

Pettiness in Social Exchange

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**Abstract**

We identify and document a novel construct—pettiness, or intentional attentiveness to trivial details—and examine its (negative) implications in interpersonal relationships and social exchange. Seven studies show that pettiness manifests across different types of resources (both money and time), across cultures with differing tolerance for ambiguity in relationships (the United States, Switzerland, Germany, and Austria), and is distinct from related constructs such as generosity, conscientiousness, fastidious, and counter-normativity. Indeed, people dislike petty exchanges even when the (petty) amount given is more generous (e.g., a gift card for \$5.15 rather than \$5), suggesting that pettiness may in some instances serve as a stronger relationship signal than actual benefits exchanged. Attentiveness to trivial details of resource exchanges harms communal-sharing relationships by making (even objectively generous) exchanges feel transactional. When exchanging resources, people should be wary of both how much they exchange, and the manner in which they exchange it.

How do actors know whether they are in an exchange relationship—where both parties track a careful balancing of giving and taking—or a communal relationship—where both parties' behavior is non-contingent and characterized by trust (Clark & Mills, 1993; Fiske, 1992)? One previously-identified clue is the objective value of resources being exchanged: as a general rule, giving more improves the quality of communal-sharing relationships (Cotterell, Eisenberger, & Speicher, 1992; Flynn, 2003; Flynn & Adams, 2009). However, we argue that communal-sharing relationships are not solely dependent on how much is exchanged, but also how it is exchanged: specifically, we suggest that when receivers perceive exchanges to be petty—defined as intentional attentiveness to trivial details—even generous actions can hurt social relationships. Critically, therefore, we differentiate petty behaviors from mere lack of generosity: although pettiness and stinginess are often used interchangeably by laypeople, we propose that pettiness exerts influence independent of (lack of) generosity. Indeed, our results demonstrate that pettiness and generosity exert unique (and opposite) effects on relationship satisfaction in romantic couples, and that petty behavior can undermine relationships even when that petty behavior is objectively generous (e.g., giving \$5.15 can be worse for relationship quality than giving \$5).

The role of pettiness in exchanging resources is poised to become even more central with the rise of new digital payment services such as Venmo and Square Cash, which allow people in communal-sharing relationships to both closely monitor payment history and pay back amounts owed—down to the last cent. These platforms thus may shift communal-sharing relationships (when a friend offers a ride, there is no set expectation that I will pay her back) into market-pricing relationships (when a friend offers a ride, she requests a precise payment for the amount of gas consumed). In recent years, precise payments in communal-sharing relationships have

become more commonplace: when we surveyed 100 Venmo users (48% male;  $M_{age} = 28.92$ ,  $SD = 8.02$ ) for two of their most recent transactions, 52.6% of transactions amongst friends entailed transfers of precise amounts (See Supplemental Materials). Moreover, popular discourse is replete with such payments gone awry—from a woman charging a friend for a coffee that she offered to purchase, to putting a specific price on sips of wine shared at home (Paul, 2016). These examples suggest the potential for the pettiness inherent in such payment services—in their implicit encouragement of attention to trivial details—to negatively impact relationships.

Why might petty social exchanges harm relationships? In general, any sign that gives feel insecure in leaving room for error in a relationship can signal a lack of desire for an ongoing relationship (DePaulo & Kashy, 1998; Gould & Gould, 1989). We suggest that deliberating over trivial matters when deciding how much to expend can signal a partner's intention to give precisely no more and no less than is necessary, making that relationship feel transactional in nature. In market-pricing relationships such as between retailers and customers, such ongoing cost-benefit analyses are typical: payment amounts reflect the quality and quantity of work being performed (Fiske, 1992; Gneezy & Rustichini, 2000). In communal-sharing relationships such as between friends, in contrast, cost-benefit analyses are uncommon and even inappropriate (Belk, 1976; Caplow, 1982; Fiske, 1992; Heyman & Ariely, 2004; Vohs, Mead, & Goode, 2006). We suggest that petty behavior harms communal-sharing relationships by signaling the kind of transactionality associated with market-pricing relationships—even when that behavior is objectively generous.

We operationalize pettiness in two distinct ways. First, we vary whether amounts exchanged are round (e.g., \$10 or 60 minutes) or precise (e.g., \$10.01 or 56 minutes): given that units like cents and minutes are less consequential than dollars and hours, we suggest—and

demonstrate—that observing someone making a decision about minor units is likely to feel more trivial. Furthermore, because round amounts are often used in an approximation context, precise amounts are regarded as more intentional than round amounts (Jansen & Pollmann, 2001; Mason, Lee, Wiley, & Ames, 2013); as a result, precise numbers capture the elements of both triviality and intentionality central to our definition of pettiness. Second, we manipulate pettiness via actions that communicate an intention to track details (e.g., setting a timer when giving advice), independent of whether the amounts exchanged are round or precise. By doing so, we demonstrate that pettiness is not only about precise amounts, but instead is a broader construct that encompasses a range of behaviors that, through intentional attention to trivial details, signal the transactionality typifying exchange relationships. Across seven studies, we demonstrate that petty exchanges negatively impact communal-sharing relationships by making those relationships feel more transactional.

### **Study 1: The Unique Role of Pettiness**

Study 1 investigated the role of petty behaviors in existing romantic relationships. We recruited individuals who had been in a relationship for more than a month and asked a series of questions about themselves and their significant others. To conceptually differentiate pettiness from related constructs, we also assessed generosity (i.e., someone who behaves prosocially; Dunn, Aknin, & Norton, 2008), fastidiousness (i.e., someone who likes order and organization; Samuel, Riddell, Lynam, Miller, & Widiger, 2012), and conscientiousness (i.e., someone who is dependable and responsible; Barrick & Mount, 1991). We predicted that pettiness would exert a (negative) influence on relationship satisfaction, independent of the effect of related constructs such as generosity, fastidiousness, and conscientiousness.

### **Method**

**Participants.** Two hundred and six participants from Amazon's Mechanical Turk (53.2% Male;  $M_{age}=32.47$ ,  $SD=8.96$ ) who had been in a relationship for more than a month completed this study.

**Design and procedure.** Only participants who indicated "Yes" to the following question were allowed to proceed with the rest of the survey: "Do you currently have a romantic partner whom you've been dating for at least a month?" We assessed how much participants engaged in specific petty behaviors themselves ("self-pettiness") and how much their partners engaged in those specific behaviors ("partner-pettiness"), across four different scenarios. Participants also answered questions about how generous their partners were ("generosity") and how much their partners counted minutes and cents ("pettiness") both regarding money and time. These measures were administered in random order.

*Self-pettiness and Partner-pettiness.* For the self-pettiness measure, participants indicated how much they agreed with the following statements: "I tend to 1) track our bills down to the last cent (e.g., groceries, meals), 2) track who paid for what when we go out for dinner or entertainment, 3) notice when I'm late down to the last minute, and 4) track whose turn is it to do household (or other relationship-related) responsibilities (e.g., taking out the trash, planning dates)" (1=*Strongly disagree*; 7=*Strongly agree*;  $\alpha=.79$ ). For the partner-pettiness measure, participants answered the same set of questions about their partner (i.e., "My partner tends to...";  $\alpha=.83$ ).

*Generosity.* The generosity measure included the following four items about how generously their partner spent money and time on both other people and themselves: "When it comes to spending [money/time] on [others/you], how generous is your partner?" (1=*Not at all*; 7=*Very much*;  $\alpha=.79$ ).

