATISTICS OF STIMULI USED IN STUDY 7

Construct	Prompt	Mean AI rating (SD)	Mean human rating (SD)	Correlation between human and AI ratings
Apologetic tone	Role: You are a highly emotionally intelligent and careful coder. Task: Read the post and output exactly one integer code. This is a message a person sent to family members asking for a loan. Please assess how apologetic the message is. Please assess this from 1 to 7. 1 = the message was not at all apologetic, 7 = the message was highly apologetic. Code meaning, don't just look for keywords.	3.33 (1.98)	3.34 (1.21)	r=.84
<b>Self-consciousness</b>	Role: You are a highly emotionally intelligent and careful coder. Task: Read the post and output exactly one integer code. This is a message a person sent to family members asking for a loan. Please assess how much self-consciousness the	3.19 (1.67)	3.56 (0.99)	r=.70

	message expresses. Self-consciousness is a family of emotions including guilt, pride, shame, and embarrassment. Please assess the level of self-consciousness from 1 to 7. 1 = the message expresses no self-consciousness (guilt, pride, shame or embarrassment), 7 = the message expresses a great deal of self-consciousness (guilt, pride, shame, or embarrassment). Code meaning, don't just look for keywords.			
Guilt	Role: You are a highly emotionally intelligent and careful coder. Task: Read the post and output exactly one integer code. This is a message a person sent to family members asking for a loan. Please assess how much guilt the message expresses. Please assess this from 1 to 7. 1 = the message expresses no guilt, 7 = the message expresses a great deal of guilt. Code meaning, don't just look for keywords.	3.01 (1.81)	3.03 (0.92)	$r=.77$
Pride	Role: You are a highly emotionally intelligent and careful coder. Task: Read the post and output exactly one integer code. This is a message a person sent to family members asking for a loan. Please assess how much pride the message expresses. Please assess this from 1 to 7. 1 = the message expresses no pride, 7 = the message expresses a great deal of pride. Code meaning, don't just look for keywords.	1.05 (0.21)	-	-
Shame	Role: You are a highly emotionally intelligent and careful coder. Task: Read the post and output exactly one integer code. This is a message a person sent to family members asking for a loan. Please assess how much shame the message expresses. Please assess this from 1 to 7. 1 = the message expresses no shame, 7 = the message expresses a great deal of shame. Code meaning, don't just look for keywords.	3.54 (1.30)	-	-
Embarrassment	Role: You are a highly emotionally intelligent and careful coder. Task: Read the post and output exactly one integer code. This is a message a person sent to family members asking for a loan. Please assess how much embarrassment the message expresses. Please assess this from 1 to 7. 1 = the message expresses no embarrassment, 7 = the message expresses a great deal of embarrassment. Code meaning, don't just look for keywords.	3.99 (1.36)	-	-

*Note.* Table includes 85 messages tested in part 2 of study 7. Summary statistics and correlations are reported at the message level.

## WEB APPENDIX B: ADDITIONAL ANALYSIS

### Study 1a

#### LIWC Robustness Analysis

To supplement the AI analysis, we used the Linguistic Inquiry and Word Count (LIWC) to analyze the proportion of words related to anxiety and negative emotionality. Although LIWC does not include categories for any specific negative self-conscious emotions (such as guilt, shame, or embarrassment) or for negative self-conscious emotions more broadly, it does include a measure of anxiety, which is associated with negative self-conscious emotions (though it is not commonly conceptualized itself as a negative self-conscious emotion; Tracy 2007). We also analyzed overall negative emotionality to assess discriminant validity. Specifically, we tested whether posts about informal loans have a larger gap between their levels of negative self-conscious emotions and their overall level of negative emotionality compared to other types of loans.

#### *LIWC anxiety looks similar to negative self-conscious emotions*

We conducted a linear regression predicting the proportion of LIWC anxiety words by loan type, controlling for the date of the post. The regression showed a similar pattern to the regression with LLM-rated self-consciousness as the DV, with informal loan posts containing a higher proportion of anxiety-related words ( $M=.0014$ ) than all other loan types (e.g., student loans:  $M=.0012$ ,  $B=.000086$ ,  $SE=.000029$ ,  $t=-2.95$ ,  $p=.003$ ), with the exception of payday or other short-term, high-interest loans, which had the highest levels ( $M=.0018$ ,  $B=-.00037$ ,  $SE=.000059$ ,  $t=6.34$ ,  $p<.001$ ). The proportion of LIWC anxiety-related words correlated positively with the LLM-rated negative self-conscious emotions ( $r=.21$ ,  $t=-141.43$ ,  $p<.001$ ). These results are consistent with anxiety being related to, but not identical to, the negative self-conscious emotions we find in the data.

#### *Informal loans have relatively higher rates of negative self-conscious emotions*

We also assessed discriminant validity with the LIWC negative emotionality words. To do so, we examined whether informal loans had relatively more negative self-conscious emotions compared to their degree of overall negative emotionality. We standardized the LLM rating of negative self-conscious emotion and the LIWC negative emotionality ratings to have mean 0 and standard deviation 1. Then we subtracted the negative emotionality ratings for each loan from the self-conscious emotion ratings for each loan. Then we ran a linear regression predicting the difference between the two by loan type, comparing informal loans (coded 1) to all other types of loan (coded 0) and controlling for the date of the post. Informal loans had greater relative negative self-conscious emotions relative to overall negative emotionality ( $B=.16$ ,  $SE=.011$ ,  $t=15.11$ ,  $p<.001$ ). These results replicated using the difference between LIWC anxiety and LIWC negative emotionality as the DV instead ( $B=.040$ ,  $SE=.0098$ ,  $t=3.98$ ,  $p<.001$ ). These results suggest that negative self-conscious emotions (instead of negative emotionality more generally) play a disproportionate role in posts about informal loans compared to other types of loans.

#### Overall results

Table S4 shows the regression results from study 1a.

