On the Origins of Trust

Blaine G. Robbins

A dissertation

submitted in partial fulfillment of the

requirements for the degree of

Doctor of Philosophy

University of Washington

2014

Reading Committee:

Edgar V. Kiser, Chair

Ross L. Matsueda

Jerald R. Herting

Program Authorized to Offer Degree:

Sociology

University of Washington

Abstract

On the Origins of Trust

Blaine G. Robbins

Chair of the Supervisory Committee:
Professor Edgar V. Kiser
Department of Sociology

Despite decades of interdisciplinary research on trust, issues of conceptualization and measurement remain, which has created a fragmented literature with little consensus about the origins of trust. To address these shortcomings, my project tackles the following questions: What is trust? How do we measure trust? And where does trust come from? I do so by offering a concrete and measurable definition of trust—what I call relational trust—as well as a research design—vignette experiments—that captures its core elements. I decompose the sources of trust into four analytical components: characteristics of the truster, characteristics of the trustee, characteristics of the exchange relationship, and characteristics of the social forces external to or beyond the exchange relationship. From this, I propose a number of novel and pre-existent hypotheses addressing each major source. My secondary goals in this dissertation are to (a) investigate the relationship between political institutions and an alternative microfoundation known as general social trust, and (b) explore if and how general social trust impacts relational

trust. I argue that my new conceptualization, unique research design, and novel propositions identifies foundations of trust that have yet to be observed in the literature.

This project employs two sources of data. First, I collected data from a variety of cross-national public-opinion data sets (including the World Values Survey and the European Values Study) to form a repeated cross-sectional time-series pseudo-panel spanning 30 years (1980 to 2009), 74 countries, and 248 observations. With this data, I employed linear regressions, random-effects models, and fixed-effects models to test hypotheses regarding the relationship between political institutions and general social trust. Second, I administered two novel vignette experiments to two distinct populations of Amazon.com's Mechanical Turk workers (N = 1,276 and N = 1,322) and University of Washington undergraduate students (N = 884 and N = 841). With this data, I employed hierarchical linear regressions and multilevel mixed-effects multiple mediator models to investigate and adjudicate between the four analytical sources of relational trust.

Taken together, the empirical chapters show that trust has varied and numerous foundations. National context in the form of political institutions explains temporal variations in general social trust within *and* across nations. I find that characteristics of a truster (e.g., general social trust and particular social trust), characteristics of a trustee (e.g., perceived competence and motivation), and social forces external to a truster-trustee exchange relationship (e.g., social constraints) all effect relational trust, while weak evidence is detected for characteristics of a truster-trustee exchange relationship (i.e., social identity). I also find that causal attributions and social constraints interact in their influence on relational trust, and that other-praising emotions such as gratitude and admiration serve as plausible mechanisms connecting perceived motivations to relational trust. Overall, perceived motivations and commitment (a characteristic of a trustee) exert the greatest impact on relational trust. These results support the idea that people rely on multiple sources of information within, between, and beyond individuals when forming trust.

TABLE OF CONTENTS

LIST OF FIGURES

Page

Figure Number

LIST OF TABLES

Page

Table Number

ACKNOWLEDGMENTS

I wish to thank a great number of people for their support and companionship during the last nine years. This list includes Jaime 'Idaho' Arambula, Roger Crafts, Jeremy Cram, Erin Dana, April Fernandes, Tim Gehret, Susanna Hansson, Will Henry, Lisa Holder, Alex Nord, Mike Jaeger, Arno Pfaff, Thomas 'Sebby' Sebby, Karen Snedker, Tim Thomas, Ben Wiggins, and Jacob Young. Their humor and friendship always brought a smile to my face. For that I thank you.

I also wish to thank Dana Anderson, Christine Moon, John Moritsugu, and the late Jesse Nolph for stimulating my interest in (social) psychology and Arturo Biblarz, Joanna Gregson, and Dick Jobst for steering me toward sociology in the first place. I also extend gratitude to my then graduate student collaborators and now rising academic (and non-academic) stars: Richard Callahan, Katie Corcoran, Eric Gleave, David Pettinicchio, and Ted Welser. Our collaborations are seamless and fun. Let's keep them going. I also thank Jan Clarke, Liz Collier, Alan Li, Ulrika O'Brien, Wendy Star, and Matt Weatherford for their technical and administrative assistance with the current project as well as others.

For financial and organizational support of much of this work, I wish to thank the National Science Foundation (grant number SES-1330559), the Center for Studies in Demography and Ecology, and the Department of Sociology at the University of Washington. Much of what I completed in this dissertation—and the ideas that came to life—was a direct result of these organizations and institutions.

I have learned a great deal from a number of outstanding scholars including Bob Crutchfield, Gary Hamilton, Darryl Holman, Hyojoung Kim, James Kitts, Margaret Levi, Karl-Dieter Opp, Katherine Stovel, and Michael Taylor. I thank them for their erudition and intellectual insights. For extensive commentary on this dissertation and overall stellar mentorship, I thank Jerald Herting. For endless conversations about research methods and design, the current state of the discipline, and all things non-sociological, I thank Aimée Dechter, Ross Matsueda, and Steven Pfaff. For being there, supporting me, and offering guidance right from the start, I thank Edgar Kiser.

For my immediate and extended family—Kirk Robbins, Stacey Crnich, Aleksandr Robbins, Cecilia Robbins, Lubov Grigoryeva, Sergei Grigoryev, and Evgenya Popova—I owe everything. Their patience and understanding was a place of solace.

I dedicate this dissertation to Kathryn Robbins, Maria Grigoryeva, and Eloise Grigoryeva. They alone know why.

DEDICATION

To Mom, Maria, and Eloise.

CHAPTER 1: INTRODUCTION

Only a few concepts have commanded as much attention across the social and natural sciences as trust, arguably because trust is present in almost every type of social situation. It is found in intimate relationships, among friends and associates, and within families, and is crucial for the cementation and success of economic markets. Married couples expect their respective partners to maintain promises of fidelity, friends depend on one another to keep secrets, children count on their parents to provide warmth and care, and buyers anticipate sellers to provide goods of interest. Without trust, marriages collapse, friendships dissolve, and many economic transactions fail to crystallize. Under these conditions, it is easy see how trust is a lubricant for social interaction and the glue that binds people together; how trust is the foundation of social organization and the backbone of groups and networks.

For these reasons, not only have sociologists (Barber 1983; Bonacich 1973; Coleman 1990; Gambetta 1988; Luhmann 1979) and economists (Greif 1989; Fehr 2009; Landa 1981, 1995) been interested in trust, but political scientists (Hardin 2002; Levi 1998), anthropologists (Ensminger 2000), psychologists (Rotter 1980; Meyer-Lindenberg 2008), administrative scientists (Guseva and Rona-Tas 2001; Ring and van de Ven 1994; Zucker 1986), and biologists (Baumgartner et al. 2008; Zak, Kurzban, and Matzner 2004; Kosfeld, Heinrichs, Zak, Fischbacher and Fehr 2005) have as well.

Because of this cross-disciplinary interest, the research designs used to understand trust are quite diverse: laboratory experiments (Berg, Dickhaut, and McCabe 1995), factorial surveys and vignette experiments (Buskens 1998; Buskens and Weesie 2000), twin-studies (Sturgis et al. 2010; Van Lange, Vinkhuyzen, and Posthuma 2014), functional MRI studies (King-Casas et al. 2005; Kruger et al. 2007), comparative-historical and historical case studies (Huysseune 2003;

Padgen 1998; Sabetti 1996), and international public opinion data (Knack and Keefer 1997; Zak and Knack 2001) have provided great insight into the causes and consequences of trust. All of which point to a broad spectrum of probable causes, ranging from political institutions (Delhey and Newton 2005; Robbins 2011, 2012a) and social networks (Buskens 1998, 2002; Buskens, Raub, and van der Veer 2010) to ethnic homogeneity (Bjørnskov 2008; Glaeser, Laibson, Scheinkman, and Soutter 2000) and discrimination (Alesina and La Ferrara 2002) as well as genetic (Sturgis et al. 2010), neurological (Baumgartner et al. 2008; Bos, Terburg, and Honk 2010; Kosfeld et al. 2005; Zak et al. 2004), and heritable foundations of trust (Algan and Cahuc 2010; Ulsaner 2008).

And since trust is identified as a precondition for normatively desirable social outcomes, it is also cited as an important predictor of economic development (Dincer and Uslaner 2010; Putnam 1993; Tabellini 2010), civic engagement and political action (Brehm and Rahn 1997; Sønderskov 2009, 2011; Zmerli 2010), honesty and civic morality (Letki 2006), social tolerance (Iglič 2010), political consumerism (Neilson and Paxton 2010), institutional effectiveness (Bjørnskov 2010), welfare state expenditures (Bergh and Bjørnskov 2011), attitudes toward democracy (Jamal and Nooruddin 2010), and possibly crime (Lederman, Loayza, and Menéndez 2002; see Robbins and Pettinicchio 2012; Robbins 2013 for exceptions).

Despite this extensive body of work spanning decades and disciplines, the causes and consequences of trust remain uncertain and open to debate. While the diversity of research designs, methodological approaches, modeling procedures, and statistical practices partially account for this uncertainty, recent reviews unanimously suggest that issues of measurement and conceptualization are at the heart of this debate, which centers on questions and concerns about the construct validity of common measures of trust (Fehr 2009; Hardin 2002; Nannestad 2008;

Smith 2010) and the analytical utility of common conceptualizations of trust (Cook, Hardin, and Levi 2005; Hardin 2002).

To explain, sociologists and political scientists frequently use two types of attitudinal survey items to measure trust: one set measures trust as expectations about the general cooperativeness and helpfulness of strangers, what is commonly referred to as general social trust (Fukuyama 1995; Putnam 2000; Uslaner 2002), while the other set measures trust as expectations about the general cooperativeness and helpfulness of known categories of people such as friends and family, what is generally referred to as particular social trust (Freitag and Traunmüller 2009; Glanville and Paxton 2007; Gleave, Robbins, and Kolko 2011; Newton and Zmerli 2011). To measure general social trust, researchers commonly use the binary trust question developed by Rosenberg (1956): *Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people*? And to measure particular social trust, researchers typically use the following Likert-scale items: *I'd like to ask you how much you trust people from various groups (e.g., friends, family, and neighbors). Could you tell me for each whether you trust people from this group completely, somewhat, not very much, or not at all*? Both the general and particular social trust measures are administered in numerous national and cross-national public opinion polls including, but not limited to, the General Social Survey, the European Social Survey, and the World Values Survey. As a consequence, sociology's understanding of trust is largely a function of these two measures.