*Pettiness.* The pettiness measure included the following four items about their partners' behavior toward other people and themselves: "When spending resources like money on [others/you], how much does your partner tend to count dollars and cents?" and "When spending resources like time on [others/you], how much does your partner tend to minutes and seconds?" (1=*Not at all*; 7=*Very much*;  $\alpha=.83$ ).

*Relationship satisfaction.* Participants also rated their relationship satisfaction by indicating the extent to which they agreed with each of the following seven questions (adapted from Hendrick, 1988): 1) My partner meets my needs very well, 2) In general, I am very satisfied with my relationship, 3) There are many problems in this relationship (reverse-coded), 4) I want our relationship to last for a very long time, 5) I am committed to maintaining my relationship with my partner, 6) I would not feel very upset if our relationship were to end in the near future (reverse-coded), and 7) It is likely that I will date someone other than my partner within the next year (reverse-coded) (1=*Strongly disagree*; 7=*Strongly agree*;  $\alpha=.88$ ).

We also assessed how much participants viewed their partners as conscientious and fastidious. For the conscientiousness measure (John & Srivastava, 1999), participants indicated the extent to which they agreed or disagreed with the following statements: My partner is someone who 1) does a thorough job, 2) can be somewhat careless (reverse-coded), 3) is a reliable worker, 4) tends to be disorganized (reverse-coded), 5) tends to be lazy (reverse-coded), 5) perseveres until the task is finished, 6) does things efficiently, 7) makes plans and follows through with them, and 8) is easily distracted (reverse-coded) (1=*Strongly disagree*; 7=*Strongly agree*;  $\alpha=.91$ ). For the fastidiousness measure (Samuel et al., 2012), participants indicated how much they agreed with the following statements: My partner 1) checks things more often than necessary, 2) gets upset if objects are not arranged properly, 3) feels compelled to count while

she/he is doing things, 4) repeatedly checks doors, windows, drawers, etc., 5) gets upset if others change the way he/she has arranged things, 6) repeatedly checks gas and water taps and light switches after turning them off, and 7) needs things to be arranged in a particular order (1=*Strongly disagree*; 7=*Strongly agree*;  $\alpha=.92$ ).

Participants also indicated their gender and age, their partner's gender and age, relationship status (1=*Just began going on dates*, 2=*Casually dating*, 3=*Seriously dating*, 4=*Engaged*, 5=*Married*) and relationship length (1=*Less than a month*, 2=*1-6 months*, 3=*7-12 months*, 4=*1-2 years*, 5=*More than 2 years*). For this and all subsequent studies, informed consent was obtained from all participants, and the Institutional Review Board of our university reviewed and approved all materials and procedures. Stimuli and data are available at [osf.io/wqmu5](https://osf.io/wqmu5).

## Results

Including the self-pettiness and partner-pettiness measures simultaneously into a regression predicting relationship satisfaction revealed that both partner-pettiness and self-pettiness predicted relationship satisfaction: specifically, participants were significantly more dissatisfied with their relationship when their partners engaged in petty behaviors ( $b=-.23$ ,  $SE=.06$ ,  $p<.001$ ) and also when they themselves engaged in petty behaviors ( $b=-.13$ ,  $SE=.06$ ,  $p=.04$ ). There was not an interaction between self- and partner-pettiness ( $b=.05$ ,  $SE=.04$ ,  $p=.14$ ).

We next regressed relationship satisfaction on pettiness, generosity, fastidiousness, and conscientiousness. All four constructs independently predicted relationship quality: pettiness and fastidiousness were associated with reduced relationship satisfaction (pettiness:  $b=-.11$ ,  $SE=.05$ ,  $p=.01$ ; fastidiousness:  $b=-.22$ ,  $SE=.04$ ,  $p<.001$ ), while generosity and conscientiousness were positively associated with relationship satisfaction (generosity:  $b=.25$ ,  $SE=.05$ ,  $p<.001$ ;

conscientiousness:  $b=.39$ ,  $SE=.05$ ,  $p<.001$ ; Table 1). See Supplemental Materials for additional regression analyses.

**Table 1.** Regression results for Study 1 comparing pettiness to related constructs.

<b>DV: Relationship satisfaction</b>	(1)	(2)	(3)	(4)
Pettiness	-.33*** (.05)	-.26*** (.05)	-0.11** (0.05)	-0.09* (0.04)
Generosity		.40*** (06)	0.25*** (0.05)	0.23*** (0.05)
Fastidiousness			-.22*** (.04)	-.22*** (.04)
Conscientiousness			.39*** (.05)	.37*** (.05)
Relationship length				-0.02 (0.06)
Relationship status				0.19** (0.06)
Constant	6.94*** (.18)	4.62*** (.40)	3.51*** (.38)	2.97*** (.45)
R <sup>2</sup>	.18	.32	.54	.57
* $p<0.05$ ; ** $p<0.01$ ; *** $p<0.001$ Standard errors in parentheses.				

### Studies 2A and 2B: Being Petty with Money

The correlational results of Study 1 are of course open to a number of alternative explanations, such as that low relationship satisfaction increases petty behavior. As a result, we turned to experimental methodology. Studies 2A and 2B examined the impact of pettiness in exchanges regarding money. We recruited users of Venmo and Paypal, two online money exchange platforms, and operationalized pettiness by varying whether the amount exchanged was round or precise. Study 2A asked participants to evaluate either communal-sharing exchanges (e.g., using these services to pay money owed to a friend) or market-pricing exchanges (e.g., using the services to pay money owed to a company; Fiske, 1992). Because

market-pricing exchanges are transactional in nature—consumers expect exact change from retailers, not a rough approximation of what they are owed—we expected petty behaviors to have more harmful consequences in communal-sharing exchanges, where such attention to detail sends a negative signal. Building on Study 2A’s findings, Study 2B directly tested our proposed mediator—perceived transactionality—and assessed counter-normativity and fastidiousness as alternative explanations for the effect of pettiness on liking.

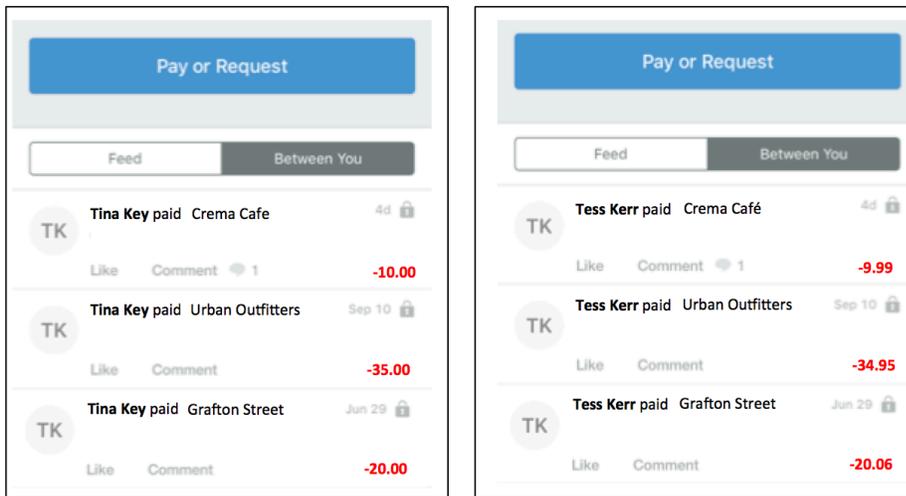
### **Study 2A Method**

**Participants.** One hundred and two participants with Venmo or PayPal accounts (41% male;  $M_{age}=23.68$ ,  $SD=4.08$ ) from a university in the Northeast completed this study. The sample size for this study was based on previous experiments on exchange of resources (e.g., Heyman & Ariely, 2004). For this and subsequent studies, we targeted recruitment of at least 50 participants per condition so that the studies would have 80% power to detect an effect with an estimated effect size ( $w$  or  $d$ ) of 0.3.