*TABLE S4*  
MEAN DV SCORES AND REGRESSION OUTPUTS

Dependent variable	Loan type	N	M (SD)	B	SE	t	p
Negative self-consciousness	Informal	13,057	1.97 (1.24)	Reference	--	--	--
	Mortgage	81,181	1.49 (0.82)	-0.47	0.01	-46.27	< .001
	Student loan	86,877	1.77 (1.09)	-0.18	0.01	-18.30	< .001
	Auto loan	44,387	1.71 (1.02)	-0.26	0.01	-24.57	< .001
	Credit union loan	5,582	1.60 (0.92)	-0.35	0.02	-20.56	< .001
	Bank loan	77,587	1.81 (1.10)	-0.16	0.01	-15.59	< .001
	Credit card	124,527	1.89 (1.17)	-0.07	0.01	-7.23	< .001
	Payday loan	3,546	2.57 (1.54)	0.58	0.02	28.54	< .001
	BNPL	1,619	1.69 (1.04)	-0.28	0.03	-10.08	< .001
Financial tradeoff	Informal	13,057	1.80 (1.44)	Reference	--	--	--
	Mortgage	81,181	2.65 (1.84)	0.83	0.02	53.77	< .001
	Student loan	86,877	2.20 (1.67)	0.40	0.02	26.28	< .001
	Auto loan	44,387	2.33 (1.65)	0.52	0.02	32.06	< .001
	Credit union loan	5,582	2.15 (1.66)	0.35	0.03	13.23	< .001
	Bank loan	77,587	2.34 (1.74)	0.53	0.02	34.26	< .001
	Credit card	124,527	1.82 (1.43)	0.03	0.02	1.74	.082
	Payday loan	3,546	1.90 (1.38)	0.10	0.03	3.16	.002
	BNPL	1,619	2.20 (1.61)	0.39	0.04	9.09	< .001

*Note.* B, SE, t, and p-values are from mixed linear regressions (one for each dependent variable) comparing each loan type to informal loans. Models control for date and a random intercept for post author. *Note.* B, SE, t, and p-values are from mixed linear regressions (one for each dependent variable) comparing each loan type to informal loans. Models control for date

and a random intercept for post author. N=438,363 posts.

*TABLE S5*  
LOAN TYPES MEASURED IN STUDY 1A

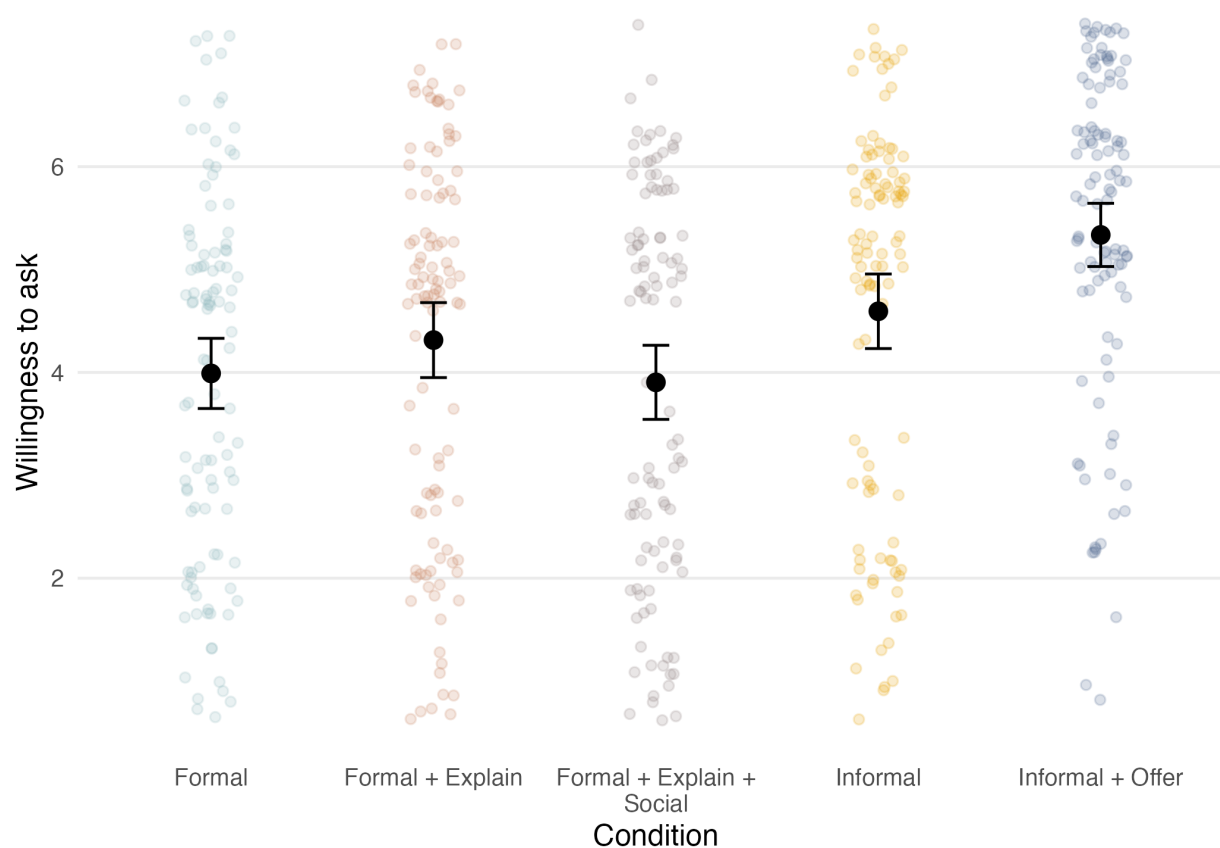
<b>Loan Type</b>	<b>Typical Interest Rate (APR)</b>	<b>N</b>
Informal loan (friend, family member, partner, acquaintance, or other private individual)	4.9%	13,057
Credit card (carrying a balance or cash advance)	20.97%	124,527
Bank loan	11.65%	77,587
Credit union loan	10.72%	5,582
Payday or other short-term high-interest loan	350%	3,546
Government or student loan	6.39% - 8.94%	86,877
Mortgage, HELOC, or other home-secured loan	6.38% - 7.54%	81,181
Auto loan	7.53%	44,387
Buy now, pay later or other service (BNPL)	0%	1,619

*Note.* Interest rates reflect typical ranges for 2025-2026. See table S20 for sources and additional detail.