In spite of their utility and recurrent use, social scientists frequently question the validity of these classic survey items for three reasons (Cook, Hardin, and Levi 2005; Delhey, Newton, and Welzel 2011; Reeskens and Hooghe 2008; Sturgis and Smith 2010; Torpe and Lolle 2011). First, both sets of survey items are known to conflate trust with closely related microfoundations such as risk aversion, trustworthiness, and caution (Fehr 2009; Glaeser, Laibson, Scheinkman, and Soutter 2000; Holm and Danielson 2005; Holm and Nystedt 2008; Miller and Mitamura 2003; Sapienza, Toldra-Simats, and Zingales 2013). That is, a response to the general social trust question might result from a respondent's aversions to risk or from a survey taker's pro-social preferences and not from their beliefs about the cooperativeness of strangers in general.

Second, as Russell Hardin (2002) persuasively argues, common survey items of trust do not show how or why people come to trust (or distrust) certain people to do certain things; instead, they discriminate between people who trust (or distrust) strangers (or known categories of people) with respect to everything and to the same extent across all conditions (this is why "social" is generally inserted between "general" and "trust" as well as "particular" and "trust"). In other words, since classic survey items of trust are unconditional, the matters at hand might include flying a plane, removing a brain tumor, keeping a secret, repairing a car, or lending someone $25,000. With respect to interpretation, then, people who score high on a general social trust question should trust all strangers equally to do each of these matters, or, conversely, people who score low on a particular social trust scale should distrust friends with respect to everything. Unfortunately, without specifying conditions, answers to such questions provide little insight into how trust operates as many situations do not involve people trusting (or distrusting) friends or strangers with respect to everything.

Third, Nisbett and Wilson (1977) noted that people often lack the self-awareness and self-knowledge to understand and identify the sources of their own attitudes, beliefs, and behaviors. As a result, self-reports about prior trusting behavior as well as answers to general and particular social trust questions are susceptible to various response biases, including social desirability bias (i.e., to under-report socially undesirable attitudes and behaviors), recency bias (i.e., to over-report or place greater weight on recent behavior), and self-perception bias (i.e., to over-report personal behavior as an indicator of one's attitudes, beliefs, or preferences). Respondents, in other words, may not know how to answer a general social trust question and instead of reflecting on their own attitudes and beliefs (if they are capable of doing so), provide answers that reflect what they think others believe or what others expect them to believe.

To address these issues, economists have long measured trust—what I term *revealed trust* (to borrow from the *revealed preferences* literature)—by inferring unobserved cognitive-processes like trust from observed behavior (Berg, Dickhaut, and Mccabe 1995; Ermisch, Gambetta, Laurie, Siedler, and Uhrig 2009; Fehr 2009). Economists argue that revealed trust circumvents response biases outlined by Nisbett and Wilson (1977) and provides critical information about the economic stakes and the structural conditions of exchange that go unobserved and unmeasured with conventional survey items. Yet, revealed trust, like attitudinal survey items, conflates trust with any number of unobserved social psychological mechanisms such as risk aversion, reciprocal altruism, and other-regarding preferences (Bohnet and Zeckhauser 2004; Cox 2004; Sapienza, Toldra, and Zingales 2013). And although specifying economic stakes and the structural conditions of exchange in a laboratory experiment are conceptual steps forward, these conditions are rarely found in the real-world and, as a result, have very limited generalizability (see Guala 2012; Levitt and List 2007).

In short, issues of measurement validity plague the trust literature, which exaggerates the already difficult task of identifying the causes and consequences of trust. On top of this, the concept of trust varies to a great extent within *and* between disciplines, with the majority of conceptualizations dependent on *how* a person trusts, *whom* a person trusts, and *what* a person trusts another to do. Because of this variation, conceptualizations of trust often include concepts that should be considered as causes (e.g., values and preferences) or consequences (e.g., perceptions of risk and risk-taking decisions) and not as core features of the trust concept (e.g., perceived motivations). As a result, such theoretical and methodological practices have produced a literature noticeably short on valid claims about the causes and consequences of trust. This is a great error and the goal of this dissertation is to offer a first step in rectifying some of these problems.

Overview

In chapter 2, I review common conceptualizations of trust and propose a cognitive-relational concept based on beliefs, unknown outcomes, trustworthiness, and particular matters—what I, and others (Cook, Hardin, and Levi 2005; Hardin 2002), refer to as *relational trust*. With these core elements, I define relational trust as a *belief about another person's trustworthiness with respect to a particular matter at hand that emerges under conditions of unknown outcomes*, and I define trustworthiness as the capacity *and* motivation of a person to fulfill the goals and desires of another person; where capacity refers to ability and competence, and motivation refers to exertion and commitment. The elements necessary to produce trust can thus be decomposed into the following equation: A (the truster) trusts B (the trustee) when A believes that B is capable *and* motivated to perform matter Y (what A wants B to do) under conditions of unknown outcomes. An outstanding question and a central focus of my dissertation concerns the elements of A, B, and processes internal to and external to the A-B exchange relationship that facilitate or undermine A's beliefs about the trustworthiness of B. For the present dissertation, I primarily focus on a few elements of each and explore how they interrelate; namely, general social trust (element of A), perceived capacity and motivation (elements of B), and social constraints (external to the A-B exchange relationship). Each of these will be explored in later chapters.

In chapter 3, I propose a number of pre-existent and novel hypotheses about the origins of trust. My first set of hypotheses concern the contextual sources of general social trust, with an emphasis on political-institutional social constraints such as legal property rights and power-sharing capacities of the state. Next, building from the social cognition literature, I argue that preexisting general social trust directly informs relational trust. That is, I treat general social trust and relational trust as separate, causally interrelated concepts, where A's beliefs about the general cooperativeness and helpfulness of others (what is commonly referred to as a cognitive schema or stereotype) impacts the specific belief A forms about B's trustworthiness with respect to a particular task or matter. I then outline competing hypotheses concerned with the types of perceived motivations and commitment necessary and/or sufficient for relational trust, which I then follow with novel hypotheses about possible moderating (causal attributions) and mediating (other-praising emotions) effects. Finally, I derive a number of hypotheses from theoretical traditions within sociology and social psychology—social identity theory and status characteristics theory in particular—about the nature of relational trust.

In chapter 4, I investigate the political-institutional foundations of general social trust. I use various cross-national public-opinion data sets and employ pooled time-series OLS regression and fixed- and random-effects estimation techniques on an unbalanced, repeated cross-sectional panel of 74 countries and 248 observations spread over a 30-year time period. With these data and methods, I assess the impact of five political-institutional factors—legal property rights, market regulations, labor market regulations, universality of socioeconomic provisions, and power-sharing capacities—on general social trust. I find that general social trust increases at an increasing rate with the quality of property rights institutions, that labor market regulations increase general social trust, and that power-sharing capacities of the state decrease general social trust. While general social trust increases as the government regulation of credit, business, and economic markets decreases and as the universality of socioeconomic provisions increases, both effects were more sensitive to the countries included and the modeling techniques employed than the other political-institutional factors. In short, the results suggest that political institutions simultaneously promote and undermine general social trust.

In chapter 5, and the remaining chapters, I advance the trust literature by using an alternative method underutilized in the social sciences ideally suited to measuring and operationalizing trust (and the conditions in which people trust) than conventional surveys or behavioral indicators. Multifactorial vignette surveys, or vignette experiments, are hypothetical scenarios that contain precise reference to theoretical factors thought to influence decision-making and cognitive processes of interest (Alves and Rossi 1978; Rossi and Nock 1982), and combine the strong external validity of conventional surveys, which focus on real-life judgments rather than behavior in artificial trust games, with the strong internal validity of laboratory experiments, which randomize, manipulate, and control causal variables rather than observe beliefs and behaviors *ex post*. For my dissertation, I have constructed two hypothetical situations, a 'car repair' scenario and a 'group project' scenario, where respondents assess the trustworthiness of a simulated auto mechanic or group member, respectively. Within each scenario, I included attributes of the simulated actor as well as attributes of the situation. The overall goal is to provide an alternative research design that (a) better assesses and takes into account the key elements of relational trust—beliefs, unknown outcomes, trustworthiness, and the particular matters at hand, (b) investigates trust formation under simulated conditions commonly found in the real-world (as opposed to artificial laboratory conditions rarely observed in the real-world), and (c) is able to test and evaluate the comparative explanatory power of a large number of causal hypotheses in a single study.

Thus, in chapter 5, with this design I explore the notion that when people form beliefs about the trustworthiness of others with respect to particular matters (i.e., when individuals trust), they rely on stereotypes regarding the cooperativeness of individuals and organizations in general (i.e., social trust). Two vignette experiments conducted on Amazon.com's Mechanical Turk (*N* = 1,276 and *N* = 1,322) showed that measures of social trust do in fact produce relational trust (particular social trust > general social trust), a finding that was robust to numerous control variables and to replication studies conducted on two large random samples of undergraduate students (*N* = 884 and *N* = 841). These results support the idea that people rely on schemas and stereotypes concerned with the general cooperativeness and helpfulness of others when forming beliefs about another person's trustworthiness with respect to a particular matter at hand.

In chapter 6, a series of experiments adjudicate between classic models of commitment—social constraints view, encapsulated interests view, goodwill view, and virtuous dispositions view—and test novel hypotheses about causal attributions and other-praising emotions as moderating and mediating effects, respectively. In studies 1a and 1b, web-based vignette experiments conducted on Amazon.com's Mechanical Turk (*N* = 1,135 and *N* = 1,036) yield strong support for all four perspectives as well as novel predictions about the inequality of effects (goodwill = virtuous dispositions > encapsulated interest > social constraint) and the interaction of causal attributions and social constraints in their influence on trust. In studies 2a and 2b, web-based vignette experiments conducted on large random samples of undergraduate students (*N* = 493 and *N* = 474) replicate prior findings and provide evidence for gratitude and admiration as plausible mechanisms connecting perceived motivations to trust (gratitude >

admiration), with larger mediating effects—as predicted—for goodwill and virtuous dispositions than for encapsulated interests and social constraints. Together, the results indicate that trust can spring from multiple forms of commitment and that cognitive biases as well as other-praising emotions play an important role in its development.

