

The Dynamics of Contracts and Generalized Trustworthiness*

Brent Simpson, University of South Carolina

and

Kimmo Eriksson, Mälardalen University

April 2007

About 6,900 words

* This research was supported by grants from the National Science Foundation (SES-0240802 and SES-0551895). We thank Nick Berigan, Alex Hirschfeld, Kyle Irwin, Tucker McGrimmon, and Rachael Russell for research assistance. Direct correspondence to Brent Simpson, Department of Sociology, University of South Carolina, Columbia SC 29205.

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Abstract

Generalized trust, or trust in strangers, has been traced to a wide range of societal benefits. But generalized trust is not sustainable in the absence of widespread generalized trustworthiness, i.e., the tendency for strangers to honor trust extended to them. While there has been an explosion of work on the origins and consequences of generalized trust, surprisingly little research has addressed the antecedents of generalized trustworthiness. We argue that generalized trustworthiness can be traced to prior exposure to a ubiquitous extrinsic motivator of trustworthy behavior, contracts. Specifically, drawing on classic social psychological research on the overjustification effect, we argue that actors previously constrained by contracts will attribute their own “trustworthy” behavior in those interactions to the contract itself. According to overjustification arguments, this misattribution should lead to a decrease in intrinsic motivations to act trustworthy in interactions where the actor is not constrained by the contract. Results of a new experiment support this argument.

The Dynamics of Contracts and Generalized Trustworthiness

Introduction

Trust is essential to social life (Rotter 1980). But it is by no means guaranteed. By definition, trust involves the relinquishing of control over one's own welfare to another person who may have an interest in abusing that trust. *Generalized trust*, or trust in strangers, may be especially problematic, due to the absence of relational constraints on the trustee's behavior. Yet, as many researchers have noted, it is exactly this type trust that leads to broad-scale societal benefits like political and civic engagement (Brehm and Rahn 1997; Sullivan and Transue 1999), economic development (Knack and Keefer 1997), and social order (Putnam 2000). The varied benefits of generalized trust have led to an explosion of research on the topic (e.g., Alesina and La Ferrara 2002; Brehm and Rahn 1997; Cook 2003; Delhey and Newton 2003; Yamagishi and Yamagishi 1994).

But generalized trust is only feasible if there is a high level of *generalized trustworthiness*, the tendency for an actor to honor trust extended by a stranger. As Hardin (2000, 18) puts it, "It is commonly supposed that widespread trust is, loosely speaking, a public or collective good, especially in political life but also more generally in society and in the economy ... This supposition cannot be generally correct. Rather, *generalized trustworthiness* would be collectively beneficial and, then correctly acting on the trustworthiness of others would be beneficial not only to the truster of the moment but also more generally to the society." Interestingly, despite the explosion of research on generalized trust (e.g., Putnam 2000; Stolle 1998; Yamagishi and Yamagishi 1994), surprisingly little research has been directed at understanding its foundation, *generalized trustworthiness*.

What leads to trustworthiness toward strangers? Two general classes of explanations are possible (for reviews, see Kollock 1998; Mulder et al. 2006). The first views actors as *intrinsically motivated* to act in a trustworthy way (e.g., Van Lange 1999). The second addresses *extrinsic motivations* for trustworthy behavior (e.g., Horne 2004).

Perhaps the most common extrinsic motivator of trustworthiness is the use of formal contracts (see Malhotra and Murnighan 2002). For centuries, actors have used contracts to mitigate trust and malfeasance concerns in order to reap the benefits of cooperation. Of course, contracts are not used all the time, and for obvious reasons: Not only can drawing up contracts be time-consuming and costly; they can also be difficult to enforce.

But contracts that are both readily available and easily enforceable can be powerful means to establishing trust and trustworthiness, potentially even creating positive “downstream effects” by leading to a habit or setting a norm of trustworthy behavior in future interactions. However, this conclusion ignores a potential byproduct of even the most carefully deployed contracts: As explained in detail below, they can damage intrinsic motivators of trust and trustworthiness (Bohnet et al. 2001; Malhotra and Murnighan 2002; see also Fehr and Rockenbach 2003; Mulder et al. 2006).