### **Study 1c**

*FIGURE S1*

EFFECT OF CONDITION ON WILLINGNESS TO ASK IN STUDY 1C



*Note.* Error bars denote 95% CI.

### ***Effect of condition on willingness to borrow***

Since study 1c was designed to isolate self-consciousness, the effect of condition on willingness to borrow was not pertinent to our investigation. However, results are displayed in figure S1. Since we do not argue that self-consciousness directly affects willingness to seek help (indeed, it likely operates differently in the context of formal versus informal loans) we do not interpret the effect of condition on willingness to borrow further.

## **Study 2a**

### ***Predicting willingness to borrow by number of thoughts***

We conducted an exploratory linear regression predicting willingness to borrow from the number of thoughts of each type, including interactions between each thought type and condition. Because informal loans typically offer more favorable financial terms than credit cards, we predicted that practical thoughts would be more positively associated with willingness to borrow in the *informal* condition than in the *credit card* condition. Consistent with this prediction, there was a significant interaction between number of practical thoughts and condition ( $B=.41$ ,  $SE=.14$ ,  $t=2.90$ ,  $p=.004$ ). Simple slope analyses showed that practical thoughts

were positively associated with willingness to borrow in the informal loan condition ( $B=0.41$ ,  $SE=.11$ ,  $t=3.91$ ,  $p<.001$ ) but not in the credit card condition ( $B=.0069$ ,  $SE=.092$ ,  $t=.075$ ,  $p=.94$ ). Though this analysis suggests that considering the practical attributes of informal loans leads to greater willingness to borrow, studies 3, 4, and 5 examine it in greater detail.

## Study 2b

### *Descriptive statistics*

In our main analyses, we examined raw counts of thought topics. As robustness checks, we ran them with thoughts measured as proportions, and binary presence/absence in the thought process (i.e., whether a thought of each type appeared at least once). Since participants could rate one thought as relating to more than 1 topic, we weighted our proportion calculations by thought. For example, if a thought was about both social support and financial benefits, those topics would each be weighted at .5 (instead of 1) so that the total proportions of thoughts summed to 1. Presence/absence was calculated by using a binary variable to indicate whether participants ever had a thought of a particular type. table S6 has the counts of each thought type as well as proportions of counts and proportions of presence vs. absence in the thought process as a whole.

TABLE S6  
MEAN THOUGHT TYPE COUNT, PROPORTION AND PRESENCE BY TYPE

Thought type	Mean Thought Count	Mean Thought Proportion	Mean Thought Presence
Self-Conscious	2.09 (1.82)	0.40 (0.32)	0.77 (0.42)
Other	1.07 (1.60)	0.19 (0.24)	0.52 (0.50)
Counterfactual	1.05 (1.27)	0.20 (0.26)	0.56 (0.50)
Social Support	0.73 (1.11)	0.13 (0.20)	0.42 (0.49)
Financial Benefits	0.46 (0.85)	0.08 (0.15)	0.30 (0.46)

### *Robustness tests: Main text predictions of borrowing choice with alternate thought specifications*

We ran the linear regressions predicting willingness to borrow from negative self-conscious thoughts and financial tradeoff thoughts from the main text using alternate specifications of the thoughts as the independent variables. table S7 shows results using the proportion of negative self-conscious and financial tradeoff thoughts, while table S8 shows results using the binary presence/absence of each thought type. Overall patterns replicated.

**TABLE S7**  
 PROPORTION OF NEGATIVE SELF-CONSCIOUS AND FINANCIAL TRADEOFFS  
 PREDICTING BORROWING CHOICE

	<i>Dependent variable:</i>		
	Likelihood of borrowing (1-7)		
	(1)	(2)	(3)
Proportion negative self-conscious thoughts	-0.244*		-0.071
	(0.103)		(0.103)
Proportion financial tradeoff thoughts		0.622***	0.602***
		(0.099)	(0.103)
Number of thoughts	0.026	0.023	0.023
	(0.046)	(0.044)	(0.044)
Constant	3.242***	3.255***	3.252***
	(0.224)	(0.215)	(0.215)
Observations	411	411	411
R <sup>2</sup>	0.014	0.089	0.090
Adjusted R <sup>2</sup>	0.009	0.085	0.084

*Note:*

\*p<.05 \*\*p<.01 \*\*\*p<0.001

Thought proportions are standardized to have mean 0 and standard deviation 1

**TABLE S8**  
 PRESENCE/ABSENCE OF NEGATIVE SELF-CONSCIOUS AND FINANCIAL  
 TRADEOFFS PREDICTING BORROWING CHOICE

	<i>Dependent variable:</i>		
	Likelihood of borrowing (1-7)		
	(1)	(2)	(3)
At least one negative self-conscious thought	-0.401		-0.171
	(0.257)		(0.251)
At least one financial tradeoff thought		1.259***	1.234***
		(0.219)	(0.223)
Number of thoughts	0.046	-0.014	-0.004
	(0.048)	(0.045)	(0.047)
Constant	3.462***	3.039***	3.134***

	(0.263)	(0.220)	(0.261)
Observations	411	411	411
R <sup>2</sup>	0.007	0.075	0.076
Adjusted R <sup>2</sup>	0.002	0.071	0.070
<i>Note:</i>	*p<.05 **p<.01 ***p<0.001		

### *Additional analysis: Thought order*

In addition, we examined the average position of the first thought of each type, limited to participants who had at least one thought of each type (see table S9). Self-conscious thoughts occurred earlier than thoughts of other types. We used a linear mixed-effects regression with a random intercept for each participant to test this statistically. Self-conscious thoughts appeared earlier than alternatives thoughts ( $B=.79$ ,  $SE=.13$ ,  $t=6.23$ ,  $p<.001$ ), and other thoughts ( $B=1.01$ ,  $SE=0.13$ ,  $t=7.80$ ,  $p<.001$ ). See main text for other results.