In chapter 7, I explore the features of a trust relationship that exert the greatest impact on relational trust. Data from four vignette experiments found in chapters 5 and 6 show that characteristics of a truster (i.e., general social trust and particular social trust), characteristics of a trustee (i.e., reputational effects, halo effects, and perceived competence, exertion, and commitment), and forces external to a truster-trustee exchange relationship (i.e., social constraints) all matter for the development of relational trust. Moderate to weak evidence was found for status characteristics (characteristic of a trustee) and social identity (truster-trustee relationship), respectively. Overall, perceived motivations have a greater impact on relational trust than any other factor. These results support the idea that people rely on multiple sources of information within, between, and beyond individuals when forming trust.

In chapter 8, I review the main results; outline key contributions of this dissertation; highlight possible limitations and directions for future research; and offer a brief conclusion.

In short, the present dissertation is an exploration in belief formation with an emphasis on the stereotypes and expectations we have about the trustworthiness of strangers and known others, respectively.

CHAPTER 2: THE CONCEPT OF TRUST

"I believe that the most serious and important problems that require our immediate and concerted attention are those of conceptualization and measurement, which have far too long been neglected."

- Hubert Blalock (1979: 882)

A Brief History of Trust

Politicians, journalists, economists, social critics, and moral philosophers all seem to be talking about trust: how liberal democracies depend on it; how civil society flounders without it; how economic development requires ample amounts of it; and how small businesses thrive in neighborhoods saturated with it. As Kenneth Arrow (1972) has observed, "Virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time. It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence" (p. 357). As one would expect, James Coleman (1990) speaks of trust with similar regard: "…a group whose members manifest trustworthiness and place extensive trust in one another will be able to accomplish much more than a comparable group lacking that trustworthiness and trust…In a farming community…where one farmer got his hay baled by another and where farm tools are extensively borrowed and lent, [trust] allows each farmer to get his work done with less physical capital in the form of tools and equipment" (p. 304, 307). And this is the very reason Robert Putnam (2000) emphasizes trust to such an extent in his book *Bowling Alone*:

> "When each of us can relax her guard a little, what economists term "transaction costs"—the costs of the everyday business of life, as well as the costs of commercial transactions—are reduced. This is no doubt why, as economists have recently discovered, trusting communities, other things being equal, have a measurable economic advantage. The almost imperceptible background stress of daily life "transaction costs"—from worrying about whether you got back the right change from the clerk to

> double-checking that you locked the car door—may also help explain why students of public health find that life expectancy itself is enhanced in more trustful communities. A society that relies on generalized reciprocity is more efficient than a distrustful society, for the same reason that money is more efficient than barter. Honesty and trust lubricate the inevitable frictions of social life" (p. 135).

Trust, however, is not just another abstract sociological concept, like *habitus* or *institutional isomorphism*. It is, instead, an emergent property of social life embedded in and personally experienced by people in their workaday affairs that friends, parents, politicians, and popular media figures warn us to carefully place—what Hardin (1993) calls a *street-level epistemology*. Individuals appreciate and experience the importance of trust whenever they encounter the uncertainties of modern social life, such as when they hire a divorce lawyer, consult a neurosurgeon, seek investment opportunities, or pay for a babysitter; all of which involve the possibility of deceit and betrayal. And trust is particularly important in situations where individual lives, and not just money or possessions, are at stake. A police unit, for instance, where partners expect each other to take the other's interests to heart is unlikely to function without some level of trust between officers. Alternatively, one can imagine that victimization—or at least economic stagnation—is much greater for taxi drivers and sex workers who are embedded in communities with very little trust than those who reside in neighborhoods based on mutual trust and trustworthiness. In other words, as Robert Putnam (1993) has so eloquently stated before, "trust lubricates cooperation" (p. 171) and eases social interaction—regardless of the goals or what is at stake—in modern social life. With trust, collaboration and common projects are possible—the stuff of communities; without trust, suspicion and individual survival is the norm—the stuff of exploitation and societal backwardness.

In spite of these modern assertions that trust is normatively "good" for society, trust as a necessary condition for social order has been discussed and disputed for centuries. Although

Plato does not dwell on trust or trustworthiness as among the great virtues, his version of justice and of the supposed “friendship” between the ruler and the ruled seems to imply such a virtue. In his *Republic*, philosopher kings are unable to rule if the majority of citizens do not believe that they will rule wisely; and if the philosopher kings fear the poisoning of their wine by their underlings, then the republic will collapse under the weight of its own mutual suspicion. Likewise, Aristotle, in *Politics*, condemns tyrants for creating an environment where the ruled do not distrust the ruler but the other ruled, and Aristotle, like Plato, implicitly recognizes the importance of trust in his discussion of friendship. Centuries later, the medieval Muslim scholar Ibn Khaldun based his scholarship around the central concept of *asabiyyah*, which is often translated as social cohesion and trust. *Asabiyyah*, for Ibn Khaldun, is what arises spontaneously in nomadic and pastoral groups for having to collectively protect their livestock from outsiders. Accordingly, it is not city-empires—the classic Hobbesian solution to social order—that produce *asabiyyah*. It is city-empires created by groups with *asabiyyah* that eventually leads to *asabiyyah*’s ironic demise.

Elements of trust are further found in writings of the early moral and political philosophers. Immanuel Kant, David Hume, John Locke, and Adam Smith all invoke the idea of “promise-keeping” or “character” as a central component of social and political life. For Kant, the “perfect duty” of promise-keeping is what creates a cohesive and solidaristic group; it is promise-keeping that fosters the “bonds of mutual respect between members of a moral community” (Kant [1797]1983). For Hume, promise-keeping is one of the three “artifices of society” that is necessary for “commitments beyond family and friends to those whom we bear no ‘real kindness’” (Hume [1740]1978). For Locke, “trustworthiness, fidelity, the keeping of agreements and promises and respect for oaths” (Locke [1689]1988) is the necessary precondition for a society's constitution. For Smith, self-interest is what motives people to maintain their "character": "A dealer is afraid of losing his character, and is scrupulous in performing every engagement…Where people seldom deal with one another, we find that they are somewhat disposed to cheat, because they can gain more by a smart trick than they can lose by the injury which it does their character" (Smith [1763]1978). All of which, Locke suggests, will be upheld by fear of punishment in the afterlife if one is to break bonds of commitment. Thus, promise-keeping and character—basic elements of trustworthiness—are foundational not just for community, but for society as a whole (at least according to Kant, Hume, Locke, and Smith).

Still, it was not until Georg Simmel and Emile Durkheim that trust as a concept was brought to the forefront of sociological analysis. It might be true that Alexis de Tocqueville and Max Weber implicitly emphasized trust before them, either as a necessary pre-condition for democracy or as a result of Protestantism's rigorous ethic of universal honesty and fairness, respectively, but neither of which highlighted the necessity of trust or invoked trust specifically as in the works of Simmel and Durkheim.

Although Simmel is credited for making lasting contributions to macrosociological conflict theory (see Simmel 1955), he is most known for his pioneering work on network analysis, symbolic interactionism, social exchange theory, and the study of group processes. Within which, his analysis of "secrecy" and "the stranger" involve trust to the greatest extent. For Simmel, trust is "one of the most important synthetic forces within society" (1950: 318) that arises as a product of the increasing division of labor and social differentiation that accompanies modernity. In traditional medieval society, individuals were embedded within close-knit communities largely composed of family coalitions and kinship networks. In these small groups, the frequency and intimacy of contact produced a situation where everybody knew everything about everybody else: individual secrecy and anonymity was non-existent. With the rise of industrialization and modernity, individuals were liberated from these familial groups and intimate bonds. The unintended consequence of such a process led to the formation of a heterogeneous and complex society in which people are largely anonymous and bound together by impersonal relations. According to Simmel, this new, modern society is a *secret society* composed of *strangers* in which we report only "fragments" of our inner lives to others with whom not the whole person is dealt with, only an aspect of that person. Relationships in such a society require less and less of the subjective totality of the individual than do social interactions in premodern societies. As a consequence, forms of social interaction such as acquaintanceships and friendships founded on confidence become increasingly important for impersonal relationships in modern society. The rise of the secret society is what places trust in such a high regard for Simmel as a necessary element of social order that helps overcome and manage problems of asymmetric and incomplete information. As Simmel (1978) states:

> "Without the general trust that people have in each other, society itself would disintegrate, for very few relationships are based entirely upon what is known with certainty about another person, and very few relationships would endure if trust were not as strong as, or stronger than, rational proof or personal observation" (p. 178-9).

Despite a seemingly similar treatment of the division of labor for both Simmel and Durkheim, Durkheim paid greater attention to the evolution of social solidarity and the new social order the division of labor created. In his foundational text *The Division of Labor in Society*, Durkheim ([1893] 1984) famously argued that the evolution from a traditional and personal community to a modern and impersonal society would not necessarily lead to the eventual demise of social solidarity, as Tönnies ([1887] 1963) and other communitarians forebode. Instead, this evolution would lead to a new social solidarity founded not on likeness and similarity (i.e., mechanical solidarity) but on interdependence and trust (i.e., organic solidarity). What holds a society characterized by organic solidarity together are the differences in responsibilities between people. Because people in modern society perform highly specialized tasks, they are dependent on many other people in order to survive. Yet economic transactions and social exchange within this new solidarity are not a mere by-product of mutually shared interests founded on contractual and restitutive law. Instead, modern society rests on a much broader basis of non-legal foundations, what Durkheim called the "non-contractual bases of contract" or an underlying feeling of trust and faith. Such faith is crucial for the smooth functioning of modern society since impersonal social relations require some level of trust that others will uphold their agreements. Thus, the complex division of labor found in modern society activates social processes, such as trust and faith that emerge to resolve problems of solidarity brought about by the individualism absent from premodern societies. Interestingly, what Durkheim did was render a radical and counterintuitive conclusion: as individuals ostensibly become more autonomous and liberated from their community bonds, they become ever more dependent on society. And the key to this dependence is faith and trust.