Given the extent to which both corporate and individual parties depend on the use of contracts, we believe it is critical to understand their potential long-term effects. Building on previous work, we ask: what happens when actors historically constrained by (voluntarily imposed) contracts interact outside these constraints? We draw on both classic and contemporary social psychological research on extrinsic and intrinsic motivators to show that the use of contracts damages generalized trustworthiness.

In contrast to previous work, we show that the detrimental effects of contracts do not require that actors make attributions about others' trustworthiness (as in Malhotra and Murnighan 2002). Nor do the effects require us to assume certain levels of heterogeneity of trustworthy types in the population, or that actors have information on others' trustworthiness (as in Bohnet et al. 2001). Instead, we predict how contracts can damage trustworthiness through a simple self-perception (Bem 1972) process. Thus, our work demonstrates how micro-processes (self-perception and the presence of contracts in dyadic interactions) can impact important macro-social outcomes (generalized trustworthiness and, by extension, generalized trust).

The remainder of this paper is organized as follows: We begin with a brief overview of problems of trust and trustworthiness, focusing on how formal mechanisms like contracts circumvent these problems. We then turn to the literature on intrinsic and extrinsic motivations, and discuss closely related work on the effects of contracts on various issues related to trust and trustworthiness. Building directly on this work, we outline a simple argument about the dynamic effects of contracts on intrinsic motivations. We then introduce a simple new experimental study to test our key prediction. The results strongly support the argument. We conclude with a discussion of implications and directions for future work.

Why Study Trust and Trustworthiness?

Social and economic settings giving rise to questions of trust have two features in common (Rousseau et al. 1998: 395). First, there is some level of interdependence, such that the goals or interests of an actor cannot be realized without relying on another. Second, there exists uncertainty. As Dasgupta (1988) put it, uncertainty creates an opportunity for a test of trust (see also Kollock 1994). Trust, then, is defined as “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another”

(Rousseau et al. 1998: 395). Trustworthiness, in turn, is defined as positive intentions or behavior, i.e., one acts trustworthy if one does not abuse trust even when there exists an incentive to do so (see, e.g., Hardin 2002). Generalized trust and generalized trustworthiness apply to trust in and trustworthiness toward strangers.

As noted earlier, an explosion of research has focused on generalized trust. But generalized trust is not viable without generalized trustworthiness (Hardin 2000). This is because, if actors continually abuse trust (i.e., if untrustworthiness prevails), generalized trust does not pay. The question thus becomes: what leads to generalized trustworthiness?

Explaining Generalized Trustworthiness

To put the question into perspective, note that in one-shot interactions between strangers, the standard prediction from rational egoist models is that trustees will abuse trust at any opportunity. Further, trusters will anticipate this abuse. Thus, no trust will be extended. (In game-theoretic parlance, not trusting is the subgame perfect Nash equilibrium.) This prediction is problematic because much research shows that trust is often extended and, when trust is extended, it is often honored. That is, strangers often engage in both trusting and trustworthy behaviors in one shot interactions. The question is why?

Because much trustworthy behavior happens in the absence of formal institutions such as contracts, we can assume that a substantial number of actors are intrinsically motivated to be trustworthy toward strangers at least some of the time. (By extension, because trusting behavior happens in the absence of formal institutions, we can assume that a substantial number of trusters anticipate this trustworthiness.) Yet the widespread use of formal institutions (such as contracts and sanctioning systems) that create extrinsic incentives shows us that intrinsic motivators may not always be sufficient to motivate generalized trust and trustworthiness.

Can Contracts Damage Trustworthiness?

As noted earlier, contracts are arguably the most ubiquitous means for creating extrinsic motivations for “trust” and “trustworthy” behavior.¹ But because interactants typically cannot foresee all possible contingencies, most contracts are incomplete (Bohnet et al. 2001; Rousseau 1995) and, as a result, difficult to enforce.