TABLE S9

### POSITION OF FIRST OCCURRENCE OF THOUGHT TYPES

Thought type	N	Mean Position	Median Position	SD
Self-conscious	317	1.52	1	1.07
Loan Availability	171	2.31	2	1.57
Financial Tradeoffs	123	2.54	2	1.66
Alternatives	229	2.31	2	1.63
Other	215	2.53	2	1.61

*Note.* N denotes the number of participants who had at least one thought of each type. All summary statistics are calculated only for that number of participants.

### *Additional analyses: Loan availability*

#### *Loan availability results*

Though they are not germane to our main analysis, we also examined thoughts about loan availability. Using the same negative binomial model from the main text, we found that these thoughts were less common than self-conscious thoughts. ( $M_{\text{Availability}}=0.73$ ,  $SD=1.11$ , vs. negative self-conscious  $\exp(B)=2.88$ ,  $z=12.24$ ,  $p<.001$ ).

In addition, a linear mixed effects regression predicting the serial position of loan availability thoughts showed they occurred later in the thought process than negative self-conscious thoughts ( $M=2.31$ ,  $SD=1.57$ ,  $B=.79$ ,  $SE=.14$ ,  $t=5.65$ ,  $p<.001$ ). Like with thoughts about financial tradeoffs, the log-transformed count of prior negative self-conscious thoughts predicted that a thought would be less likely to be about loan availability ( $\text{Exp}(B)=.42$ ,  $z=-3.47$ ,  $p<.001$ ; non-log-transformed  $\text{Exp}(\beta)=.79$ ,  $z=-2.13$ ,  $p=.034$ ).

Finally, a linear regression showed that having thoughts about loan availability ( $B=0.69$ ,  $SE=.10$ ,  $t=6.72$ ,  $p<.001$ ) were positively associated with willingness to borrow. Overall, thoughts about loan availability seemed similar to thoughts about financial tradeoffs: they occurred rarely, were less salient than negative self-conscious thoughts, and positively predicted willingness to borrow.

Though they are not germane to our main text hypotheses, we estimated models examining the relationship between loan availability and willingness to borrow (see table S10, S11, and S12, model 1). We also estimated models including all thought types (except “other”) in the model (see table S10, S11, and S12, model 2). In these models, thoughts about financial details, loan availability, and other ways of solving the problem all independently predicted willingness to borrow.

**TABLE S10**

PREDICTING BORROWING PREFERENCE BY THOUGHT COUNT

<i>Dependent variable:</i>		
Likelihood of borrowing (1-7)		
	(1)	(2)
Count of negative self-conscious thoughts		-0.106 (0.142)
Count of thoughts about financial details		0.457*** (0.108)
Thoughts about loan availability	0.690*** (0.103)	0.498*** (0.115)
Thoughts about other ways of solving problem		-0.479*** (0.109)
Other thoughts		0.122 (0.138)
Number of thoughts	-0.067 (0.046)	-0.018 (0.090)
Constant	3.644*** (0.222)	3.433*** (0.401)
Observations	411	411
R <sup>2</sup>	0.100	0.199
Adjusted R <sup>2</sup>	0.096	0.187

*Note:* \* $p<.05$  \*\* $p<.01$  \*\*\* $p<0.001$

All thought counts standardized to have mean 0 and standard deviation 1

**TABLE S11**

PREDICTING BORROWING PREFERENCE BY PROPORTION OF THOUGHTS

*Dependent variable:*

	Likelihood of borrowing (1-7)	
	(1)	(2)
Proportion of negative self-conscious thoughts		-0.145 (0.124)
Proportion thoughts about financial details		0.406*** (0.096)
Proportion thoughts about loan availability	0.892*** (0.094)	0.644*** (0.107)
Proportion thoughts about other ways of solving problem		-0.586*** (0.116)
Number of thoughts	0.030 (0.042)	0.001 (0.039)
Constant	3.221*** (0.204)	3.348*** (0.192)
Observations	411	411
R <sup>2</sup>	0.183	0.295
Adjusted R <sup>2</sup>	0.179	0.286

*Note:*

\*p<.05 \*\*p<.01 \*\*\*p<0.001

All thought proportions standardized to have mean 0 and standard deviation 1

**TABLE S12****PREDICTING BORROWING PREFERENCE BY BINARY TOPIC PRESENCE**

	<i>Dependent variable:</i>	
	Likelihood of borrowing (1-7)	
	(1)	(2)
At least one negative self-conscious thought		-0.079 (0.239)
At least one thought about financial benefits		0.733*** (0.218)
At least one thought about loan availability	1.761*** (0.194)	1.456*** (0.203)
At least one thought about other ways of solving problem		-0.800*** (0.190)
At least one thought about other topic		-0.028 (0.199)
Number of thoughts	-0.042 (0.043)	-0.016 (0.049)
Constant	2.800*** (0.212)	3.117*** (0.278)
Observations	411	411
R <sup>2</sup>	0.169	0.225
Adjusted R <sup>2</sup>	0.165	0.213

*Note:* \*p<.05 \*\* p<.01 \*\*\* p<0.001

***Additional analysis: relationship between credit score and thoughts******The relationship between credit score and informal borrowing***

It is possible that the thoughts we observe might reflect (a lack of) access to informal loans. As an exploratory test, we examined the correlation between self-reported credit score and informal borrowing. We might expect that participants with lower credit scores would report fewer negative self-conscious thoughts (due to less access to alternatives) or more thoughts about financial benefits (due to worse interest rates on formal loans). Eighty-three participants either did not know or did not report their credit score, leaving a final sample of 328. The mean credit score was 697.79 (SD=105.67).