What this brief historical sketch reveals is that, first, trust is considered by some to be a necessary, and not merely a sufficient, condition for social order; second, that although trust appears to be a modern concept as Simmel and Durkheim might lead us to believe, scholars have invoked trust and its sister concepts—promise-keeping, character, trustworthiness, social cohesion, social solidarity, and the like—for some time; and, third, trust as a concept is rarely if ever defined and usually mistaken for other concepts like optimism, trustworthiness, and reliability. For instance, when Simmel wrote about the "general trust that people have in each other", is Simmel really discussing trust or some form of optimism about the trustworthiness of strangers and anonymous others? Or, alternatively, when Durkheim emphasizes the "non-contractual bases of contract" is he really talking about the trust that person A has in person B with respect to matter Y or is he discussing the moral motivations of people to act in a trustworthy manner? The point is that although optimism and trustworthiness might be crucial for the maintenance of social order in modern society (and in some cases eventually produce trust), these concepts are analytically distinct from trust.

What is Trust?

In this next section, I review some of the common conceptualizations of trust found in the literature. I then offer my own definition of trust while simultaneously contrasting this definition with other conceptualizations. I then finish with a brief summary and a short outline of material appearing in forthcoming chapters.

Table 2.1 describes some of the currently most cited definitions of trust. At first glance, these definitions differ a great deal from one another. Some definitions refer to trust as a primitive concept (Uslaner 2002), while others refer to trust as a reducible and reductive concept like power (Hardin 2002); some definitions refer to trust as a simple physiological response (Kosfeld et al. 2005) or biological desire (Kurzban 2003), while others refer to trust as a moral motivation (Uslaner 2002), social orientation (Kramer and Tyler 1996), or emotional attitude (Jones 1996); other conceptualizations refer to trust as a belief about another's trustworthiness (Hardin 2002), while some refer to trust as a voluntary action or behavior (Fehr 2009); some definitions refer to trust as a response to ignorance (Shklar 1984) or a calculation of risk under uncertainty (Gambetta 1988; Seligman 1997), while others refer to trust as the ability to read signs and signals (Yamagishi 2001); some definitions refer to trust as a bet against deceit or betrayal (Sztompka 1999), while others refer to trust as the alignment of interests for both parties involved (Schelling 1960); and, finally, other conceptualizations refer to trust as social capital (Putnam 2000), while some refer to trust as functional (Luhmann 1979) or good for society (Fukuyama 1995).

Table 2.1. Definitions of Trust

Authors	Definition	Reference
Biology		
Kurzban	Trust is an adaptive neurological mechanism hard-wired in human brains that promotes cooperation and arose because of biological evolutionary kin-selection and reciprocal altruism mechanisms.	Kurzban (2003)
Kosfeld et al.	Trust is a physiological response to oxytocin that affects an individual's willingness to accept social risks arising through interpersonal interactions.	Kosfeld et al. (2005)
Philosophy		
Shklar	Trust is a tentative and intrinsically fragile response to ignorance, a way of coping with the 'limits of our foresight'.	Shklar (1984)
Baier	Trust is letting the trustee care for something the truster cares about, where caring for involves the exercise of discretionary powers.	Baier (1986)
Hertzberg	Trust is a fundamental attitude that is presumed by our very capacity to understand what reasons are.	Hertzberg (1988)
Jones	Trust is an attitude of optimism that the goodwill and competence of another will extend to cover the domain of interaction with the truster; this optimism is couched not in beliefs about the trustworthiness of others, but rather in accordance with affect and emotions.	Jones (1996)
Seligman	Trust is a means of negotiating risk under conditions of uncertainty.	Seligman (1997)
Psychology		
Deutsch	Trust is an action that increases the possibility of betrayal by a trustee who is not under the direct control of the truster.	Deutsch (1958)
Rotter	Trust is the generalized expectation that the verbal statements of others can be relied upon.	Rotter (1967, 1980)
Kramer and Tyler	Trust is a calculative orientation toward risk and a social orientation toward other people and toward society as a whole.	Kramer and Tyler (1996)
Economics		

Schelling	Trust is the recognition by each party involved that what might be gained by cheating in a given instance is outweighed by the value of the tradition of trust that makes possible a long sequence of future agreements.	Schelling (1960)
Fehr	Trust is an action where a person voluntarily places resources at the disposal of another party without any legal commitment from the latter.	Fehr (2009)
Political Science		
Putnam	Social trust is composed of norms of reciprocity and networks of civic engagement that improves the efficiency of society by facilitating coordinated action.	Putnam (1993, 2000)
Hardin	Trust is a belief and expectation held by one party that another party will behave in a trustworthy manner with respect to an uncertain issue or risky matter; that is, X believes that it is in Y's interest to behave in a trustworthy fashion with regard to uncertain matter Z.	Hardin (1993, 2002, 2006)
Fukuyama	Trust is the expectation that arises within a community of regular, honest, and cooperative behavior, based on commonly shared norms, on the part of other members of that community; it is also a lubricant that reduces transaction costs and mitigates free rider problems.	Fukuyama (1995)
Uslaner	Trust is a general outlook on human nature that does not necessarily depend on personal experiences or the assumption that others are trustworthy.	Uslaner (2000, 2002)
Administrative Science		
Mayer et al.	The willingness to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.	Mayer et al. (1995)
McAllister	The extent to which a person is confident in, and willing to act on the basis of, the words, actions, and decisions of another. Trust also has cognitive and affective foundations	McAllister (1995)
Zand	A willingness to increase your vulnerability to another person whose behavior you cannot control, in a situation in which your potential benefit is much less than your potential loss if the other person abuses your vulnerability.	Zand (1997)
Rousseau et al.	A psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another.	Rousseau et al. (1998)

Sociology		
Luhmann	Trust is a confidence in one's expectations; it reduces the complexities of social life and is historically learned.	Luhmann (1979)
Barber	The expectation of (1) the persistence and fulfillment of the natural and moral social order, (2) technically competent role performance from the trustee, and (3) the trustee to carry out their fiduciary obligations and responsibilities.	Barber (1983)
Lewis and Weigert	Trust is conceived as a property of collective units (ongoing dyads, groups, and collectivities) that consists of cognitive, emotional, and behavioral processes. It exists in a social system insofar as the members of that system act according to and are secure in the expected futures constituted by the presence of each other or their symbolic representations.	Lewis and Weigert (1985)
Gambetta	Trust is a particular level of the subjective probability with which an agent assesses that another agent or group of agents will perform a particular action, both before he can monitor such action and in a context in which it affects his own action.	Gambetta (1988)
Coleman	Trust is a decision under risk and is extended to another when the trustee is perceived as trustworthy and when the prospective benefits for the truster are sufficiently large.	Coleman (1990)
Misztal	Trust is to believe that the results of a trustee's intended actions will be appropriate from the truster's point of view.	Misztal (1996)
Sztompka	Trust is a bet about the future contingent actions of others.	Sztompka (1999)
Yamagishi	Trust is the ability to detect and process signs of risk in social interactions.	Yamagishi (2001)
Molm et al.	Trust is the belief that the trustee will not exploit the truster.	Molm et al. (2007)

What we can take away from this brief survey is that no common micro-foundation or relational process—such as risk calculations, beliefs and expectations, or attitudes—informs all of these conceptualizations (although differences in conceptualization are more pronounced between disciplines than within). In spite of this, the majority of these definitions tend to fall along three different dimensions. These three dimensions are largely built from and informed by others who have attempted to outline analytical distinctions between the (seemingly) countless definitions of trust (see Nannestad 2008; Newton and Zmerli 2011; Uslaner 2002), or what Eric Uslaner (2003) labels the *varieties of trust*.

The first dimension—*how*—addresses the social psychological microfoundations necessary for trust, with the two most common being strategic versus moralistic.[1] In other words, within this dimension, trust is seen either as an individual's deliberative assessment of another grounded in cognitive decision making (Coleman 1990; Hardin 2002) or as an internalized value that reflects how an individual should perceive and ought to behave toward others (see Uslaner 2002).[2] For the former, trust is usually conceptualized as a belief or expectation (i.e., a proposition about the world) built from personal experiences and contingent on another's trustworthiness as well as shifts in information and incentives. For the latter, while early life experiences are important (Flanagan and Stout 2010)—especially with parents (Dinesen 2009; Rotenberg 1995; Weissman and LaRue 1998)—it is generally inherited and internalized through socialization and dependent on an individual's psychological predisposition rather than contingent on expectations of reciprocity, personal experiences, or perceived motivations (see also Almond and Verba 1963; Banfield 1958; Inglehart 1988, 1990 for similar arguments). According to Uslaner (2002), even if moralistic trust does have elements of belief, such as "I believe that all Americans are fairly reliable and trustworthy", the choice to place this trust is non-rational and parallels the Weberian form of value-rational action. In contrast to strategic forms of trust, then, moralistic trust "…is a general outlook on human nature and *mostly* [emphasis in the original] does not depend on personal experiences or upon the assumption that others are trustworthy" (Uslaner 2002: 17). It depends on the beliefs, norms, and values of one's

[1] Or, in the parlance of Max Weber, rational versus value-rational.
[2] Although this dimension includes affect-based trust (Jones 1996; Miller 2000) and behavior-based trust (Gambetta 1988), I limit the discussion of this dimension to strategic and moral forms of trust due to their frequent use in the literature.

culture (Almond and Verba 1963; Banfield 1958; Inglehart 1988, 1990).