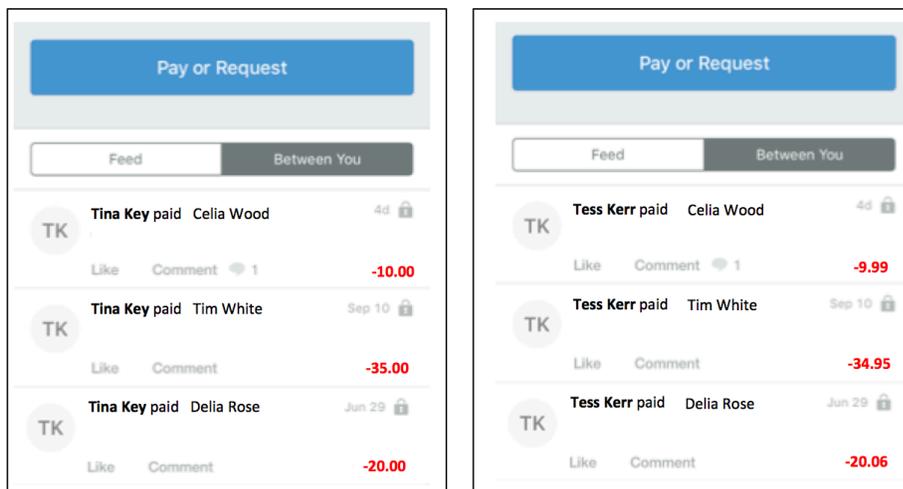
**Design and procedure.** Participants were randomized into one of two conditions: market-pricing versus communal-sharing. In both conditions, participants were presented with transaction histories for an individual who paid precise amounts and another individual who paid round amounts. Specifically, participants in the market-pricing condition saw that one giver paid three different companies in round amounts (\$10, \$35, and \$20), whereas another giver paid these companies in precise amounts (\$9.99, \$34.95, and \$20.06). In contrast, those in the communal-sharing condition saw that the two givers paid round or precise amounts to three different people (Fig 1). Note that in both conditions, the total amount exchanged is \$65. All participants then selected the individual with whom they would rather be friends.

**Figure 1.** Study 2A stimuli for (a) market-pricing condition (b) communal-sharing condition.

a)



b)



## Results

Participants in the communal-sharing and market-pricing conditions had different preferences for the individual with whom they preferred to be friends,  $\chi^2(1, N=102)=10.71$ ,  $p=.001$ , Cramér's  $V=.32$ . In the market-pricing condition, participants were evenly split between preferring to be friends with the individual paying round amounts (50%) or precise amounts (50%),  $\chi^2(1, N=50)<.001$ ,  $p=1.00$ ,  $w<0.001$ . In contrast, the vast majority of participants in the communal-sharing condition preferred to be friends with the non-petty actors: the actor paying

round amounts (81%),  $\chi^2(1, N=52)=19.69, p<.001, w=.62$ . Moreover, while the choice between the two actors was at chance in the market-pricing condition, petty behavior toward other people led participants to prefer the non-petty actor in the communal-sharing condition.

## **Study 2B**

Study 2A established that petty behaviors have a negative impact in communal-sharing exchanges. Building on this finding, Study 2B accomplished two goals. First, we investigated why petty behaviors in communal-sharing exchanges reduce relationship quality. We predicted that precise payments in communal-sharing contexts may signal that the sender is treating the relationship as transactional (see Fiske 1991, 1992), akin to exchanges occurring in market-pricing contexts. We therefore assessed perceived transactionality as a mediating mechanism underlying the negative impact of pettiness. Second, we addressed additional alternative explanations. Beyond transactionality, petty behaviors may be disliked in communal-sharing exchanges because they are more counter-normative. To address this explanation, Study 2B compared both non-petty and petty communal-sharing exchanges to a new condition describing a market-pricing transaction that is equally as counter-normative: someone who transfers precise amounts to his/her own bank account. We measured counter-normativity and also perceived fastidiousness (as in Study 1) as potential additional mediators.

## **Study 2B Method**

**Participants.** One hundred and forty-eight participants with Venmo or PayPal accounts (48.6% male;  $M_{age}=30.34, SD=7.32$ ) from Amazon's mTurk completed this study. We required participants to be Venmo users. To verify that they held Venmo accounts, we required them to complete a filter question in the beginning (See Appendix A). Only those who answered the question correctly were able to proceed.

**Design and procedure.** Participants were divided into one of three conditions: non-petty communal-sharing, petty communal-sharing, and market-pricing. All participants were informed: “Today, you will be viewing two study participants’ receipts from Venmo, a site that allows you to pay and receive money to your family and friends electronically. Venmo also allows its users to transfer their remaining balance to personal bank accounts. Below are their receipts.”

In the non-petty communal-sharing condition, participants were presented with transaction histories for “Participant A” and “Participant B”; both of their histories indicated that they paid round amounts to three other individuals. Participants in the petty communal-sharing condition also saw transaction histories for Participants A and B; while Participant A’s history indicated that he/she paid round amounts to three other individuals, Participant B’s history indicated that he/she paid precise amounts to three other individuals. Finally, participants in the market-pricing condition saw transaction histories for Participants A and B. Similar to the other two conditions, Participant A’s history indicated the he/she paid round amounts to three other individuals; Participant B’s history indicated that he/she had transferred precise amounts to his/her own bank accounts (Appendix B). We intended the latter two conditions to be equally counter-normative, and to vary only whether the exchange is communal-sharing or market-pricing.

Participants then answered a series of questions in which they compared Participants A and B. As a manipulation check, participants responded to the question, “Which participant is more petty?” (-5=*Participant A*; 0=*Neither*; 5=*Participant B*). Participants also rated whom they like more (-5=*Participant A*; 0=*I like them equally*; 5=*Participant B*).

We also measured transactionality, fastidiousness, and counter-normativity as mediators. More specifically, we asked them four questions assessing transactionality (adapted from Shore

et al., 2006): 1) Which participant's action feels more transactional?; 2) Which participant's action feels more like a strictly economic decision?; 3) Which participant's action feels more like a business transaction?; and 4) Which participant's action feels more impersonal? (-5=Participant A; 0=Neither of them; 5=Participant B;  $\alpha=.76$ ). We also assessed the same seven measures from Study 1 for fastidiousness: participants rated whom they thought was more likely to engage in each fastidious behavior (e.g., "checks things more often than necessary";  $\alpha=.95$ ). Finally, participants rated how counter-normative they thought each participant was (1=Not at all; 7=Extremely).

### **Study 2B Results.**

*Pettiness.* A one-way ANOVA revealed a significant impact of condition on pettiness perceptions,  $F(2, 145)=16.88, p<.001, \eta_p^2=.19$ . As intended, compared to those in the non-petty communal-sharing condition ( $M=.09, SD=1.25$ ), participants in the petty communal-sharing ( $M=2.43, SD=2.39; t(99)=-6.03, p<.001$ ) and market-pricing ( $M=1.19, SD=2.18.19; t(92)=-3.02, p<.01$ ) conditions thought that Participant B was more petty than Participant A. Furthermore, compared to participants in the market-pricing condition, participants in the petty communal-sharing condition viewed Participant B as more petty than Participant A,  $t(99)=2.69, p=.01$ .