Credit score was unrelated to participants' willingness to borrow ( $r=-.005$ ,  $t=-.087$ ,  $p=.93$ ). Credit score was also uncorrelated with the proportion of thoughts about availability ( $r=.019$ ), financial benefits ( $r=.022$ ), or self-consciousness ( $r=-.026$ ). The correlation with thoughts about alternate means of paying expenses was somewhat larger but still nonsignificant ( $r=0.089$ ,  $p=.11$ ).

## Study 2c

### *Causal evidence for negative self-conscious thought persistence*

We hypothesized that participants in the *negative self-conscious emotion* condition would generate the greatest number of subsequent negative self-conscious thoughts, followed by the control condition, with the *financial tradeoffs* condition generating the fewest.

A Poisson regression predicting the number of negative self-conscious thoughts (including an offset controlling for the total number of thoughts) using HC2 standard errors showed that, relative to the control condition, the *negative self-conscious emotion* condition produced an increase in the number of subsequent negative self-conscious thoughts ( $\text{exp}(B)=1.18$ ,  $z=2.12$ ,  $p=.03$ ). A linear regression showed a significantly higher proportion of such thoughts ( $\text{exp}(B)=.11$ ,  $SE=.035$ ,  $t=3.14$ ,  $p=.002$ ), while the likelihood of generating at least one such thought did not increase ( $\text{exp}(B)=1.04$ ,  $z=0.91$ ,  $p=.36$ ).

In contrast, the *financial tradeoffs* condition reduced the number ( $\text{exp}(B)=.73$ ,  $z=-3.30$ ,  $p<.001$ ), proportion ( $B=-.12$ ,  $t=3.14$ ,  $p=.002$ ), and likelihood of subsequent negative self-conscious thoughts ( $\text{exp}(B)=0.47$ ,  $t=-3.17$ ,  $p=.002$ ) relative to the control condition.

### *Loan availability*

Exploratory analysis examined whether the condition affected thoughts about loan availability. A negative binomial regression on the weighted number of availability thoughts showed that, relative to the control condition, the self-conscious condition marginally reduced the weighted number of availability thoughts ( $M_{\text{control}} = 0.58$ ,  $SD = 0.88$  vs.  $M_{\text{self-conscious}}=.44$ ,  $SD = 0.80$ ,  $\text{Exp}(B)=0.77$ ,  $z=-1.70$ ,  $p=.088$ ). A linear regression on the proportion of availability thoughts showed a directionally similar but nonsignificant reduction ( $M_{\text{control}}=.16$ ,  $SD=.22$  vs.  $M_{\text{self-conscious}}=.12$ ,  $SD=.22$ ,  $B=-.039$ ,  $SE=.024$ ,  $t=-1.62$ ,  $p=.11$ ). Finally, a logistic regression indicated a significantly lower likelihood of generating at least one availability thought over the entire thought process ( $M_{\text{control}}=48.1\%$  vs.  $M_{\text{self-conscious}}=31.5\%$ ,  $\text{Exp}(B)=.51$ ,  $z=3.04$ ,  $p=.002$ ). The financial details condition did not significantly affect availability thoughts ( $ps > .38$ ).

## Study 3

### *Descriptive and injunctive norms*

Most participants ranked at least one other interest-bearing loan as more normatively acceptable (descriptive norms:  $N=95$  of 151; injunctive norms:  $N=93$  of 151) than informal loans, though informal loans were rated as most normatively acceptable on average. This was because the formal loans that participants rated most normatively acceptable varied. The relationship between rankings and injunctive norms ( $\text{Exp}(B)=1.02$ ,  $t=-.40$ ,  $p=.70$ ) and descriptive norms ( $\text{Exp}(B)=1.08$ ,  $t=1.25$ ,  $p=.21$ ) did not vary between conditions. See table S13 for average levels of each type of norm.

*TABLE S13*  
AVERAGE NORM RANK BY LOAN

Loan Type	Avg. Descriptive norm ranking (SD)	Avg. Injunctive norm ranking (SD)
Informal	2.68 (1.57)	2.58 (1.55)
Bank (personal loan)	3.84 (1.12)	3.62 (1.17)
Credit union	4.01 (1.08)	3.82 (1.04)
Credit card	3.16 (1.41)	3.34 (1.37)
Payday	4.16 (1.20)	4.41 (1.02)

### Study 4

#### *Filtering questions and summary statistics for stimulus generation*

To generate stimuli, we recruited participants who had real expenses and had them write a message to a family member asking for help paying their expenses. Upon entering the study, participants answered six screener questions, three of which assessed whether participants had a current or future expense or current debt of \$500 or more they were struggling to pay, and three of which were decoys. The questions were displayed in random order (see table S14).

*TABLE S14*

FILTERING QUESTIONS FOR STUDY 7 STIMULI GENERATION

Question text	Answers
Do you have any significant expenses (\$500 or more) that you are having difficulty paying right now?	If “yes” selected, filtered in.
Do you have a large amount of debt (\$500 or more) that you are currently paying interest on? If so, please indicate the debt type(s) you have below.	If “yes, credit card debt” elected, filtered in.
Do you have a large expense (\$500 or more) in the next year that you think you may have trouble paying?	If “yes” selected, filtered in.
Did you purchase a durable good (such as an appliance, a car, etc.) in the last 6 months?	Decoy question.
If you were to have an unexpected \$1,000 expense arise this week, would you be able to pay it without going into debt?	Decoy question.
Are you expecting to receive \$10,000 or more in inheritance in the next five years?	Decoy question.

Participants who did not answer yes to either of the first three questions in table S14 were filtered out of the study. We recruited participants until we had 401 complete surveys. We excluded participants who did not follow instructions on the task (e.g., by stating that they would never ask family for help instead of completing the writing task) for a final sample of 359 participants ( $M_{\text{age}}=36$ , 32% male, 67% female, 1% other/prefer not to say). Participants then described their expense or debt and reported its size.

*TABLE S15*  
SIZE OF EXPENSE OR DEBT IN STUDY 7 STIMULI GENERATION

Type	Mean	Median	SD	N
Expense	\$7,033.35	\$1,294.37	\$25,145.00	305
Debt	\$8,959.16	\$5,000.00	\$11,153.37	54
<b>Overall</b>	<b>\$7,323.03</b>	<b>\$1,500.00</b>	<b>\$23,575.25</b>	<b>359</b>

*Note.* Values are based on the final sample (N = 359).