It seems to follow from the above that complete (and easily enforceable) contracts can provide a substitute for generalized trustworthiness. But not only is this substitute for generalized trustworthiness short-term: classic social psychological work on the *overjustification effect* (e.g., Deci 1971; Greene, Sternberg and Lepper 1976) suggests that these formal institutions may backfire, leading to a reduction in intrinsic trust and trustworthiness over time. Overjustification occurs when an actor who is intrinsically motivated to perform a given act receives a reward for performing it and/or a punishment for not performing it. Through a self-perception process (Bem 1972), the actor attributes his or her action to the conspicuous extrinsic motivator (reward or punishment). As a result, his or her intrinsic motivation to perform the act decreases. Overjustification effects have been documented for a wide array of phenomena (for a review, see Deci et al. 1999).

An overjustification approach shows why contracts can produce unintended effects. At the most basic level, the *use* of contracts can vary over time, either within given relations (exchange partners may use contracts for one type exchange but not another), or across relations (a person may be constrained by a contract in exchanges with one partner, but not others). Recent empirical work shows that these type dynamics can have important effects on trust and trustworthiness. For instance, results from an experimental study by Bohnet et al. (2001)

¹ We recognize that living up to a contract is not “trust” or “trustworthiness.” Instead, (complete) contracts serve as substitutes for these things. Our use of these terms in this context is for brevity.

suggests that the level of trust and trustworthiness in a given interaction depends on the previous history of contract types, such that contracts with lower historical enforceability predict higher current trustworthiness in subsequent interactions with different partners. Similarly, Malhotra and Murnighan (2002) showed that the removal of contracts in a given relationship can have deleterious effects on *trust* in that particular relationship.

We are interested specifically in how the use of complete contracts in a given relation affects behavior outside that relation, specifically generalized trustworthiness. We show that contracts have important dynamic effects that occur through a much simpler process than has been demonstrated in previous work. Specifically, in contrast to Bohnet et al. (2001), we show that the negative effects of contracts do not depend on having heterogeneity in the level of trustworthiness in the population. Most importantly, the negative effects of contracts need not depend on actors having information about others' prior behaviors (as in both Bohnet et al. 2001, and Malhotra and Murnighan 2002). Instead, we predict that a *self-perception process* can lead to reduced generalized trustworthiness among actors voluntarily constrained by contracts in prior interactions.²

More generally, we extend previous work in a number of ways. First, while the primary focus of most of the laboratory work has been on the detrimental impact of contracts (Malhotra and Murnighan 2002) or other types of structural solutions (Mulder et al. 2006) on *trust*, we address the effects of structural solutions on trustworthiness, i.e., to honor extended trust.

² Our theoretical focus and empirical work differs from these previous studies in other important ways as well. For instance, Malhotra and Murnighan (2002) study changes in trust within relations (i.e., specific trust), whereas we study the impact of trustworthiness across relations (i.e., generalized trustworthiness). Furthermore, Bohnet et al.'s (2001) primary question is how various types of contracts impact trust and trustworthiness. Meanwhile, we are simply interested in the presence of complete contracts versus no contracts on generalized trustworthiness. Additionally, whereas Bohnet et al. impose some type of contract on *all* interactions, we address the impact of voluntarily entered contractual agreements. Finally, in contrast to both these studies, our work does not assume that actors have any information about others' prior behaviors.

Moreover, whereas most previous research has focused on the effects of structural solutions on behavior vis-à-vis *a given interaction partner*, we focus on the impact of contracts on *generalized trustworthiness*, or trustworthiness toward new, one-shot, interaction partners.

Our application of the overjustification effect to the problem of generalized trustworthiness is straightforward. As noted earlier, a wide range of studies show that, in the absence of structural solutions or extrinsic motivators, trustworthiness is much higher than would be expected from rational egoist models. Following others (Fehr and Fischbacher 2005), we interpret this result as evidence of substantial intrinsic motivators of trustworthiness. These intrinsic motivations could include altruism (Batson and Shaw 1991), other-regarding emotions (Frank 1988), fairness concerns (Rabin 1993), or a range of other motivations (for a review, see Dovidio et al. 2006).