*Liking.* There was a similar pattern for liking,  $F(2, 145)=6.73, p<.01, \eta_p^2=.09$ . Specifically, compared to the non-petty communal-sharing condition ( $M=.04, SD=1.20$ ), liking for Participant B was significantly lower amongst participants in the petty communal-sharing condition ( $M=-1.31, SD=2.30; t(99)=3.64, p<.001$ ) and marginally lower for the market-pricing condition ( $M=-.51, SD=1.89; t(92)=1.70, p=.09$ ). Liking for Participant B was marginally lower in the petty communal-sharing condition than in the market-pricing condition,  $t(99)=-1.95, p=.06$ . In other words, liking for Participant B was the lowest when his/her transaction history

involved petty exchanges with individuals.

*Perceived transactionality.* A one-way ANOVA using perceived transactionality as the dependent measure revealed a significant impact of condition,  $F(2, 145)=29.63, p<.001, \eta_p^2=.29$ . Compared to those in the non-petty communal-sharing condition ( $M=.07, SD=.84$ ), participants viewed Participant B as more transactional than Participant A in the petty communal-sharing condition ( $M=2.35, SD=1.83; t(99)=-7.84, p<.001$ ) and in the market-pricing condition ( $M=1.73, SD=1.65; t(92)=-6.17, p<.001$ ). Perceived transactionality was marginally higher in the petty communal-sharing condition than in the market-pricing condition,  $t(99)=1.78, p=.08$ .

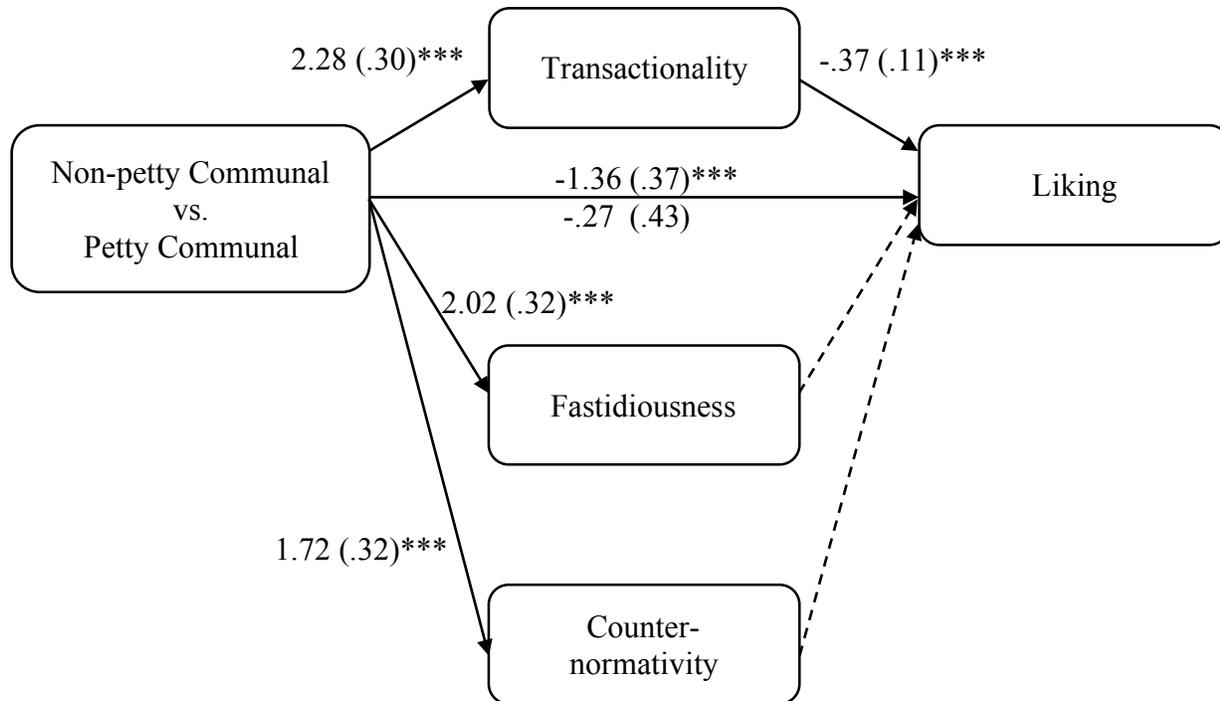
*Counter-normativity.* We conducted two one-way ANOVAs using ratings for Participant A and for Participant B as the dependent measures. First, participants did not differ in how counter-normative they found Participant A's actions,  $F(2, 144)=.96, p=.69, \eta_p^2=.01$ . This should be the case, given that participants in all three conditions saw the same transaction history for Participant A. However, there was a difference in how counter-normative participants perceived Participant B's actions to be,  $F(2, 145)=14.55, p<.001, \eta_p^2=.17$ . Specifically, compared to participants in the non-petty communal-sharing condition ( $M=2.30, SD=1.57$ ), those in the petty communal-sharing ( $M=4.02, SD=1.62; t(99)=-5.40, p<.001$ ) and the market-pricing ( $M=3.49, SD=1.68; t(92)=-3.55, p<.01$ ) conditions viewed Participant B's actions to be significantly more counter-normative. The two latter two conditions did not differ,  $t(99)=1.61, p=.11$ , suggesting that perceptions of deviance from norms did not vary whether precise amounts were exchanged in a communal-sharing or a market-pricing context.

*Fastidiousness.* The same analysis revealed a significant impact of condition on perceived fastidiousness,  $F(2, 145)=20.77, p<.001, \eta_p^2=.22$ . Compared to those in the non-petty communal-sharing condition ( $M=.10, SD=.58$ ), participants viewed Participant B as more

fastidious than Participant A in the petty communal-sharing condition ( $M=2.12$ ,  $SD=1.96$ ;  $t(99)=-6.82$ ,  $p<.001$ ) and in the market-pricing condition ( $M=1.61$ ,  $SD=1.87$ ;  $t(92)=-5.30$ ,  $p<.001$ ). Perceived fastidiousness did not differ amongst the two petty conditions,  $t(99)=1.34$ ,  $p=.19$ .

*Mediation.* We conducted a multi-categorical mediation analysis to test whether our proposed psychological driver—perceived transactionality—uniquely drove the relationship between petty behaviors and liking. We used indicator coding with the non-petty communal-sharing condition as the reference group, and simultaneously entered transactionality, fastidiousness, and counter-normativity as three competing mediators. A 5,000 sample bootstrap analysis showed that the 95% bias-corrected confidence interval for the size of the indirect effect excluded zero for the difference between the non-petty communal-sharing condition and the petty communal-sharing condition ( $[-1.65, -.13]$ ) and for the difference between the non-petty communal-sharing condition and the market-pricing condition ( $[-1.25, -.13]$ ) for transactionality, suggesting a significant indirect effect (Preacher & Hayes, 2004), but not for fastidiousness (non-petty communal-sharing vs. petty communal-sharing: 95% CI= $[-1.17, .12]$ ; non-petty communal-sharing vs. market-pricing: 95% CI= $[-.87, .09]$ ) and counter-normativity (non-petty communal-sharing vs. petty communal-sharing: 95% CI= $[-.12, .58]$ ; non-petty communal-sharing vs. market-pricing: 95% CI= $[-.07, .45]$ ). Transactionality also mediated the difference in liking between the two petty conditions (95% CI= $[.01, .72]$ ). This result suggests that petty behaviors are associated with greater transactionality, and in turn, reduced liking, in communal-sharing contexts compared to market-pricing contexts. In sum, these findings suggest that transactionality—but not fastidiousness and counter-normativity—explain the negative impact of pettiness on liking. (See Figure 2).