Participants were then randomly assigned to one of two between-subjects conditions. In both conditions, participants were asked to write what they would say if asking a family member to cover the expense or debt. They were asked to write as if they were writing their family member a message (by phone, email, conversation, or text). In the *control* condition, participants received only these instructions. In the *financial* condition, participants received the same instructions with additional text instructing them to think about the financial details of borrowing from family as they wrote. We did this to get a wide range of different stimuli.

We used AI (gpt-5.4-mini) to code guilt from 1-7 using the following prompt:

*“Role: You are a highly emotionally intelligent and careful coder. Task: Read the post and output exactly one integer code. This is a message a person sent to family members asking for a loan. Please assess how much guilt the message expresses. Please assess this from 1 to 7. 1 = the message expresses no guilt, 7 = the message expresses a great deal of guilt. Code meaning, don't just look for keywords.”*

We also coded negative self-conscious emotions:

*“Role: You are a highly emotionally intelligent and careful coder. Task: Read the text and output exactly one integer code. This is a message a person sent to family members asking for a loan. Please assess how much negative self-consciousness the message expresses. Negative self-consciousness is a family of emotions including guilt, shame, and embarrassment. Please assess the level of negative self-consciousness from 1 to 7. 1 = the message expresses no self-consciousness (guilt, shame and/or embarrassment), 7 = the message expresses a great deal of self-consciousness (guilt, shame, and/or embarrassment). Code meaning, don't just look for keywords.”*

And apologetic tone:

*“Role: You are a highly emotionally intelligent and careful coder. Task: Read the post and output exactly one integer code. This is a message a person sent to family members asking for a loan. Please assess how apologetic the message is. Please assess this from 1*

*to 7. 1 = the message was not at all apologetic, 7 = the message was highly apologetic. Code meaning, don't just look for keywords."*

We then selected the messages with guilt scores equaling 1 or 4 or greater (N=102) and conducted additional filtering described in the main text to get the set of 85 messages we used for study 7.

### ***Human-AI agreement***

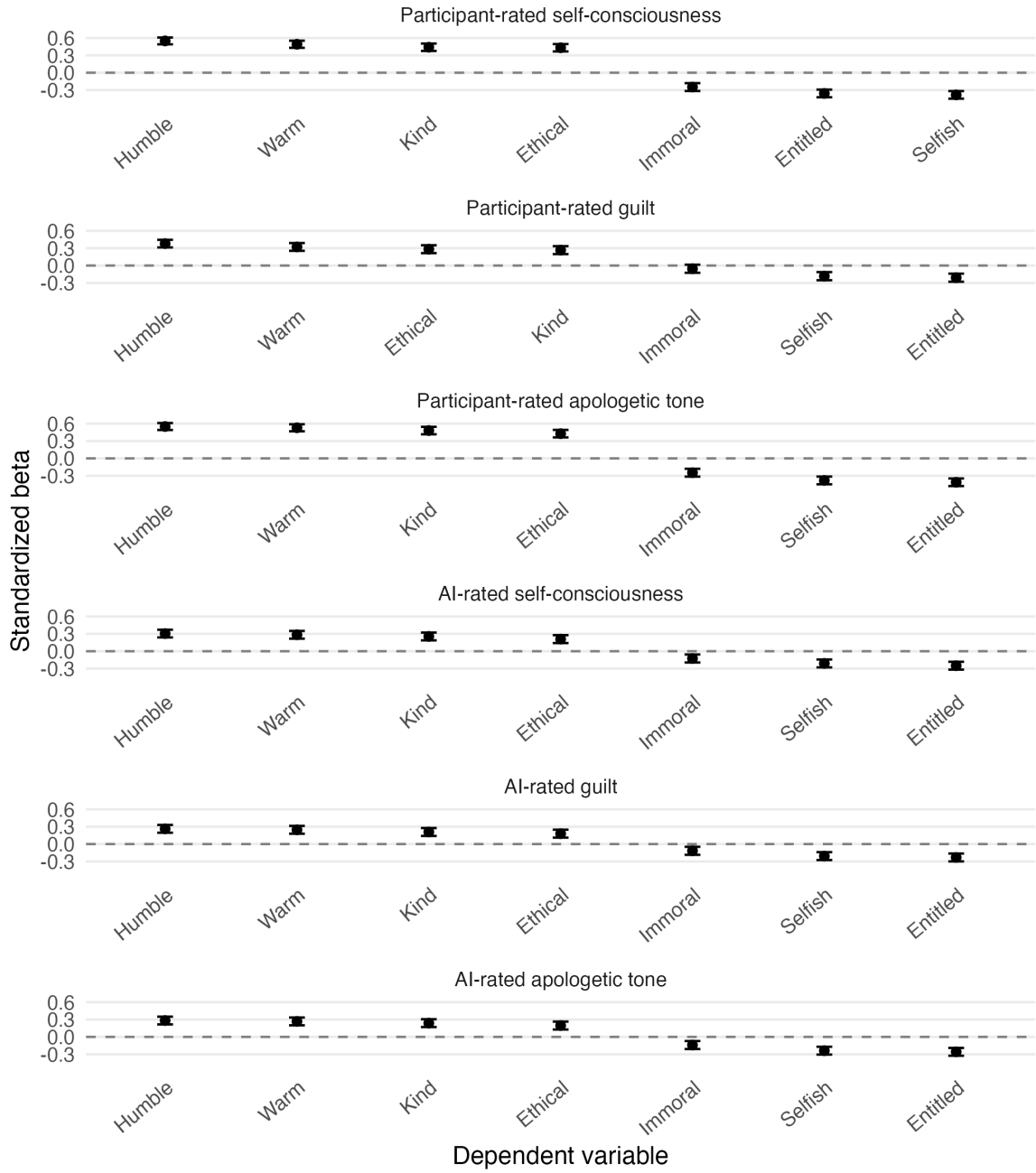
Although this was not the focus of the study, we assessed agreement between human and AI ratings. Humans and AI did not receive identical prompts, and humans responded in the context of the study 7 scenario, so this is a conservative test. To obtain a human rating for each message, we averaged the 7-10 responses each one received. The correlations between human and AI were highly correlated (negative self-conscious emotions:  $r=.72$ ,  $t=9.34$ ,  $p<.001$ ; guilt:  $r=.77$ ,  $t=10.94$ ,  $p<.001$ ; apologetic tone:  $r=.84$ ,  $t=13.88$ ,  $p<.001$ ).