While the first dimension refers to *how*, the second dimension addresses to *whom* trust (either strategic or moralistic) is to be extended. Within this dimension, trust is conceived of as either particular or general.[3] Particular trust encapsulates the view that trust can only be placed in specific people we know or at least have information on. As Russell Hardin states: "…for me to trust you, I have to know a fair amount about you" (Hardin 2000: 34). Particular trust is usually observed when actors trust specific people, such as friends and family, business associates, and agents in a principle-agent problem.[4] At the other extreme lies the notion that the scope of trust can extend beyond the person (particular trust) and to people in general (general trust). This general trust applies to anonymous others or strangers with whom we do not know very well or at all. Thus, when Simmel wrote of the "…general trust that people have in each other…" (p. 178), this is the form of trust he was likely writing about. It is the idea that trust can and is applied to everyone to the same extent, regardless of who they are or how well we know them.

The third and final dimension concerns the scope of *what* one trusts another to do; what I refer to as simplex versus social trust.[5] Simplex trust concerns the specific matter for which trust

[3] Although Uslaner (2000, 2002) was one of the first scholars to distinguish between the different dimensions of trust as strategic versus moralistic and particular (or particularized) versus general (or generalized), his conception of particularized and generalized trust differs with respect to how I use it here. For Uslaner (2000), "Generalized trust is the belief that most people can be trusted. Particularized trust is faith only in your own kind" (p. 573). In this regard, Uslaner refers to particularized and generalized trust as trust in categories of people: Do you trust people who are similar to you or who are different from you? The issue with this conception is that Uslaner conflates to whom trust is directed with social identity. If one chooses to trust someone of a similar kind (i.e., particularized trust according to Uslaner) then social identity is motivating this act of trust. Thus, I argue that the difference between particularized trust and generalized trust is the scope of expectations—person (particularized) versus people (generalized)—and the salience of social identity (i.e., in-group membership versus out-group membership) is just one factor that might impact the formation of trust (be it particular or general). In other words, social identity is not central to the definition of trust (as suggested by Eric Uslaner); it is a causal variable that can either increase or decrease trust.

[4] Particular trust does not suggest that a person can trust only one person at any one time. What it does suggest is that trust must be directed toward a specific person as opposed to people in general.

[5] Although the use of "multiplex trust" better encapsulates what I refer to as "social trust", I maintain the use of

is placed: the issue or task A trusts B to do or not to do. Once the number of matters increases from one particular task or issue to many tasks or issues, simplex trust slowly moves toward the "social" end of the pole. For instance, in both cases of trust as a two-part relation where A trusts B without any limits on the matters at hand, such as "I trust my wife with respect to everything", or of trust as a one-part relation where A merely trusts, such as "I trust or distrust everyone with respect to everything", they gravitate toward the "social" end of the spectrum. At this extreme point on the dimension, the scope of matters for which one trusts another is unlimited. For instance, I might trust my best friend (particular trust) or even strangers (general trust) to watch my newborn daughter or drill my teeth. In short, simplex trust concerns specific matters, while social trust concerns all matters.

As one can tell, poles along each dimension are more complementary than others. It's difficult to imagine (although not impossible) for a rational actor to perform cost-benefit calculations or determine expected utility under conditions of general social trust as information concerning the trustee and the matters is poor; that is, actor A does not know actor B with respect to unfamiliar situation X. Moralistic trust, on the other hand, lends itself to the general and the social. Individuals who internalize optimistic and egalitarian world-views are more likely to trust regardless of the situation or paucity of information (Uslaner, 2002); if actor A believes all people are good and moral, actor A will trust actors B, C, or D regardless of the conditions or the matters.

Yet, strategic trust can be general (and social) and moralistic trust can be particular (and simplex). With respect to strategic trust, just because a truster has little information on either the trustee or the context does not mean that the truster will not form expectations about, or attempt

"social trust" as it is a common term in the literature. Keep in mind, however, that I treat "multiplex" and "social" interchangeably in the current dissertation.

to calculate, possible misconduct (see Herreros and Criado 2008; Robbins 2011). From a learning perspective, individuals fashion beliefs about the trustworthiness of people in general and attribute first- and second-hand experiences with their fellow citizens to strangers (Hardin 2002; Kelley 1967; Stack 1978). In other words, individuals use categories and schemas to create prototypes of people in general—such as stereotypes (Brewer 2008)—and employ incomplete pieces of information and cognitive shortcuts—such as representative heuristics (see Tversky and Kahneman 1974)—to evaluate the intentions of unfamiliar others (see also Kramer 1999; Messick and Kramer 2001). As Rotter wrote more than 30 years ago, general social trust is likely strategic in that it is "a generalized expectancy held by an individual that the word, promise, oral or written statement of another individual or group can be relied on" (1980: 1). To put it differently, individuals are strategic in their decisions, but, depending on the level of uncertainty, some situations call for the use of generalized beliefs about unknown others or the use of particuarlized expectations about familiar others.

With respect to moralistic trust, trust is a "…a moral commandment to treat people *as if* [emphasis in the original] they were trustworthy" (Uslaner 2003: 43). The implication is that people should trust others regardless of their association, be it a close friend, a stranger, or someone from a different ethnic group. While this encapsulates moralistic general trust, moralistic particular trust suggests that the normative scope of trust is limited and strictly reserved for "in-group" members (Uslaner 2000, 2002). Moralistic particular trust, then, suggests that trust is a moral commandment to treat people *who are part of your own in-group* as if they were trustworthy. As Uslaner (2000) wrote: "Generalized trust is the belief that most people can be trusted. Particularized trust is faith only in your own kind" (p. 573). In short, moralistic trust can exist along the particular-general trust continuum and can even apply to matters that are simplex or social in nature.

Based on these three dimensions, it appears that trust, like institutions, is a concept widely used in the social sciences with conceptualizations that wildly shift depending on one's theoretical and disciplinary bent. The problem with these diverse conceptualizations is that the accumulation of knowledge is almost always stilted and divisional resulting in research that has little bearing on the concept of interest. Yet, we know that trust, like institutions, is capable of maintaining social order as we personally experience the consequences of trust on a daily basis. But before plunging deeper into issues of conceptualization related to the *varieties of trust* (Uslaner 2003), I will first propose a definition of trust—what I and others (Cook, Hardin, and Levi 2005; Hardin 2002) refer to as relational trust—and then compare and contrast this definition with the *varieties of trust*.

Relational Trust

My definition of trust is as follows. If one builds upon the ideas of Hardin (1993, 2002, 2006) and colleagues (Cook, Hardin, and Levi 2005), trust consists of several elements (see also Farrell 2009). First, and foremost, trust is a tripartite concept restricted to a three-part relation: the two parties involved, A (the truster) and B (the trustee), and the matter at hand, Y, where matters at hand are broadly defined as any resource, service, or behavioral capability of B that is valued by A. According to this tripartite structure, dependence and interdependence are essential conditions for trust. As outlined by various social exchange theorists (Emerson 1972; Kelley and Thibaut 1978; Michaels and Wiggins 1976), the structure of an exchange outcome varies to the extent that actor A's outcome depends (1) solely on his or her own behavior (*independence*), (2) solely on the behavior of another actor B (*dependence*), or (3) on some combination of behavior by actor A and actor B or actors B….Z (*interdependence*). In other words, under conditions of dependence, the realization of actor A's interests depends solely on the behavior of another actor. And under conditions of interdependence, the realization of A's interests depends not only on their own behavior but also on the behavior of actors B…Z in a social unit. As Linda Molm (1994) points out, dependence is the defining structure of exchange relations and networks, in which actors produce mutual benefit through direct and indirect exchange; while interdependence is the defining structure of corporate groups, in which actors produce mutual benefit through cooperation and productive exchange. Although interdependence might suggest that an actor, A, can trust a social unit, B, trust is always restricted to specific relational dyads embedded within social units. For instance, if actor A is part of a work group (or a social unit) that requires everyone's contribution to succeed (matter Y), where everyone consists of actors B and C, actor A does not trust the social unit *per se*.[6] Instead, actor A trusts each respective member of that social unit, actors B and C, to varying degrees depending on each actor's trustworthiness with respect to matter Y (contributions to the public good).

Based on this tripartite relation, the formation of trust involves (1) characteristics of actor A, the truster (e.g., beliefs, stereotypes, and expectations), (2) characteristics of actor B, the trustee (e.g., capability and motivation), (3) characteristics of the A-B exchange relationship (e.g., social identity, exchange structure, task difficulty, and possibility of future exchange), and (4) characteristics of the environment external to A and B that impact the A-B exchange relationship (e.g., motivational incentives and monitoring mechanisms). All of which constitute the concept of trust as a three-part relation. Note how this does not mean that trust is reserved for situations in which A and B have had prior interactions or exchanges. Although such

[6] Actor A, however, might hold a positive stereotype about the competence and commitment of the work group that influences the trust A forms about specific members of that group. Note that the stereotype is not trust. Recall that trust is a belief about the trustworthiness of a specific group member that can emerge, in part, from other beliefs and stereotypes.

relationships do promote trust (and distrust), they should be treated as variables that foster or undermine the development of trust.

Second, trust is a cognitive process embedded within the family of knowledge and beliefs: it is, in general, a belief—or a proposition about the world—held by A that some future event Y will come to pass, and, specifically, a belief held by A that B will act trustworthily towards A with respect to some matter Y. Trust is cognitive in that it involves automatic and deliberative processes that are both impulsive and reflective, respectively (Murray et al. 2011). That is, trust formation is a dual process of relatively conscious and unconscious procedures. All of which is derived from perceptions of, prior experiences with, and knowledge about the social world. Interestingly, this conceptualization of trust is agnostic toward the Weberian ideal-typical forms of social action, in spite of its value in determining expected utility under conditions of uncertainty. I might, for instance, find you trustworthy and not use this belief in any instrumental or consequential way, and, instead, exchange with you out of habit. In this way, trust is merely a belief about another's trustworthiness that can be used to rationally or non-rationally achieve (or not to achieve) one's goals and ends.