Whatever the source of these intrinsic motivators of trustworthiness, we argue that extrinsic motivations for “trustworthy” behavior will erode them. Specifically, we expect that actors who voluntarily enter into binding contracts that require “fair” or “trustworthy” behaviors will make external attributions for their trustworthiness. Then, once the contract is removed, these external attributions will lead to untrustworthy behavior. That is, actors will attribute their own trustworthy behavior to the contracts. When the perceived basis for their trustworthy behavior is no longer present, they will act in a less trustworthy way than they would have had their behaviors never been subject to external controls. Thus, we predict negative downstream effects of contracts on generalized trustworthiness:

- *Hypothesis 1a*: Contracts decrease generalized trustworthiness. That is, actors governed by contracts in previous interactions will be less trustworthy in subsequent interactions not governed by contracts than will actors not previously governed by contracts.

We test Hypothesis 1a against an alternative argument: As suggested earlier, contracts may establish “norms or “habits” of trustworthy behavior that will be carried on to subsequent interactions. According to this line of reasoning, repeated exposure to contracts will provide evidence that fair behavior can benefit both trusters and trustees. As a result, the effect of contracts may lead to sustained or positive, rather than negative, downstream effects:

- *Hypothesis 1b*: Contracts establish habits of trustworthy behavior that persist in subsequent interactions with different partners not governed by contracts. That is, actors governed by contracts in previous interactions will be at least as trustworthy in subsequent interactions not governed by contracts as actors not previously governed by contracts.

The experiment outlined in the section to follow offers a test of these competing predictions.

Design

Participants were recruited from introductory classrooms at a large Southeastern University using the opportunity to earn money as an incentive. A total of 68 students (40 females) participated. There was a single between-subjects factor: whether or not binding contracts governed early interactions.³

Settings and Procedures

Participants were scheduled in groups of ten to twelve. Upon entering the laboratory, each participant was escorted to a private subject room. After completing consent forms, they were given instructions (see below), which ensured them that they would not see other participants at any point during or after the study, and that participants would be identified only via letters (e.g., “Person A”). Although participants were told that they would interact with other persons in

³ We also included a third condition on “non-binding contracts” but this is not the focus of the current work. We therefore do not report the results from this third condition.

surrounding subject stations and adjoining rooms, in reality, the choices of others were simulated.

Trustworthiness Measure

After reading and signing consent forms, participants were given instructions (see Appendix A). The experimental instructions began by stating that there would be two roles in the study: *Investor* (truster) and *Receiver* (trustee). (At no point during the study did the instructions use loaded terms such as “trust,” “truster,” “trustworthiness,” etc.) The instructions stated further that the participant had been randomly assigned to the role of “Receiver.” In reality, all participants acted as receivers. The instructions then proceeded to explain the “investment scenarios” in which the participant would be involved.

Our measure of trustworthiness is based on the investment game developed by Berg et al. (1995). Since its introduction, the procedure has become one of the most widely used behavioral measures of trust and trustworthiness. The game involves two players, an Investor (truster) and a Receiver (trustee). In our implementation of the game, the Investor (always a fictitious other) was given \$10. The Investor ostensibly had to decide whether to invest the \$10 in the Receiver (always a participant), or keep the \$10. (Because the ostensible investor’s decision was binary, it resembles the investor’s decision in the trust game [Dasgupta 1988]. The investment game is structurally similar to the trust game but both the investor’s [truster’s] and receiver’s [trustee’s] are continuous rather than binary.)

If the ostensible other did not invest, he or she would have kept the \$10 and the Receiver (participant) would have earned nothing. If the Investor did invest (which, for this study, was always the case), the \$10 was tripled. Thus, the participant received \$30. The participant then had to decide how much of the \$30, if any, to return to the Investor. The instructions stated that,

following an investment, the participant could return any amount, from \$0 to \$30. Any amount not returned was the participant's payoff for that particular investment scenario. Unlike the initial investment, the amount returned was not subject to a multiplier. Thus, for example, imagine that following an investment, the participant decided to return \$12. In this case, the ostensible Investor would have earned \$12 and the Receiver (participant) would have kept the remaining \$18, or $\$30 - \12 .