**Figure 2.** The indirect effect of petty exchange on liking through perceived transactionality, comparing the non-petty communal-sharing condition to the petty communal-sharing condition.



*Note:* Beta coefficients (standard errors in parentheses). The coefficient above the path from non-petty communal-sharing vs. petty communal-sharing to liking represents the total effect with no mediator in the regression model; the coefficient below the path represents the direct effect when the mediator was inserted in the regression model. Dotted lines indicate no significant relationship.

### Study 3: Being Petty with Time

In addition to money, time is another resource that individuals frequently spend on one another (Mogilner, Chance, & Norton, 2012). Rather than operationalizing pettiness by the precision of the amount given (with precision being one facet of our definition of pettiness), Study 3 operationalized pettiness via a behavior that directly signals intentional attention to details (with intentionality being a second facet of our definition): imposing a timer to precisely monitor the amount of time spent. We expected that the very act of setting a timer would signal

pettiness and lead individuals to behave less positively toward this petty actor. In addition, Study 3 again assessed perceived transactionality as a mediating mechanism underlying the negative impact of pettiness.

## Method

**Participants.** Three hundred and twelve participants (49% male;  $M_{age}=35.7$ ,  $SD=11.4$ ) were recruited from Amazon's Mechanical Turk.

**Design and procedure.** The study was a two-condition, between-subjects design: petty versus non-petty. All participants were informed that they would interact with a partner throughout the experiment. After creating a username for this purpose, participants then waited for 25 seconds to receive their match. After they were ostensibly matched with a partner, they were informed: "In this next part of this study, we will assign one of you to be the 'advice giver' and another to be the 'advice receiver.' The 'advice giver' may be asked to give advice to the 'advice receiver' about how to best use Mechanical Turk." They then waited for 10 seconds to learn which role they would be taking.

All participants were informed that they received the role of the advice giver. They were further informed: "In the past, we have asked advice givers to spend one minute to complete the task. The average completion time, however, has been 58 seconds, meaning that some participants do not spend the full 60 seconds to do the task. Your partner has also been informed about this fact." If they were assigned to the non-petty condition, they learned, "To make sure you spend 60 seconds, we will be using a timer if you are chosen to complete this task"; if they were assigned to the petty condition, they learned: "To make sure you spend 60 seconds, your partner has specifically requested that we use a timer if you are chosen to complete this task." In other words, everyone was informed that they would be timed, but the party imposing this timer

varied by condition: their partners (the petty condition) or the researchers (the non-petty condition).

Participants then completed a task that involved splitting positive and negative tasks between themselves and their partners (Gray, Ward, & Norton, 2014). Specifically, they read: “We have four tasks that we would like you and your partner to complete. There are two ‘fun’ tasks (reading humorous pieces and rating them) and two ‘boring’ tasks (identifying all vowels in foreign texts). We are asking you to assign your partner which two tasks he/she should complete. Your decision will be confidential; that is, your partner will not know that you are the one that had decided which tasks he/she would be completing. Any remaining tasks will be completed by you. For example, if you assign your partner 2 fun tasks, you will be completing 2 boring tasks.” They then indicated their allocation decision. Participants also answered four questions about their partner: 1) how much they liked their partner (1=*Not at all*; 10=*Extremely*), 2) how generous they thought their partner was (1=*Not at all generous*; 10=*Extremely generous*), 3) what their overall impression of their partner was (1=*Extremely negative*; 10=*Extremely positive*), and 4) how annoying they thought their partner was (1=*Not at all annoying*; 10=*Extremely annoying*). We averaged these items into a composite liking score ( $\alpha=.82$ ) with reverse coding on the annoyance item.

We also included four measures assessing perceived transactionality (adapted from Shore et al., 2006): 1) To what extent the giver’s action felt like a business transaction, 2) how transactional the giver was in choosing how to act, 3) how much the giver’s action felt like strictly an economic one, and 4) how much the giver’s action felt impersonal (1=*Not at all*; 10=*Very much*;  $\alpha=.93$ ). As a manipulation check, participants rated how petty they thought their partner was (1=*Not at all petty*; 10=*Extremely petty*).

## Results

As intended, participants in the petty condition (i.e., a timer imposed by their partners) rated their partners to be significantly more petty than those in the non-petty condition (a timer imposed by the experimenter ( $M_{petty}=4.63$ ,  $SD=2.96$  versus  $M_{non-petty}=2.82$ ,  $SD=2.23$ ),  $t(310)=-6.07$ ,  $p<.001$ ,  $d=.69$ ).

Importantly, participants in the petty condition liked their partners less ( $M_{petty}=5.38$ ,  $SD=1.81$  versus  $M_{non-petty}=6.35$ ,  $SD=1.15$ ),  $t(310)=5.57$ ,  $p<.001$ ,  $d=.99$ , and assigned their partners more boring tasks compared to those in the non-petty condition ( $M_{petty}=1.35$ ,  $SD=.58$  versus  $M_{non-petty}=1.18$ ,  $SD=.64$ ),  $t(310)=-2.48$ ,  $p=.01$ ,  $d=-.28$ . Furthermore, they found their partners to be more transactional ( $M_{petty}=6.01$ ,  $SD=2.52$  versus  $M_{non-petty}=4.72$ ,  $SD=2.47$ ),  $t(310)=-4.56$ ,  $p<.001$ ,  $d=.52$ .

**Mediation.** Conducting a 5000-sample bootstrap analysis revealed that perceived transactionality mediates the relationship between pettiness and liking. The 95% bias-corrected confidence interval for the size of the indirect effect excluded zero (95% confidence interval: [-.36, -.09]), suggesting a significant indirect effect (Preacher & Hayes, 2004). Furthermore, perceived transactionality and liking serially mediated the relationship between pettiness and task assignment (95% confidence interval: [.06, .18]).

### Study 4: Can People Be Both Petty and Generous?

Study 4 investigated whether petty individuals are penalized even when they are objectively more generous. We recruited individuals who were single to assess a potential date based on how their romantic prospect offered to give their time. We predicted that being petty with time—in this case, offering more precise meeting times—would diminish interest in meeting with their romantic prospect. Most importantly, we tested whether objectively more

generous but petty behavior—i.e., giving more time but in a precise amount—could be perceived as worse than giving objectively less time but in a non-petty manner.

## Method

**Participants.** Two hundred thirty participants whose marital status was single (51% male;  $M_{age}=30.1$ ,  $SD=10.16$ ) were recruited from Amazon's Mechanical Turk.

**Design and procedure.** The study was a three-condition, between-participants design, in which participants learned about a romantic prospect who offered to help someone else from 1:00 pm until 2:56 pm (stingy-petty), 3:04 pm (generous-petty), or 3:00 pm (non-petty). At the beginning of the survey, participants responded to a few demographic questions, one of which included a question about marital status; only those who indicated that they were single proceeded to complete the study.

Participants were informed: “We are marketing researchers from a dating website, MatchActually.com. MatchActually.com, currently in its beta-testing mode, uses a novel matching system. Specifically, all users will be asked to respond to a few, randomly selected scenarios to find its users a perfect match. Today, you will be viewing a profile of someone in your area. For us to find you a good match, please fill out the form below.” In addition to indicating their 5-digit zip code, which gender they prefer to be matched with, and what their profile ID would be, participants also responded to various questions typically asked on a dating website. These questions included: 1) “My self-summary (Write a little about yourself),” 2) “What I am doing with my life (Don't over think; Tell us what you are doing, day to day),” 3) “If you could, which superpower would you have?,” and 4) “If you could meet anyone in this world, who would it be?” To increase realism, we also asked for their contact information, depending

on how they wanted to be contacted (i.e., phone, email, or mTurk messaging), in case there was a match.