Third, trust is a function of the trustworthiness of others. I *a priori* define trustworthiness as the capacity *and* motivation of an actor to fulfill the goals and desires of another actor. In this way, B is trustworthy to the extent that B is capable *and* motivated to fulfill A's interests. Building from Fritz Heider (1958), I define capacity as ability and competence, and motivation as commitment and exertion. Unlike prior work, I make no assumptions about what constitutes commitment. Some scholars suggest that commitment is realized when the interests of A and B are aligned, and, as a result, social constraints (e.g., contracts, monetary incentives, sanctions, etc.) that motivate B to do Y are sufficient for A to trust B (Dasgupta 1988; Gambetta 1993;

Herreros 2004). Under these conditions, the costs or benefits associated with social constraints align the interests of A and B and compel B, out of self-interest, to commit to A; that is, the trustworthiness of B toward A is based on deterrence (Rousseau et al. 1998). Other scholars, such as Russell Hardin and colleagues, suggest that commitment promotes trustworthiness if and only if A's interests are *encapsulated* by B. What they mean by this is that for trustworthiness to emerge, the interests of actor A and actor B should be one-and-the same: the goals and plans of each respective actor must encapsulate and be encapsulated by the other, which is to say that B has an interest in fulfilling A's trust. These conditions are typically met when B has an interest in (or a commitment to) an ongoing exchange relationship with A, or when A has favorable knowledge of B's trustworthiness because A has had direct personal experience with B. Whether social constraints (the alignment of interests) or ongoing exchange relationships (the encapsulation of interests) are necessary, sufficient, or necessary *and* sufficient conditions for trustworthiness is an empirical issue. Thus, instead of assuming the content of trustworthiness as theoretically given, I argue that understanding the foundations of trustworthiness is an empirical question. I leave the resolution of this theoretical and conceptual problem to empirical research, which is something I dissect in later empirical chapters.

Fourth, and finally, trust as a concept, much like cognitive heuristics, is restricted to conditions of unknown outcomes; that is, trust emerges under conditions that involve the potential for losses as well as gains (i.e., the outcome is unknown) *and* conditions that involve the ontological freedom on the part of B to pursue actions that are not in the interests of A (see Seligman 1997; Yamagishi et al. 1998). Otherwise, under conditions of certainty and full determinism, behavior is assured and trust is not an issue. For instance, it is incorrect to say that A trusts B to do Y when it is in B's interests to do Y because A has a gun pointed at B's child.

Likewise, it is equally incorrect to so that A trusts B with respect to Y when A continually monitors and surveys B's behavior. In these types of situations, uncertainty and risk is not an issue—A is assured of B's behavior, and A knows all of the possible outcomes and which outcome will come to pass. As Giddens (1990) states, "There would be no need to trust anyone whose activities were continually visible and whose thought processes were transparent…It has been said that trust is 'a device for coping with the freedom of others,' but the prime condition of requirements for trust is not lack of power but lack of full information" (p. 33). According to Gambetta (1988), "For trust to be relevant, there must be the possibility of exit, betrayal, defection" (p. 218-19). Trust, in other words, requires some level of risk and uncertainty so that there is a test of trust (Dasgupta 1988): wrongdoing is possible, but goodwill is expected.

Yet, greater risk and uncertainty should not be confused with unfounded beliefs and scant expectations, which suggests that trust is relevant *only* when there is doubt in A's beliefs about B performing Y. As Hardin (2002) writes: "Under this [scant expectations] view, I have greater trust the less I expect you to fulfill my trust" (p. 73). This is the opposite of how I define trust here: the clearer and more grounded A's expectation of B's trustworthiness, the greater the trust. Trust is not taking a risk on someone when we have little or no ground for believing that they are trustworthy (i.e., scant expectations), it is, instead, A's belief about B's trustworthiness that can be used to justify taking the relevant risks in exchanging or cooperating with B under conditions of unknown outcomes. If this was not the case and trust was merely scant expectations, then trust would lack adequate expectations about trustworthiness and be limited, as a theoretical concept, to exchanges with strangers we know little about.

The combination of these four elements—beliefs, trustworthiness, matters at hand, and unknown outcomes—yield the following working definition of relational trust: *a belief about* *another person's trustworthiness with respect to a particular matter at hand that emerges under conditions of unknown outcomes*.[7] With this working definition and conceptualization, we can now identify what trust is not. Throughout much of the writings on trust, especially with respect to conceptualization, there seems to be a tendency to conflate trust with trustworthiness. For Durkheim and the moral philosophers of the enlightenment, their interests were not necessarily with trust *per se*, but with the "character" and "promise-keeping" found with those who are trustworthy. And when Bernard Barber (1983) writes that "we need to…discover how to foster trust and make it more effective" (p. 170) or when Robert Putnam (2000) foresees the decline of trust in America, their concern is surely not with trust, but with trustworthiness. If Putnam is right and trust is regressing, then he would essentially be saying that expectations about other people's trustworthiness are deteriorating across America. But this is not what Putnam is trying to say and he would agree that such a statement is false and misleading. If anything, it is trustworthiness that is decaying, not trust. To say that trust is on the decline or that social capital and institutional incentives promote trust only makes sense indirectly through the causal connection that trustworthiness begets trust. In short, trust is A's expectation of B's trustworthiness with respect to matter Y; trustworthiness is B's competence *and* motivation to fulfill A's trust in B. Unfortunately, much of the scholarship on trust is, in fact, concerned with the latter, trustworthiness.

Scholars also have a tendency to confuse trust with cooperation. As Hardin (2002) states,

[7] Although not embedded within the definition, trust, like other beliefs, varies in strength and confidence: ranging from negative to neutral to positive (see Ullmann-Margalit 2009). This is in line with alternative conceptualizations of trust that include "positive expectations (Rousseau et al. 1998: 395)", "expectation[s] that the [trustee] will perform a particular action important to the trustor (Mayer et al. 1995: 712)", and "a hope or expectation of positive outcomes (Lount 2010: 421)." Under such conditions, "neutral" does not necessarily imply distrust; it implies that person A lacks sufficient knowledge or information about B to form a trust- or distrust-based belief about B (Ullmann-Margalit 2009). Thus, distrust is the negative expectation A holds about B's trustworthiness, with a concrete definition as follows: *a belief about another person's untrustworthiness with respect to a particular matter at hand that emerges under conditions of unknown outcomes*.

"To say I trust you in some way is to say nothing more than that I know or believe certain things about you—generally things about your incentives or other reasons to live up to my trust, to be trustworthy to me. My assessment of your trustworthiness in a particular context is simply my trust of you" (p. 10). Thus, the concept of trust is not purposive action or behavior, as some like Fehr (2009) would lead us to believe. For Fehr (2009), trust is a particular action that people take when they place resources in the hands of another without any legal oversight or contractual agreement. The issue with this conceptualization is that although the action might give compelling evidence for trust, the action itself is not trust. If we cooperate there are many reasons to do so, some of which depend on trust and some of which do not (Rousseau et al. 1998). Take my willingness to purchase meat for the first time from a butcher at the local farmers market. We cooperate—that is, he provides me with unspoiled meat and I provide him with a genuine currency—not because I trust him to do so, but because I want to take a risk and assess the quality of his or her product. If, on the other hand, we exchange numerous times with mutual success and satisfaction, I will have gathered enough information concerning his or her trustworthiness to believe that he or she is capable *and* motivated enough to fulfill my goals and that I might trust him or her in future endeavors concerning the exchange of meat and money. Now consider Blau's (1964) theoretical discussion of reciprocal exchange and trust (see also Cook et al. 2005):

> "Typically…exchange relations evolve in a slow process, starting with minor transactions in which little trust is required because little risk is involved. A worker may help a colleague a few times. If the colleague fails to reciprocate, the worker has lost little and can easily protect himself against further loss by ceasing to furnish assistance. If the colleague does reciprocate…he proves himself trustworthy of continued and extended favors…Hence, processes of social exchange, which may originate in pure self-interest, generate trust in social relations through their recurrent and gradually expanding character" (p. 94).

In spite of the simplicity, much of the cooperation and trust we observe in the multitude of economic, political, and social exchanges parallel these examples. To say that trust is an action is to confuse trust with something it is not. People do or do not trust to some degree, conditional on the evidence at hand. And people act or do not act, depending on a multitude of factors, many of which do not involve trust. I might trust person B and take a small risk in my exchange with her or I could take a large risk and exchange with person C whom I do not trust whatsoever (see Molm, Schaefer and Collett 2007 for empirical support of this argument). If anything, trust is merely a sufficient condition for cooperation and not foundational or necessary in every cooperative endeavor.

Trust is also sometimes confused with acts of risk-taking or what some call a "leap of faith" (Möllering 2006) or "to lower one's guard" (Elster 2007). For instance, Levi and Stoker (2000) suggest that "[trust] involves an individual making herself vulnerable to another individual…that has the capacity to do her harm or to betray her (p. 476)." But, like cooperation, this "making herself vulnerable" or "leap of faith" is not necessarily trust: trust, as we know, is a belief about a specific person's trustworthiness with respect to a particular matter. It, as Russell Hardin (2002) writes, "…is not itself a matter of deliberately taking a risk because it is not a matter of making a choice" (p.12). For instance, with respect to matter Y, A might trust B, C, and D to the same degree. A might then decide to take a "leap of faith" and exchange with the person who provides the greatest value Y. In this case, trust is the belief A holds about the trustworthiness of B, C, and D, while A's "leap of faith" is the decision to take a risk and exchange with whoever that person might be. To clarify, risk-taking stems from A's perceived risk and uncertainty, which can itself stem from any number of factors that are not trust. This includes physical constraints, such as trade routes and weather conditions, and social constraints, such as economic and labor market regulations. It also includes A's preferences, values, and attitudes. Stating it plainly: your perceived risk of a situation and your resulting "leap of faith" can spring from your trust in another person or any number of other factors; and, in either case, trust is merely one of many inputs that can alter a person's perceived risk or uncertainty that can then lead them to take the proverbial "leap of faith" and cooperate. But in many situations, A neither trusts nor distrusts B: he or she holds neutral beliefs about B's trustworthiness. Under such conditions, those other factors, including physical and social constraints, play a key role in molding perceived risk and uncertainty.

This discussion brings us to a key distinction in the trust literature, one concerned with the difference between risk and uncertainty. Economists are correct to point out that risk and uncertainty are analytically distinct. Under conditions of risk, while the outcome is unknown, the distribution of possible outcomes *is* known. For instance, if I role a 6-sided die, I do not know the outcome, but I do know the distribution of all possible outcomes: there are six possible outcomes, each of which has an equal chance of landing. Under conditions of uncertainty, both the outcome *and* the distribution of possible outcomes is unknown. This would be akin to rolling an die of unknown size be it a 4-, 6-, 8-, 10-, 12-, 20-, or 100-sided die (interestingly though, in either case of risk or uncertainty, a person is—and must be—faced with at least two possible unknown outcomes in the real world). Trust can occur under both conditions, but conditions of uncertainty are most likely to prevail under many (if not most) real-life situations in which trust is relevant.