The instructions informed participants that they would make decisions in several investment scenarios, always as a Receiver. We emphasized that each decision would be made with a *different* Investor, and underscored this point by assigning unique participant labels to each Investor with whom the participant ostensibly interacted. (As explained below, participants were told that their payment would be determined by their actions, and the actions of the person with whom they were paired for one of the investment-scenarios.) Following the instructions, participants completed a "quiz," designed to ensure that they understood the instructions. Thereafter, research assistants explained any misunderstanding or confusion. Once the research assistant was certain the participant fully understood the procedure, he or she presented the participant with the materials for the first investment scenario.

Contracts and Control Conditions

The experimental instructions differed according to whether initial investment-scenarios were governed by binding contracts. Specifically, instructions for participants in the contracts condition stated that, prior to investing, the Investor for a given decision scenario would be allowed to propose a "contract" to the participant. A contract was an agreement by the Investor to invest the \$10 if the participant agreed to return a specified amount of the resultant \$30 back to the Investor. (The return amount was specified by the Investor in the proposed contract.)

Proposed contracts were non-negotiable and binding: Receivers could either accept the terms of the contract (i.e., return the amount required by the proposed contract and keep the remaining amount), or decline the contract. If the participant declined the contract, no investment took place. Thus, the ostensible Investor kept the \$10 and the participant received nothing for that investment scenario. Contracts lasted for only one investment scenario. Ostensible Investors in the contracts condition proposed contracts in each of the first two investment scenarios.

Removal of Contracts

Although the participants were not told the exact number of investment scenarios for which they would make a decision, all participants were involved in a sequence of three investment scenarios. Following the second investment scenario, participants in the contracts condition received instructions stating that the rules would change slightly.⁴ Thereafter, for the third investment scenario, participants in the contracts condition made decisions without the possibility of contracts. Thus, as explained more fully below, participants in the two conditions faced identical problems in the third (which was, unbeknownst to participants, the final) investment scenario.

Dependent Measure

Our dependent measure is trustworthiness, measured by the amount returned in the investment game (from 0 to 30), in the third investment scenario. As explained earlier, we expect that trustworthiness will be lower in the contracts condition than the control condition. In order to develop a fair test of this hypothesis, we need to ensure that the only difference between the control and contract conditions is the presence of the contract proposed by the Investor in the

⁴ To decrease the chances that the rule change would be a surprise to participants in these conditions, the instructions read by all participants at the beginning of the study (Appendix A) stated that the rules may change later in the study.

earlier investment scenarios. The question thus becomes how much should the contract stipulate the Receiver (participant) return in the Investor?

Contract Content

To answer this question, we needed to anticipate the average amount that would be returned in the absence of contracts. Previous research (e.g., Glaeser et al. 2000) suggests that trustees return, on average, half the resulting endowment. Thus, we started the study by setting the return amounts requested in the contracts at \$15 (out of \$30).⁵ As we amassed data for the two conditions, we tracked return amounts for the control condition to make sure they did, in fact, average \$15. As small deviations from \$15 began to emerge in the control condition, we “yoked” return amounts from that condition to use as inputs (return amount requests) for the contracts condition. (Thus, while the majority of the contracts proposed a \$15 return, we also included other values based on return amounts from the control condition.) As a result, as explained below, we have nearly identical average return amounts in the first two investment scenarios of the two conditions. Thus, we should be able to attribute any differences in return amounts in the final investment scenarios of the two conditions to the presence of contracts in prior interactions of the contracts condition.

Payment and Debriefing

Following related work (e.g., Malhotra and Murnighan 2002), the instructions explained that, at the end of the study, one scenario would be picked randomly and that the participant would be paid according to his or her actions (and the actions of the investor) for that scenario.