After waiting for 12 seconds while a match was being ostensibly generated, participants viewed one of three profiles. These profiles were matched based on information participants provided about their own gender and gender preferences for their partner, such that if a male or female participant was looking for a male partner, the profile indicated that their match, Samuel\_0426, was looking for single men or women, respectively; similarly, if a male or female participant was looking for a female partner, the profile indicated that their match, Samantha\_0426, was looking for single men or women, respectively.

The profile included personal details about the match we generated for participants, including responses to the following target scenario (Figure 3): “Your friend is moving to a new home this Saturday and needs some help with moving large pieces of furniture. He/she texts you, asking if you are free to help. What would you text back?” For those in the stingy-petty condition, the match had indicated “I can help for 1 hour and 56 minutes—from 1 pm to 2:56 pm,” while those in the generous-petty condition saw that their match had indicated two hours and four minutes—from 1 pm to 3:04 pm. Finally, those in the non-petty condition saw that their match had indicated two hours—from 1 pm to 3:00 pm.

Our primary variable of interest was participants’ willingness to go on a date with their match. They indicated “yes” or “no,” and were told that we would contact them if their match also expressed interest.

## **Results**

We conducted a logistic regression to examine whether willingness to date the target varied as a function of pettiness. To do so, we used the non-petty condition as the reference

group by creating two dummy-coded variables (one variable with the stingy-petty condition coded as 1 and the other conditions coded as 0; the other with the generous-petty condition coded as 1 and the other conditions coded as 0), and included them as simultaneous predictors in the regression analysis. This analysis revealed that willingness to date in the two petty conditions differed significantly from those in the non-petty condition. Participants in the stingy-petty condition were less willing to date the match (44.7%) compared to those in the non-petty condition (62.3%),  $B=.68$ , Wald  $\chi^2=4.32$ ,  $p=.04$ , odds ratio=1.98. Most importantly for our account, those in the generous-petty condition (44.2%) approved their match at a lower rate than those in the non-petty condition,  $B=.71$ , Wald  $\chi^2=4.65$ ,  $p=.03$ , odds ratio=2.02, despite the fact that the (petty) 3:04 match indicated that they would spend objectively more time helping their friend.

**Figure 3.** One of the images used in Study 4.



### Study 5: Pettiness across Cultures

In addition to providing additional evidence that petty behaviors can undermine objectively generous behaviors, Study 5 aimed to demonstrate the robustness of the petty construct across different cultures. We chose to compare Americans to people from Germanic regions based on previous research showing that the latter group tend to be less tolerant of ambiguity, increasing the likelihood that they value precise settling of debts (Hofstede, 1984). If people from Germanic regions continue to rate petty behavior poorly, these results would offer support for the robustness of the negative impact of pettiness across cultures.

#### Methods

**Participants.** Using an online survey panel from Qualtrics, we surveyed participants from the U.S. and Germanic regions (Austria, Germany, and Switzerland;  $N_{U.S.}=450$ ;  $N_{Germanic}=420$ ). We first targeted participants from Germanic regions (Austria, Germany, or Switzerland). Then, we recruited participants from the U.S., matching the sample based on participants' gender, age, and household income.

**Design and procedure.** Participants were randomly assigned to one of two conditions: non-petty or petty. Participants in each condition read about four non-petty or petty actors respectively. To increase generalizability, the scenarios varied in terms of actor identity and the resource being exchanged. Actors in all four petty scenarios offered an objectively more generous amount than the actors in the corresponding non-petty scenarios. Our primary dependent measure was the extent to which participants wanted to be friends with the focal actor.

Participants who were in the non-petty [petty] condition saw the following four scenarios.

1. Last week, you helped your neighbor with moving large pieces of furniture. As a thank you, the neighbor e-mails you a gift card to a local café, which contains the following value: \$5.00 [\$5.15].
2. Last weekend, you drove a friend to a wedding 30 minutes away. During the middle of the trip, you pull into the gas station that lists the following prices: Regular: \$3.09; Premium: \$3.29. As you pull into the gas station, your friend says: “Thanks for driving me over—I’ll get this. Does regular work?” [Does premium work? This way, it will come out to be about the same amount as if I had taken a round trip bus ride].”
3. Your former college roommate works as an interior designer. You are hoping to redesign your living room so you email to ask her if she has some time to chat this weekend. She emails you back the following: “I will be happy to help! I can chat this Saturday from 3:00pm to 3:30pm [3:12pm to 3:53pm].”
4. At your work, you are part of a program in which you and your designated mentor meet once a week. This week, you and your mentor meet for half an hour, but you have more questions. In response to your question on whether he would be willing to stay for a little longer, he says the following: “Sure, I can stay for 10 [13] more minutes.”

Note, Germanic participants saw the above dollar amounts in their currency (e.g., \$5.00 to €5.00 or CHF5.00).

For each scenario, participants were asked to indicate how much they wanted to be close friends with the focal actor (1=*Not at all*; 10=*Very much*). As a manipulation check, participants also rated how petty they thought the focal actor was in each scenario (1=*Not at all*; 10=*Extremely*). (See Supplemental Materials for additional measures and analyses.)

## Results

As predicted, a repeated measures ANOVA with pettiness as a between-subjects factor and scenarios as a within-subjects factor revealed that across four scenarios, participants in the petty condition ( $M=5.02$ ,  $SD=2.28$ ) rated the givers to be significantly more petty than those in the non-petty condition ( $M=3.90$ ,  $SD=2.31$ ),  $F(854)=1074.39$ ,  $p<.001$ ,  $\eta_p^2=.06$ . The same analysis revealed that those in the petty condition ( $M=5.49$ ,  $SD=1.91$ ) expressed a significantly lower desire to be friends with the giver than those in the non-petty condition ( $M=5.87$ ,  $SD=1.92$ ),  $F(854)=124.54$ ,  $p<.01$ ,  $\eta_p^2=.01$ .

Moreover, these patterns persisted across cultures. There were no significant interactions between condition and culture (American vs. Germanic),  $F(852)=.33$ ,  $p=.57$ ,  $\eta_p^2<.001$ , and the negative impact of pettiness on liking persisted across both cultures,  $F(852)=8.16$ ,  $p=.004$ ,  $\eta_p^2=.01$ . In other words, despite previously documented cultural differences in relationship norms and outcomes, we found evidence that petty behavior in communal-sharing exchange is viewed uniformly negatively.

These findings further support our account that generosity and pettiness are distinct across cultural contexts: individuals can be objectively more generous, but still be perceived as petty—and therefore unlikable.

### **Study 6: The Moderating Role of Intentionality**

To further demonstrate the critical role of intentionality in attributions of pettiness, Study 6 tested whether providing an alternative reason behind petty behaviors could mitigate the negative impact of pettiness. As in Studies 2B and 3, we hypothesized that when people infer that actors are being intentionally petty (giving a gift card where they took time to indicate they wished to give precisely \$13.50), they would perceive the relationship as more transactional, negatively affecting the relationship. However, we expected that providing an alternative reason

for a seemingly-petty decision—a decision aid that offers giving that same petty amount (\$13.50) as an option—would make choosing a petty option seem less intentional, mitigating the negative impact of pettiness on interpersonal evaluations.