So how does trust relate to risk and uncertainty? Trust emerges under conditions of risk and uncertainty—conditions in which the outcome of Y is unknown. So, in this case, risk and uncertainty are necessary conditions for trust. But, as previously discussed, people also have subjective perceptions about risk and uncertainty. Briefly consider a 4-sided die in which four possible outcomes are possible, a roll of a 1, 2, 3, or 4. With an unbiased die, each outcome has a 25% chance of landing. People's perceptions about risk under these conditions are generally uniform in that everyone believes either a 1, 2, 3, or 4 will land with a 25% chance. Now, let's say that the 4-sided die is a police officer and the outcomes are either (a) ignored, (b) stopped-and-frisked, (c) fined, or (d) shot. Very few people might believe that each outcome has a 25% chance to occur, while the vast majority of people would view (a), (b), or (c) as more likely to occur. For instance, if one holds a stereotype that police 'serve and protect', then their perceived risk of being "stopped-and-frisked" is low; while those who hold the stereotype that police 'seize and profit', then their perceived risk of being stopped is high.

This exercise nicely illustrates the relationship between trust and perceived risk (and uncertainty). As stated earlier, trust and perceived risk are analytically distinct concepts, but they are causally related in that A's trust (or distrust) in B increases (or decreases) A's subjective probability that B will accomplish Y. That is, A's subjective probability that matter Y will come to pass is weighted by A's trust in B with respect to Y. *If I believe that you're trustworthy to do whatever it is I need you to do, then this belief alters my perceived risk about the distribution of possible outcomes*. Although longwinded, my primary goal with this discussion was to illustrate how trust is not necessarily a perception of risk and uncertainty, a risk-taking decision, or a "leap of faith." This is important given the conceptual slippages scientists routinely make about trust and anything related to risk and uncertainty.

Other conceptualizations treat trust as a one-or two-part relation. As outlined above, trust is a reductive and relational concept composed of two parties and a matter at hand. Without these three basic elements, trust is not present. For instance, I might trust a friend to keep a secret but to not repay a loan, while I would trust a different friend to repay a loan but to not keep a secret. Note that in this instance there are various parties (the truster and the trustee) and the matters at hand (to keep a secret or to repay a loan)—A trusts B with respect to matter Y. If trust, on the other hand, is merely a one-part relation where A simply trusts everyone with respect to everything (i.e., general social trust), then trust is nothing more than a moral motivation (Uslaner 2002), social orientation (Kramer and Tyler 1996), physiological response to oxytocin (Baumgartner et al. 2008; Kosfeld et al. 2005), or stereotype (Brewer 2008; Messick and Kramer's 2001). But this is not how trust operates in the real world. Social psychologists, for instance, have shown that when we cognitively categorize and organize the social world, we not only create schemas for events, persons, objects, and the self, we also fashion relational schemas that uniquely represent our interpersonal relationships (Baldwin 1992). This suggests that if trust is merely reserved for one- or two-part relations, then such relational schemas should be absent from our cognitive structures. This is obviously not the case. Thus, when we develop a concept like trust, we want it to be abstract enough so as to have a large explanatory scope regardless of time and place while simultaneously bearing resemblance to the process of interest in the empirical world. To think, then, that I, or anyone else, would trust everyone with respect to everything is an empirical stretch. Would you loan any random stranger on the street your car? Ask said stranger to care for your child while you and your wife went on vacation? Or employ a sociology professor to surgically remove a life threatening brain tumor? My guess is that you would answer no to all of these questions and that trust as a one-part relation would bear very little on your decision to exchange and cooperate in these situations.

Now take trust as a possible two-part relation where A trusts B. For instance, "I trust my wife", period, or "person A trusts her mother" without any limits on the matters for which trust is placed. This sort of trust, however, is very unlikely even in the closest of relationships. I may, for instance, trust my mother, but not surely for anything and everything. I would be hard pressed to trust my mother with various secrets or to fly a plane. Not to say that this doesn't happen, but what this example illustrates is that the concept of trust as a two-part relation is something that very few of us experience. If trust is, in fact, a one- or two-part relation then the theoretical scope of trust is either too large or too small, respectively. In either conceptualization, a theory of trust that is restricted to these cases is severely limited empirically and, as a result, has no real bearing on the myriad of exchanges we experience in our daily lives. If anything, trust conceptualized as a one-part relation is likely an account of the positive expectations we have concerning the trustworthiness of strangers; while trust conceptualized as a two-part relation is likely an account of the unconditional faith or confidence we have in others in their relationship with us. One is a stereotype and the other is unconditional faith, neither of which are trust.

Although equating trust to trustworthiness, cooperation, perceived risk, risk-taking, and a one- or two-part relations are the most common conceptualizations found in the trust literature, other conceptualizations of trust exist as well. Yet, to review them all would require another chapter or book entirely.[8] I will, however, now return to my discussion of the three dimensions that constitute the supposed *varieties of trust*.

[8] If one is interested, see Hardin (2002) for a lengthy discussion of the other misconceptualizations of trust.

Table 2.2. The Varieties of Trust

		Whom			
		Particular		*General*	
		What		**What**	
		Simplex	*Social*	*Simplex*	*Social*
		Cell 1	Cell 2	Cell 3	Cell 4
How	*Strategic*	A belief about another person's trustworthiness with respect to a particular matter.	A belief about another person's trustworthiness with respect to all matters.	An expectation - or stereotype - about the cooperativeness and helpfulness of strangers with respect to a particular matter.	An expectation - or stereotype - about the cooperativeness and helpfulness of strangers with respect to all matters.
		Cell 5	Cell 6	Cell 7	Cell 8
	Moralistic	A value held by an individual that one should rely on and trust known others with respect to a particular matter.	A value held by an individual that one should rely on and trust known others with respect to all matters.	A value held by an individual that one should rely on and trust strangers with respect to a particular matter.	A value held by an individual that one should rely on and trust strangers with respect to all matters.

Table 2.2 offers a number of definitions that encapsulate the three dimensions of *how*, *whom*, and *what*. In returning to these three dimensions, we can see that my definition of relational trust—as well as other conceptual treatments of trust including Hardin's (2002) encapsulated interest account—falls within Cell 1. In this cell, trust is *strategic* and strictly reserved for *particular* trustees for specific (i.e., *simplex*) matters. While my definition of trust includes "conditions of unknown outcomes", this core feature is found across (nearly) all conceptualizations of trust. As a result, risk and uncertainty were not treated as a dimension. One will also notice that my treatment of *strategic* trust across Cells 1 through 4 is belief-based, where other conceptualizations of trust as risk and uncertainty (e.g., Coleman 1990) and observed behavior (e.g., Fehr 2009) would fall along this strategic pole (and within Cell 1 specifically). I restrict strategic trust to beliefs as preference-based, attitude-based, or behavior-based forms of trust are not trust (this is something I've already discussed at length in this chapter).[9]

One can see that the remaining cells along the strategic pole are concerned with belief-based trust as one- or two-part relations. Cell 2 constitutes specific forms of faith we might have in particular people respecting all matters, while Cells 3 and 4 reflect stereotypes—a belief concerning a group or type of individual—about people in general with respect to simplex or multiplex matters. The contents of Cells 3 and 4 are more conceptually clear than the contents of Cell 2. As a result, I will spend some time discussing the contents of Cell 2. To start, a key question concerns why the definition found in Cell 2 is not trust? Two reasons: this sort of belief

---

[9] Although I place my definition of relational trust toward the end of the strategic pole, it is not—by definition—strategic. Beliefs such as trust can be used strategically to assess perceived risk or expected value. But all beliefs do not have to be used in this way. Beliefs about the supernatural or political leaders or ideological stances are not always used to maximize payoffs. But, unlike beliefs about the supernatural, trust is often treated strategically due to its nature as a specific proposition concerning the cooperativeness and trustworthiness of others. In this way, trust will often—though not always—be used to assess the expected value of exchanging or not exchanging with someone.

rarely occurs in the real-world and this sort of belief should be decomposed into trust beliefs for each respective matter. As a result, the definition found in Cell 2 does not encapsulate the multitude of trust relationships a person might experience in their day-to-day activities or even various forms of trust we have in a specific person for a great many things. For the conditions found in Cell 2 to occur, A must trust B for all matters of interest to him or her, such as fixing a car or flying a plane. Now, I might believe that my mother cares for and is concerned about all of my interests to the same degree, but because trustworthiness consists of motivation *and* capability, my trust in her to fly a plane, remove a brain tumor, or edit a paper will all differ to a great degree even though for each one of these matters she might care about my interests to the same extent. This is not to say that the contents of Cell 2 are empirically unimportant. But it does imply that there is not one form of trust in a particular person for all matters; each and every matter for a particular person can be decomposed into different trust beliefs. Thus, I do not trust my mother for all matters, period. I have varying degrees of trust in my mother for any number of matters, largely stemming from my perception of her motivations *and* capabilities.

Cells 5 through 8, on the other hand, consist of “trust” as moralistic in character, and obviously vary by *whom* to trust and *what* to trust. Regardless of the latter two dimensions, these forms of “trust” stand in stark contrast to my definition of relational trust. As Elster (1979) states, to say that “…altruism, trust, and solidarity are genuine phenomena that cannot be dissolved into ultra-subtle forms of self-interest” (p. 146) suggests that trust has some distinctively non-rational *moral character*. Echoing Durkheim, such thinking is also found in the writing of sociologists Nikolas Luhmann (1979) and Bernard Barber (1983) who underscore the idea that trust grounded in expectations and probabilities about the trustworthiness of others misses the point of trust. For them, trust is something that reproduces and maintains the moral foundations on which society is based (see also Lewis and Weigert 1985). What these authors are doing is either moralizing trust or moralizing trustworthiness and making trust *solely* dependent on values and norms. This is exactly how the various forms of trust are defined in Cells 5 through 8.