### ***Study 7 expanded results***

We also examined the relationship between the three measured variables (preregistered) and the three AI-rated variables (non-preregistered, exploratory) and the seven character measures. Across all the measures, messages that expressed more self-consciousness were rated more positively (see figure S2).

## ***FIGURE S2***

**RELATIONSHIP BETWEEN PARTICIPANT AND AI-RATED NEGATIVE SELF-CONSCIOUS COGNITIONS AND PARTICIPANT CHARACTER JUDGMENTS**



Note. Error bars denote 95% CI.



49-63	X	X	X	X	X		X	X		X	X	X
-------	---	---	---	---	---	--	---	---	--	---	---	---

Key:

- (1) Loans from friends or family
- (2) Regular income sources
- (3) Credit cards or loans
- (4) Money from savings or selling assets or possessions
- (5) Unemployment insurance payments
- (6) COVID-19 stimulus payments
- (7) SNAP
- (8) Other
- (9) Child tax credits
- (10) EBT
- (11) Government rental assistance
- (12) WIC

### **Study S2: Who has access to informal loans? A social network study**

Study S2 tested whether participants had access to informal loans by having them list their immediate social network, then asking them several questions about whether they were able and willing to borrow money from each of the people they listed. We predicted that participants would tend to know people who were willing to help them and who they were willing to ask for aid.

#### **Methods**

##### ***Participants***

We recruited 212 United States residents who were fluent in English from Prolific. Three failed the attention check, and a further three were removed due to additional exclusions (see procedure below) leaving us with a final sample of N=206 (36% male, 63% female, 1% nonbinary/other,  $M_{age}=38$  years). Measures and analyses were pre-registered, except where noted, at <https://aspredicted.org/6zzx-2mv6.pdf>.

##### ***Procedure***

After reading an introduction to the study, participants were instructed to write the first name and last initial of 7 people in their network: their father, their mother, a close friend, a sibling, a cousin, an aunt or an uncle, and a child. Participants were instructed to leave the entry blank if they did not have a living network member over the age of 18. Three participants entered “n/a” for one or more entries. In a deviation from the preregistration, these entries (6 entries) were removed from the analysis. In addition, all “friend” entries were excluded from analysis as well, resulting in the removal of 3 additional participants.

Participants next read a slightly shortened version of the hypothetical scenario used in other studies, where they imagined that they were struggling to pay their bills and needed \$500 to cover their expenses. Then they were told to remember the scenario as they answered the questions that followed.

Participants then answered four questions about each person they listed. These questions measured 1) whether participants thought the person had enough money to lend them \$500 (yes/no), 2) if the person would lend them \$500 if they asked (yes/no), 3) if they would consider going to the person for help in the scenario they read (yes/no), and 4) how likely they would be to borrow \$500 from that person (from 1 – highly unlikely to 7 – highly likely). Participants answered these questions up to 7 times, once for each person they listed. Next, they answered an attention check, income, gender, and age, and indicated whether any parts of the survey seemed confusing.

### **Results**

To assess the availability of informal loans, we counted the number of participants who had someone in their network that they could ask, someone who might say yes, and someone they would consider asking for help (see table S17 for summary). In other words, we counted the number of participants who answered “yes” for each of these questions for at least one person. Participants reported knowing many people who could help them. Ninety-four percent of participants (CI 95%: [89%, 97%]) knew at least one person who had enough money to help them with a \$500 expense. A similar percentage (94%, CI 95%: [89%, 96%]) reported knowing at least one person who would be willing to help them. Finally, 85% of participants (CI 95%: [79%, 89%]) knew someone who they would be willing to consider asking for help. People on average were willing to borrow from someone in their family; mean willingness to borrow from those people who participants most preferred to borrow from was 5.67 out of 7 (CI 95%: [5.40, 5.93]), indicating that most participants truly had someone in their family they were willing to borrow from. Even the low end of the 95% confidence interval for this value represents a value between “slightly likely” and “likely” to borrow. Thus, most participants knew at least one person they would rely on for aid.

*TABLE S17*  
DESCRIPTIVE STATISTICS OF SOCIAL NETWORKS

Average number people listed (SD)	Average number able to help (SD)	Average number would say yes (SD)	Average number would consider asking (SD)	Average willingness to ask (from 1-7) (SD)	N
4.68 (1.24)	3.02 (1.47)	2.94 (1.56)	1.97 (1.35)	3.43 (1.43)	206

To test whether richer people know richer others, we ran an exploratory binary logistic regression predicting knowledge of someone willing to help (1=knew at least one person, 0 did not know a single person) by income. Income significantly correlated with knowing someone who would help ( $\exp(B)=1.60$ ,  $z=2.23$ ,  $p=.030$ ), though 86 percent (95% CI: [64%, 96%]) of the lowest-income participants (household income < \$25,000; N=22) still knew someone willing to help and approximately 77 percent (95% CI: [54%, 91%]) had someone they were willing to ask. Although there are differences in availability of informal loans to richer and poorer individuals, most still likely have access to such social support should they fall on hard times.

### Study S3: Replication of study 4

Study 4 suggested that expressing negative self-conscious emotions in a message to a lender can improve lender evaluations and willingness to help. However, it was limited by potential confounds between message content and expressed negative self-consciousness. Study S3 isolates feelings of self-consciousness on lender perceptions in a more tightly-controlled design.