⁵ Besides being the modal return amount in a number of previous studies, there are additional advantages to setting the return amount in contracts at ½ the resulting endowment. For instance, the amount is likely to be seen by Receivers as fairer than other “obvious” amounts (e.g., \$20). As a result, the amount should be less likely to create a backlash against contracts after they are removed. One-half therefore provides a more conservative test of our hypotheses than alternative values (e.g., \$20).

The instructions emphasized that, because the participant's pay could be determined by any given scenario, it was important that they consider each decision very carefully. At the end of the study, all participants were paid \$15 (the amount each would be paid if they agreed to the contract when contracts were permitted) and extensively debriefed. The entire procedure took approximately 45 minutes.⁶

Results

Descriptive Statistics: As mentioned above, only one participant turned down a contract in one of the first two investment scenarios of the contracts condition. This participant was offered a contract with a return request of \$20 in the first and second investment scenarios and refused the contract for the second decision scenario. Because we are interested in the effects of contracts on behavior, we exclude data from this participant. (Note, however, that our substantive conclusions are virtually identical if we include this participant's data.) Table 1 gives average return amounts for each of the three decisions for the remaining participants.

{Table 1 about here.}

As can be seen in Table 1, the manipulation of return amounts was successful: average return amounts for the first two investment scenarios (i.e., when contracts were present in the contracts condition) are very similar across the two conditions. The question is what happens when we remove binding contracts? More specifically, is generalized trustworthiness lower for

⁶ We have nearly double the number of participants in the contract ($N = 44$), compared to the control ($N = 24$) condition. This happened for two reasons. First, as explained above, midway into data collection, we needed to yoke information (return amounts for decisions one and two) from the control condition. This allowed us to equate the means across the first two decision scenarios of the treatment and control conditions. Second, and more importantly, we assumed a significant number of participants would reject contracts, which would have reduced the number of usable data points in the contracts condition relative to the control. Thus, we assigned a greater number of participants to the contracts than the control condition. But, as explained below, only one participant (out of 44) rejected a contract. Thus, running more participants in the contract versus control condition turned out to be an unnecessary precaution and led to a larger-than-expected cell size for that condition.

actors previously subject to contracts (as suggested by Hypothesis 1a) or do contracts establish “habits” of trustworthy behavior that persist in subsequent interactions with different partners (Hypothesis 1b)?

Table 1 shows that the average return amount in the third investment scenario is lower in the contract condition (11.37) than the control condition (15.54). Thus, on the surface, these descriptive statistics seem to support our primary hypothesis (Hypothesis 1a). We now turn to statistical analyses designed to assess the effects of contracts on trustworthiness, net of relevant controls.

Analytic Methods and Control Variables

As stated earlier, our dependent variable is trustworthiness (amount returned) in the final (third) round. Our main predictor variable is condition (contracts versus control). We control for the average amount returned in the first two rounds. Findings from the literature on gender and cooperation (Buchan et al. *Forthcoming*; Kuwabara 2006; Simpson 2003) sometimes reveal gender differences in phenomena like trust, trustworthiness, and cooperation. But preliminary analyses showed no effect of gender on decisions. Thus, we exclude gender from further consideration.⁷

The results of our main analysis are given in Table 2. First, note that the control variable (the average amount returned in the first two rounds) is highly significant, $p < .001$. This effect is not surprising: It primarily stems from the fact that participants in the control condition who returned more in earlier rounds also returned more in latter rounds. For instance, looking only at decisions

⁷ More detailed analyses that include controls for gender are available upon request. We also conducted analyses that included an interaction term (contract \times average return amounts for decisions 1 and 2). However, given that participants in the contract condition did not select their return amounts, whereas those in the control condition did, this interaction term is not theoretically meaningful. In any case, below we discuss how earlier return amounts affect return amounts in the third decision scenario for the control condition, but not for the contracts condition.

in the control conditions, the average return amount variable strongly predicts the return amount in the final decision, $p < .001$. Note, however, that we do not observe the same positive effects of contracted return amounts on trustworthiness. For the contract conditions, contract values in investment scenarios 1 and 2 do not predict the return amount in the final decision, $p = .36$.