## Method

**Participants.** Three hundred and one participants (49.3% female;  $M_{age}=38.2$ ,  $SD=13.06$ ) were recruited from Amazon's Mechanical Turk.

**Design and procedure.** Participants were randomized into one of three conditions: 1) non-petty non-intentional, 2) petty non-intentional, and 3) petty intentional. Participants in the non-petty [petty] condition read that they received a gift card of \$10 [\$13.50] from their neighbor Jamie in return for a favor: helping to move large pieces of furniture. Participants then read the following: “You go onto the café's website, and find the following information for purchasing gift cards online. Jamie could choose one of the options or select an amount of his choice.” Those in the two non-intentional conditions saw \$10, \$13.50, and \$15 as options, such that Jamie's choice of \$10 or \$13.50 could be attributed at least in part to the website's payment options rather than Jamie's intention (Figure 4). However, those in the petty intentional condition saw only \$10 and \$15 as options, such that Jamie would have had to intentionally enter the value of \$13.50.

Participants then answered the same four questions from Study 1 about Jamie—liking, generous, overall impression, and annoying (reverse-coded)—in random order, which we averaged into a composite liking score ( $\alpha=.88$ ). We also included in random order the same measure of perceived transactionality as in Study 3, adapted to a gift card scenario (e.g., “To what extent does this gift card feel like a business transaction?”;  $\alpha=.88$ ). As a manipulation check, participants rated Jamie on pettiness. All measures were on 10-point Likert scales.

**Figure 4.** Images used in Study 6 for the (a) intentional and (b) non-intentional conditions.

a) b)

“You go onto the café’s website, and find the following information for purchasing gift cards online. Jamie could choose one of the default options or select an amount of his choice.”

Select a value or enter an amount.

\*USD \$

“You go onto the café’s website, and find the following information for purchasing gift cards online. Jamie could choose one of the default options or select an amount of his choice.”

Select a value or enter an amount.

\*USD \$

## Results

*Pettiness.* A one-way ANOVA revealed a significant impact of condition on perceived pettiness of the giver’s behavior,  $F(2, 298)=8.73, p<.001, \eta_p^2=.06$ . As expected, participants in the petty intentional condition perceived the giver as significantly more petty ( $M=4.37, SD=2.72$ ) than those in the non-petty non-intentional condition ( $M=2.83, SD=2.49$ ),  $t(198)=-4.19, p<.001, d=.60$ , as well as those in the petty non-intentional condition ( $M=3.46, SD=2.66$ ),  $t(198)=-2.41, p=.02, d=.34$ . In other words, rerouting the giver’s intentionality made the giver’s action seem less petty. Pettiness ratings for the non-petty non-intentional condition were marginally lower than those for the petty non-intentional condition,  $t(200)=-1.72, p=.09, d=.24$ .

*Liking.* A one-way ANOVA using liking as the dependent variable revealed a significant impact of condition,  $F(2, 298)=4.89, p=.01, \eta_p^2=.03$ . Specifically, participants in the petty intentional condition liked the giver less ( $M=6.05, SD=1.84$ ) than those in the non-petty non-intentional condition ( $M=6.82, SD=1.68$ ),  $t(198)=3.08, p=.002, d=.44$ , and, importantly, than those in the petty non-intentional condition ( $M=6.68, SD=2.02$ ),  $t(198)=2.32, p=.02, d=.33$ . The two latter conditions did not differ,  $t(200)=.30, p=.51, d=.07$ . Simply put, the negative impact of pettiness (in this context, giving a gift card of \$13.50) on liking was mitigated when participants learned that \$13.50 was one of the options that the giver could choose.

*Perceived Transactionality.* The same analysis revealed a significant impact of condition on perceived transactionality,  $F(2, 298)=14.93, p<.001, \eta_p^2=.09$ . Participants in the petty intentional condition perceived the giver to be significantly more transactional ( $M=5.19, SD=2.41$ ) than those in the non-petty non-intentional condition ( $M=3.45, SD=2.02$ ),  $t(198)=-5.53, p<.001, d=.79$  and also than those in the petty non-intentional condition ( $M=4.13, SD=2.34$ ),  $t(198)=3.15, p<.01, d=.45$ . Perceived transactionality was higher in the petty non-intentional condition than the non-petty non-intentional condition,  $t(200)=-2.21, p=.03, d=.31$ .

*Mediation.* To provide additional evidence for our proposed process account, we conducted a multi-categorical mediation analysis using indicator coding with the non-petty non-intentional condition as the reference group. A 5,000 sample bootstrap analysis showed that the 95% bias-corrected confidence interval for the size of the indirect effect excludes zero for the difference between the non-petty non-intentional condition and the petty intentional condition (95% CI=[-.89, -.38]), as well as for the difference between the non-petty non-intentional condition and the petty non-intentional condition (95% CI=[-.48, -.03]), suggesting a significant indirect effect (Preacher & Hayes, 2004). Transactionality also mediated the difference in liking between the two petty conditions (95% CI=[-.63, -.15]). This result suggests that petty behaviors with intentionality are associated with greater transactionality compared to the same behaviors without intentionality and, in turn, with lower liking.

### **General Discussion**

Seven studies identify a novel exchange norm in social exchanges: pettiness negatively influence communal-sharing relationships, across different measures—from liking to romantic interest to willingness to engage in altruistic behaviors—and different cultures. Critically, we demonstrate that pettiness is a distinct construct from generosity or stinginess: even when people

gave objectively larger or smaller amounts of money or time, doing so in a petty manner exerted an independent negative effect on relationships. We also documented an underlying mechanism: intentional petty exchanges in communal-sharing relationships led people to perceive that behavior as more transactional, undermining relationships. Finally, we also show that while other related constructs such as conscientiousness and fastidiousness do predict people's ratings of others, they do not play a mediating role in the effect of pettiness on social evaluation.

Our investigation offers several directions for future research. First, while we have identified one way to preempt the negative impact of petty exchange, there may be instances in which petty behaviors may boost relationship quality. For example, imbuing trivial details with significant meaning (e.g., giving a gift card of 33 dollars to a friend for her 33<sup>rd</sup> birthday) or making clear one's underlying thought motivating the behavior could make attention to details feel less transactional. Second, there may be situations in which choosing not to be petty can backfire; for example, non-petty actions may in some instances lead people to infer carelessness and untrustworthiness. Furthermore, as an increasing number of individuals become familiar with digital payment platforms, attitudes about petty exchanges may shift over time, such that what may be considered as petty by many today may, in the future, be considered normative. As a result, generational differences in attitudes toward petty exchanges may begin to emerge—though we note that across our studies, age of participants does not play a moderating role ( $p > .19$ ). In sum, future research should explore different factors that may influence the success and failure of social exchange, expanding our understanding of exchange dynamics.

We note that conscientiousness is associated with higher relationship satisfaction both for people who are conscientious themselves and those who have conscientious partners (Dyrenforth, Kashy, Donnellan, & Lucas, 2010; Malouff, Thorsteinsson, Schutte, Bhullar, &

Rooke, 2010), consistent with our results from Study 1. While attention to detail is typical of individuals high in conscientiousness, our results suggest that these often-positive behaviors can have negative effects when such attention is applied to trivial details in social exchanges (e.g., keeping track of the exact amount spent on a date), reflective of people's general preference to exclude market-pricing transactions from everyday relationships (Kozinets, 2002).