#### Method

##### *Participants*

We recruited 343 United States residents fluent in English from Prolific. One participant failed an attention check, resulting in a final sample of 342 participants (39% male, 59% female, 2% other/prefer not to say;  $M_{age}=37$ ). The study was preregistered at <https://aspredicted.org/zf29b7.pdf>.

##### *Procedure*

Participants took the perspective of a prospective lender, like in study 4. They read a scenario in which they considered an “adult family member who has a full-time job and supports themselves financially.” This family member was described as facing financial difficulties because their regular income and checking account balance were insufficient to cover usual household expenses. The family member needed \$500 and asked the participant whether they would loan them the funds. The wording of the scenario was very close to what borrowers read in previous studies (see ResearchBox for full wording).

Participants were randomized to either a *self-conscious orientation* condition or a *control* condition. The *self-conscious orientation* condition was identical to the control but included an additional sentence: “You can tell your family member is embarrassed, self-conscious, and worried that they will be judged for their situation.” Participants then reported how likely they would be to lend to their family member (“How likely would you be to lend your family member \$500 to cover their expenses?” (1 = Highly unlikely to 7=Highly likely)).

Participants next completed three sets of questions presented in random order (with item order randomized within each set). One was a set of manipulation checks, measuring the extent to which participants perceived the target as self-conscious and focused on financial details (1 = not at all, 7 = very much). Another consisted of 10 trait adjectives (Goodwin, Piazza, and Rozin 2014), which participants rated in terms of how well each described the target (1 = Does not describe the person at all, 7 = Describes the person very well; see Figure 10). The third contained questions assessing the perceived psychological entitlement of the target (3 items;  $\alpha = .87$ , adapted from Campbell et al. 2004; and Hochwarter et al. 2007) and perceived transactionality (4 items;  $\alpha=.87$ ).

TABLE S18

#### WORDING OF ENTITLEMENT AND TRANSACTIONALITY ITEMS

Construct	Wording
Entitlement	How much does your family member act as if they are more deserving than others?
Entitlement	How much does your family member seem to act as though they deserve your money?
Entitlement	How much does your family member seem to feel entitled to your money?

Construct	Wording
Transactionality	How much does your family member view your relationship in transactional terms?
Transactionality	How much does your family member seem to be trying to get something from you?
Transactionality	How much does your family member seem to be viewing you like a piggy-bank?
Transactionality	How much does your family member seem to be trying to use you for your money?

After completing these measures, participants completed a series of comprehension checks, an attention check, and reported their age and gender.

## Results

### Manipulation checks

As expected, participants perceived the family member as more self-conscious in the *self-conscious orientation* condition ( $M=6.09$ ,  $SD=1.24$ ) than in the control condition ( $M=4.18$ ,  $SD=1.63$ ;  $B=1.91$ ,  $SE=.16$ ,  $t=12.20$ ,  $p<.001$ ). The manipulation also slightly increased perceptions that the family member was focused on the financial details of borrowing, ( $M_{self-conscious}=4.63$ ,  $SD=1.69$ ,  $M_{control}=4.30$ ,  $SD=1.79$ ;  $B=.32$ ,  $SE=.19$ ,  $t=1.71$ ,  $p=.09$ ).

### Willingness to help

Participants were directionally more willing to lend to the family member in the self-conscious orientation condition ( $M=5.78$ ,  $SD=1.45$ ) than in the control condition ( $M=5.46$ ,  $SD=1.66$ ;  $B=.32$ ,  $SE=.17$ ,  $t=1.91$ ,  $p=.057$ ).

### Character inferences

Compared to targets in the *control* condition, targets in the *self-conscious* condition were rated as more ethical ( $M=4.98$  vs.  $4.68$ ;  $B=.30$ ,  $SE=.15$ ,  $t=2.06$ ,  $p=.041$ ) and more humble ( $M=5.28$  vs.  $4.77$ ;  $B=.51$ ,  $SE=.16$ ,  $t=3.16$ ,  $p=.002$ ). They were also rated as less selfish ( $M=2.16$  vs.  $2.77$ ;  $B=-.61$ ,  $SE=.16$ ,  $t=-3.71$ ,  $p<.001$ ), less immoral ( $M=1.78$  vs.  $2.31$ ;  $B=-.53$ ,  $SE=.15$ ,  $t=-3.64$ ,  $p<.001$ ), and less entitled ( $M=2.27$  vs.  $2.89$ ;  $B=-.63$ ,  $SE=.18$ ,  $t=-3.59$ ,  $p<.001$ ). Effects on virtuousness, warmth, competence, smartness, and kindness were not statistically significant ( $ps>.08$ ). See table S19 for all means and test statistics, as well as full results for the entitlement and transactionality scales, which followed the same general pattern.

TABLE S19

### STUDY S3 RESULTS

Outcome	Mean (Control)	SD (Control)	Mean (Self-conscious)	SD (Self-conscious)	B	t	p
Positive/negative evaluation	5.474	1.339	5.661	1.289	0.187	1.317	.189
Willingness to lend	5.456	1.663	5.778	1.446	0.322	1.908	.057
Entitlement index	2.489	1.478	2.002	1.263	-0.487	-3.278	.001
Transactionality index	2.69	1.513	2.338	1.216	-0.352	-2.374	.018

**Character  
measures**

Virtuous	4.246	1.345	4.404	1.563	0.158	1.001	.317
Selfish	2.766	1.632	2.158	1.386	-0.608	-3.714	<.001
Immoral	2.31	1.496	1.778	1.192	-0.532	-3.638	<.001
Warm	4.749	1.41	4.836	1.388	0.088	0.58	.562
Competent	4.643	1.567	4.842	1.508	0.199	1.196	.233
Smart	4.684	1.37	4.942	1.413	0.257	1.71	.088
Kind	4.912	1.319	5.099	1.383	0.187	1.28	.201
Entitled	2.895	1.712	2.269	1.506	-0.626	-3.589	<.001
Humble	4.766	1.569	5.281	1.44	0.515	3.16	.002

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