Most importantly for our purposes, net of these effects of earlier decisions, condition significantly impacts generalized trustworthiness, $p < .005$. That is, participants in the contracts condition returned significantly less in interactions in which they were no longer bound by contracts than did participants in the control condition, who were never bound by contracts. This supports our main hypothesis (Hypothesis 1a) about the negative effects of contracts on generalized trustworthiness. The findings do not support the competing hypothesis, i.e., that contracts establish habits or norms, such that trustworthiness remains high in interactions subsequent to the contract.

Discussion

The results of the experiment just outlined support our argument linking prior exposure to contracts to a decrease in generalized trustworthiness. In contrast to previous work (Bohnet et al. 2001; Malhotra and Murnighan 2002), participants in our study were not given information about others' prior behaviors. Thus, our results could not have been generated from attributions (correct or not) about others' previous levels of trust or trustworthiness. Instead, following work on the overjustification effect (Deci et al. 1999) we have argued that the effects occur through a *self-attribution* process. Of course, such self-attributions can only be demonstrated indirectly: we did not directly measure whether participants in the contracts condition attributed their behavior to the extrinsic motivator and thus gave lower amounts when these contracts were removed. The reason is that actors are typically unaware of the negative effects of extrinsic motivators on their

own (or others') behavior (see, e.g., Gneezy and Rustichini 2000). This is precisely the reason that extrinsic motivators such as contracts have unintended effects.

There are a number of implications of our work for the development of trust and trustworthiness. For instance, as noted by Bohnet et al. (2001), the use of contracts may be the source of cross national differences in trusting and trustworthy behavior. For instance, Yamagishi and colleagues (e.g., Yamagishi and Yamagishi 1994) have shown that, compared to Americans, Japanese tend to be less trusting of strangers. Yamagishi and his colleagues trace these differences to the greater prevalence of informal monitoring and sanctioning systems that result from Japanese social networks and organizations. These informal institutions create extrinsic motivations for trust and trustworthy behavior but, arguably, inhibit the development of trust and trustworthiness when actors operate outside the monitoring and sanctioning system. It remains to be demonstrated whether these effects occur through a self-perception process, as suggested by the overjustification argument presented above. In any case, an important question for future research is whether the levels of generalized trust and generalized trustworthiness in a given society can be traced to variation in the use of contracts and other extrinsic motivators.

Conclusion

This paper addresses whether the use of contracts can create unintended “downstream” effects on generalized trustworthiness. As noted earlier, this question is important because generalized trustworthiness is necessary for the development of generalized trust and previous work shows that groups and societies high in generalized trust benefit in a number of ways. Yet very little research has addressed the origins of generalized trustworthiness. This paper traces generalized trustworthiness to prior exposure to contracts.

The results of our simple experiment support the basic argument linking the use of contracts to a subsequent reduction in generalized trustworthiness. In so doing, it echoes findings from previous work on the unintended byproducts of “top down” solutions to problems of trust and cooperation (e.g., Bohnet et al. 2001; Fehr and Rockenbach 2003; Malhotra and Murnighan 2002; Mulder et al. 2006). Extrinsic motivators can overcome important hurdles to collectively beneficial outcomes. But there now exists much evidence (including the findings presenting in this paper) that extrinsic motivators may backfire. An important goal for future work is thus to better understand how actors who employ or enforce extrinsic motivators might anticipate and thus prevent these negative byproducts.

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Table 1: Average Return Amounts (out of 30) in Contracts ($N = 43$) and Control ($N = 24$) Conditions. (Standard deviations are in parentheses.)

Item	Investment Scenario 1	Investment Scenario 2	Investment Scenario 3
Contracts	15.79 (1.73)	15.79 (1.73)	11.37 (5.18)
Control	15.63 (6.41)	16.04 (6.11)	15.54 (7.50)

Table 2: Unstandardized Coefficients from the Regression of Return Amount in Final Investment Scenario on Condition (Contracts versus Control) and Previous Return Amounts (Average Return Amounts for Decisions 1 and 2).