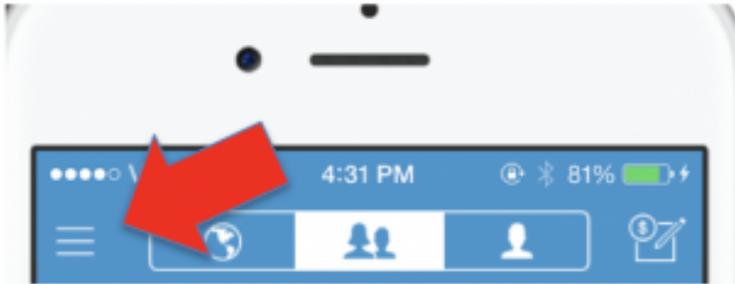
Finally, prior research has demonstrated that introducing money into social exchange can reduce people's generosity (Heyman & Ariely, 2004) and cause them to be more resistant to egalitarian allocation of resources (DeVoe & Iyengar, 2010). Although these results suggest that excluding money from communal-sharing relationships may offer one way to preserve them, the modern economy makes it nearly impossible to eliminate money in any relationships, communal-sharing or market-pricing—a trend exacerbated by the rise of new online payment services, as noted earlier. While being generous with money offers one means to reduce the negative impact of finance on friendship, our results suggest a different and subtle danger for communal-sharing relationships: inferring pettiness from a partner's attention to trivial details can transform individuals' perception of a relationship into a transactional one even when money is given generously. In sum, when expending resources on others, givers should monitor not only how much they exchange, but the manner in which they exchange it.

**Authors' note**

This idea originated while the first two authors were organizing a baby shower for a colleague. We had suggested contributing between \$5 and \$10, and as we began receiving contributions from many of our friends and colleagues, a contribution from one particular individual—who had Venmo'ed us \$7.50—caught our attention. We wondered both what led him to choose this amount, and then wondered why we were questioning his contribution when he was objectively more generous than several others who contributed only \$5. This research is part of our broader research program examining social norms, implicit social contracts, and resource exchanges in the digital age, where the norms and rules for social interactions are rapidly changing.

**Appendix A****Filter question for Study 2B**

For us to make sure that you are actually a Venmo user, please log into your Venmo account. Please log in and click on the menu icon (where the red arrow is pointing).



Which of the following **does not** appear on this menu? (*correct answer: C*)

- a) Invite Friends
- b) Purchases
- c) Frequently Asked Questions
- d) Settings
- e) Transfer to Bank



## References

- Abramowitz, J. S., Deacon, B. J., Olatunji, B. O., Wheaton, M. G., Berman, N. C., Losardo, D., & Björgvinsson, T. (2010). Assessment of obsessive-compulsive symptom dimensions: Development and evaluation of the Dimensional Obsessive-Compulsive Scale. *Psychological Assessment, 22*(1), 180-198.
- Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: a meta-analysis. *Personnel Psychology, 44*(1), 1-26.
- Belk, R. W. (1976). It's the thought that counts: A signed digraph analysis of gift-giving. *Journal of Consumer Research, 3*(3), 155-162.
- Caplow, T. (1982). Christmas gifts and kin networks. *American Sociological Review, 38*(3), 383-392.
- Clark, M. S., & Mils, J. (1993). The difference between communal and exchange relationships: What it is and is not. *Personality and Social Psychology Bulletin, 19*(6), 684-691.
- Cotterell, N., Eisenberger, R., & Speicher, H. (1992). Inhibiting effects of reciprocity wariness on interpersonal relationships. *Journal of Personality and Social Psychology, 62*(4), 658-668.
- DePaulo, B. M., & Kashy, D. A. (1998). Everyday lies in close and casual relationships. *Journal of Personality and Social Psychology, 74*(1), 63-79.
- DeVoe, S. E., & Iyengar, S. S. (2010). Medium of exchange matters: What's fair for goods is unfair for money. *Psychological Science, 21*(2), 159-162.
- Dunn, E. W., Aknin, L. B., & Norton, M. I. (2008). Spending money on others promotes happiness. *Science, 319*(5870), 1687-1688.
- Dyrenforth, P. S., Kashy, D. A., Donnellan, M. B., & Lucas, R. E. (2010). Predicting relationship and life satisfaction from personality in nationally representative samples from three

- countries: the relative importance of actor, partner, and similarity effects. *Journal of Personality and Social Psychology*, 99(4), 690-702.
- Fiske, A. P. (1992). The four elementary forms of sociality: framework for a unified theory of social relations. *Psychological Review*, 99(4), 689-723.
- Flynn, F. J. (2003). How much should I give and how often? The effects of generosity and frequency of favor exchange on social status and productivity. *Academy of Management Journal*, 46(5), 539-553.
- Flynn, F. J., & Adams, G. S. (2009). Money can't buy love: Asymmetric beliefs about gift price and feelings of appreciation. *Journal of Experimental Social Psychology*, 45(2), 404-409.
- Gneezy, U., & Rustichini, A. (2000). Pay enough or don't pay at all. *The Quarterly Journal of Economics*, 115(3), 791-810.
- Gould, J., & Gould, C. (1989). Sexual Selection. New York. *Scientific American Library*, 173p.
- Gray, K., Ward, A. F., & Norton, M. I. (2014). Paying it forward: Generalized reciprocity and the limits of generosity. *Journal of Experimental Psychology: General*, 143(1), 247-257.
- Hendrick, S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and Family*, 50(1), 93-98.
- Heyman, J., & Ariely, D. (2004). Effort for payment a tale of two markets. *Psychological Science*, 15(11), 787-793.
- Hofstede, G. (1984). *Culture's consequences: International differences in work-related values* (Vol. 5). Beverly Hills, CA: Sage.
- Jansen, C. J., & Pollmann, M. M. (2001). On round numbers: Pragmatic aspects of numerical expressions. *Journal of Quantitative Linguistics*, 8(3), 187-201.

- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of Personality: Theory and Research*, 2(1999), 102-138.
- Kozinets, R. V. (2002). Can consumers escape the market? Emancipatory illuminations from burning man. *Journal of Consumer Research*, 29(1), 20-38.
- Malouff, J. M., Thorsteinsson, E. B., Schutte, N. S., Bhullar, N., & Rooke, S. E. (2010). The five-factor model of personality and relationship satisfaction of intimate partners: A meta-analysis. *Journal of Research in Personality*, 44(1), 124-127.
- Mason, M. F., Lee, A. J., Wiley, E. A., & Ames, D. R. (2013). Precise offers are potent anchors: Conciliatory counteroffers and attributions of knowledge in negotiations. *Journal of Experimental Social Psychology*, 49(4), 759-763.
- Mogilner, C., Chance, Z., & Norton, M.I. (2012) Giving time gives you time. *Psychological Science*, 23(10), 1233-1238.
- Paul, K. (2016). Venmo is Turning Our Friends into Petty Jerks [Electronic Version], from <http://qz.com/687395/venmo-is-turning-our-friends-into-petty-jerks/>
- Samuel, D. B., Riddell, A. D., Lynam, D. R., Miller, J. D., & Widiger, T. A. (2012). A five-factor measure of obsessive-compulsive personality traits. *Journal of Personality Assessment*, 94(5), 456-465.
- Shore, L. M., Tetrick, L. E., Lynch, P., & Barksdale, K. (2006). Social and economic exchange: Construct development and validation. *Journal of Applied Social Psychology*, 36(4), 837-867.
- Vohs, K. D., Mead, N. L., & Goode, M. R. (2006). The psychological consequences of money. *Science*, 314(5802), 1154-1156.