Independent Variable	Coef. (S.E.)
Contract (coded 1)	-4.131(1.331)*
Previous Return Amounts	.824(.172)**

Note: * < .005; ** < .001. All tests are two-tailed.

Appendix A: General Instructions for Investments and Contracts

We are interested in how people make decisions in social situations under conditions of limited information. Thus, you will be given only limited information about the other participants in today's study. Similarly, they will be given only limited information about you.

As explained in more detail below, there are two types of roles in today's study – Investor and Receiver. You have been randomly assigned to the role of Receiver. As a Receiver, you will make several choices in investment-scenarios (explained below). For each of the investment-scenarios, you will be paired with a different participant (Investor) located in a different room. *You will never be paired with the same Investor for more than one investment scenario.*

The basic instructions for the scenarios are as follows: (If, at any point, you have questions, please feel free to ask one of the research assistants.) For each investment-scenario, the Investor will be given a coupon worth \$10. The Investor has two options: Keep the \$10 for himself/herself, or “invest” it with You. If the Investor invests the \$10 with you, it will be tripled. Thus, you will receive \$30. You will decide how much of that \$30 (if any) you wish to return to the Investor. You can send *any* amount back: from nothing (\$0) to everything (\$30).

Thus, the amount of money that you and the Investor receive for a given investment-scenario depends on two factors: 1) whether or not Investor invests the \$10 with you, and 2) if he or she invests, how much of the \$30 you return.

- If Investor does not invest, you receive nothing for that investment-scenario and the Investor receives \$10.

- If the Investor does invest (and thus the \$10 becomes \$30 and is then passed on to you), the amount each of you will receive depends on how much you decide to return. To give a few examples:

- If you returned \$10 to the Investor, the Investor would receive \$10 and you would receive \$20.
- If you returned \$15 to the Investor, the Investor would receive \$15 and you would receive \$15.
- If you returned \$20 to the Investor, the Investor would receive \$20 and you would receive \$10.

{Instructions for the Control Condition Continued: There will be no communication between you and the Investor before you make your decisions. }

{Instructions for the Contracts Condition Continued: Prior to making his or her decision, the Investor will be able to propose a “contract” to you. A contract is an agreement between you and the Investor. A contract states that the Investor will invest the \$10 with you if you send a specified amount (to be determined by the contract) back to the Investor. Note that contracts are non-negotiable and binding. Either you accept and abide by the terms of the agreement (i.e., you

send back the amount the contract requires), or you do not agree to the contract and you earn nothing for that investment-scenario. Note that contracts last for one investment scenario only.

Contracts will work as follows. At the beginning of the investment-scenario, the Investor will be given the opportunity to offer you a contract. A contract states that the Investor will invest the \$10 coupon with you if you agree to send back the amount requested (by the Investor) in the contract. For instance, a contract from an Investor might read: “I will invest the \$10 coupon with you, if you send back half (\$15) of the resulting \$30.” If you sign the contract and send it back to the Investor, the transfer is automatic and the scenario is complete. }

{Both Conditions Continued}

A few more important things to note.

1) After an investment-scenario is complete, *you will not interact with the Investor from that scenario at any other point during or after the study.* You will be paired with a different participant for *every* investment-scenario. That is, you will not be paired with any other participant more than once in today’s study.

{Contract Condition Only} 2) You have been assigned a unique Participant ID. If and when you sign contracts, do not use your name. To maintain confidentiality, use only your Participant ID.

3) You will make decisions in a number of investment-scenarios. Your total payment for today’s study will depend on your decision (and the decision of the Investor) in one of these investment scenarios. Exactly which of the investment-scenarios you will be paid for will be determined randomly. Because your pay (and the pay of those with whom you are paired) may be determined by your decision in any given investment-scenario, it is very important that you consider each scenario very carefully.

4) Finally, for some participants, the rules may change after a given number of investment-scenarios. If you are one of these participants, you will receive follow-up instructions later in the study.