The reader will notice that these versions of trust harbor the same conceptual slippages as those previously discussed. First, trust is not trustworthiness—although some might trust those who are perceived to be morally motivated to take their interests into account. Second, if people are morally motivated to trust, then they would trust everyone with respect to everything, which is absurd. Otherwise, trust would not be moral it would be conditionally moral and open to rational assessment. Third, if trust is moral and people are morally motivated to trust then trust is not a belief, it is a simple preference, desire, disposition, or value. And if trust is, in fact, a preference or value, then trust is nothing more than a comparative evaluation of—or a ranking over—a set of exchange partners. For instance, trust as a preference would take the following form: Steve prefers to exchange and cooperate with John to Robert. We know empirically that this is not the case for trust since trust operates under conditions of risk and uncertainty, whereas preferences motivate—and are conditions for—action regardless of certainty, risk, uncertainty, or ignorance (see Elster 2007).

Taken together, scholars who view trust other than anything but *strategic*, *particular*, and *simplex*—what I call relational trust—conflate trust with other microfoundations. For instance, *moralistic* trust, either *particular* or *general*, should actually be conceptualized as a personal value, a moral norm of trustworthiness, or a social preference, while *strategic general* trust (either *simplex* or *social*) should be conceptualized as a cognitive schema or stereotype about prototypical people.[10] Yet, this is not to say that the *varieties of trust* are unimportant for trust and cooperation; the optimistic expectations (i.e., stereotypes) we have about strangers are vital in our willingness to trust, take risks, and cooperate with people we know very little about. But it is to say that many of these *varieties of trust* are not trust but other factors known to promote trust, perceived risk and uncertainty, risk-taking, and/or cooperation. The distinction I want to make is that while stereotypes and values are not central to the concept of trust, they are nonetheless causally related to trust. For instance, *general* trust is nothing more than a stereotype, but a stereotype that can influence our beliefs about the trustworthiness of another with respect to a particular matter. And although I empirically investigate the relationship between some *varieties of trust* and relational trust (e.g., general social trust and relational trust), how the remaining "varieties" causally interrelate is beyond the scope of the present dissertation. Drawing on the attitudes literature in social psychology, however, we can speculate, and with some confidence claim, that a belief about another person's trustworthiness (i.e., strategic particular simplex trust) can promote positive attitudes toward particular persons (i.e., moralistic particular simplex trust). And if said persons end up trustworthy, this then fosters stereotypic beliefs about (i.e., strategic general social trust) and positive attitudes toward (i.e., moralistic general social trust) strangers; leading to further cooperation and exchange that is both a function of beliefs and values.

My hope with this discussion of the trust concept was to not only inform the reader of how trust has been conceptualized within the literature, but also to underscore how these conceptualizations have produced a Balkanized accumulation of knowledge ostensibly about

---

[10] The idea of a *general* trust is severely limited. Although it is an empirical issue, I find it difficult to imagine that anyone, anywhere trusts everyone in the whole world. In reality, the *general* in "general trust" should typically be reserved for more specific—or finer-grained—groups, such as "other Swedes" or "fellow Christians" or "the Marine Corps".

trust that, in reality, is more about alternative microfoundations or other cognitive processes unable to speak to what the literature was originally intended to study. While this makes for lively and prolific empirical observations, it also makes for expert disagreement as to the causes and consequences of trust that are difficult to resolve until the conceptualization and operationalization of trust are closely aligned. This lack of alignment is partially a result of misconceptualization but also an artifact of the methods employed: sociologists and political scientists tend to rely on attitudinal measures of trust that ignore the matters at hand or the specific persons to whom trust is directed, while economists rely on behavioral indicators of trust that conflate beliefs with preferences and actions (see Appendix A for a larger discussion of the problems associated with survey measures of attitudinal trust and laboratory measures of behavioral trust).

Thus, a primary goal of this dissertation is to capitalize on a methodological tool largely underutilized in the social sciences—vignette experiments—that sufficiently measure and capture the core components of trust. By so doing, my plan is to investigate the multiple sources of trust emanating from the truster, the trustee, and the situation in one study. Another goal of this dissertation is to link general social trust (and other forms of social trust) to the formation of relational trust. In particular, I explore one type of stereotype—expectations about the trustworthiness of strangers with respect to all matters—and investigate how this stereotype impacts the expectations we develop concerning the trustworthiness of particular persons with respect to a specific matter. To better understand the roots of this process, I also investigate the cross-national correlates of these stereotypes through time and connect these cross-national correlates to relational trust via stereotypes. In short, the present dissertation is an exploration in belief formation with an emphasis on the stereotypes and expectations we have about the trustworthiness of strangers and known others, respectively.

The forthcoming chapters are as follows. In the theory chapter, I derive a number of propositions addressing determinants of trust from the three primary sources—the truster, the trustee, and the situation. I then test these theoretical propositions in three separate empirical chapters: the first empirical chapter explores the political-institutional determinants of expectations about the cooperativeness and helpfulness of strangers through time with cross-national public opinion data using pooled unbalanced fixed- and random-effects panel models, while the remaining empirical chapters investigate the sources of relational trust using vignette experiments.

CHAPTER 3: THE THEORETICAL FOUNDATIONS OF TRUST

If we lived in a world where everyone was capable *and* motivated to carry out everyone's interests, trust would be unproblematic. And in such a world, everyone would be able to, and equally willing to, provide for whatever we desire: I would trust friends and family, and even people I know nothing about, to cut my hair, provide feedback on a dissertation chapter, fly a plane, remove a cancerous tumor, and offer legal advice all without a conflict of interests. And, in some sense, trust would be unnecessary in such a world, but that is not the world in which we live. Instead, our world is one in which we know, at best, fragments of information about some peoples' capabilities and motivations, something of substance for a very few, and nothing at all for most. Under these circumstances, trust is one potential source of mutually beneficial outcomes: if I only know a fraction of your personality but believe that you care for my interests with respect to a particular matter and are competent enough to carry out my wishes, then I have good reason to trust you and act on said trust by cooperating or exchanging with you. Yet, the ultimate source of trust in this situation is not necessarily my personal predisposition to trust, period, but your motivation *and* competence to fulfill my trust—your trustworthiness.

If trustworthiness begets trust, then the primary question is: What individual, relational, and structural factors impact the perception that others are trustworthy? Below I propose a number of novel and pre-existent hypotheses concerning the foundations of trust and trustworthiness. I draw on theories found in sociology, political science, economics, social psychology, and philosophy, including—but not limited to—status characteristics theory, social identity theory, crowding theory, attribution theory, and sociological rational choice theory. The goal is to pinpoint the dispositional—or internal—sources of trust (*individual*), identify the components of trustworthiness that promote trust (*relational*), and understand the situational features conducive to the formation of general social trust and relational trust (*structural*).

A General Model of Relational Trust

To begin, I propose a general model that considers both the causes and consequences of trust. As stated in Chapter 2, I define trust as *a belief about another person's trustworthiness with respect to a particular matter at hand that emerges under conditions of unknown outcomes*. Central to this conceptualization is the idea of trust as a belief—a proposition about the world (or another person's trustworthiness in the case of trust) in which the person is at least minimally confident (see Hedström 2005). Although trust is a (subjective) belief about a particular person in regards to a very specific matter, it is a belief nonetheless. Since trust is a belief, its sources are numerous and varied.

Take Jens Rydgren's (2009) recent treatment of beliefs. Rydgren's goal is to propose general mechanisms of belief formation that do not produce uniquely idiosyncratic beliefs but, instead, outline general patterns in belief-formation processes. He does so by distinguishing between six general ways in which beliefs are formed: (i) via observation (e.g., dog bites man); (ii) via information received from others—such as interpersonal gossip, the educational system, and the media—that is processed through learning and socialization; (iii) via inductive strategies of inference (e.g., forming beliefs about unknown others based on interactions with or knowledge about known others); (iv) via deduction from other beliefs (e.g., stereotypes influencing impression formation); (v) via adaptation of beliefs to fit desires and preferences (e.g., wishful thinking); and (vi) via dissonance-reduction mechanisms whereby beliefs are modified to align with desires, preferences, attitudes, or behaviors.

Rydgren's model of belief formation is touted as being embedded within a "socio-cognitive framework" (2009: 73), but nonetheless ignores a critical microfoundation: affective motives such as mood, anger, and gratitude. Moving away from the standard model of rational choice in which exogenously specified preferences and beliefs produce action, Jon Elster (2007, 2009) has proposed a modified model of emotional choice intended to capture the causal impact of affect and emotion. In his model, emotion is a grand variable that directly impacts action (e.g., weakness of will and "crimes of passion"), preferences (e.g., temporary preference change in which euphoric feelings toward X produce a desire for X), beliefs (e.g., wishful thinking), and information (e.g., love motivates us to ignore slanderous information about our loved ones that is, in all likelihood, true). And since preferences and beliefs both motivate action, emotion also impacts action indirectly through preferences and beliefs. Importantly, Elster subscribes to the idea that beliefs can also influence emotions (e.g., beliefs about the untrustworthiness of actor B will spark anger and disdain).

Both Rydgren's and Elster's models of belief formation provide a foundation on which to build a general model of trust. Both models also highlight how beliefs, like trust, have countless sources. But, as stated before, the goals are to (a) pinpoint those exogenous sources of trust that yield general patterns, and to (b) identity those exogenous sources that yield trust to the greatest extent.

Figure 3.1 is an illustration of the general model of trust I investigate in the present dissertation. Keep in mind that Figure 3.1 is not a holistic model in that all causal arrows or mechanisms (e.g., emotion) are specified. Figure 3.1 also does not include feedback effects or reflection arrows. For instance, Elster (2007) specifies a reciprocal relationship between emotions and beliefs, but such a nonrecursive causal structure between emotions and trust is beyond the present dissertation. And, finally, although Figure 3.1 includes the consequences of trust, my project does not explore these outcomes. As such, the causes of trust specified in

Figure 3.1 are subdivided into *primary hypotheses* and *secondary hypotheses*. These series of hypotheses are ranked in terms of novelty and importance, where novelty implies a previously untested hypothesis and importance implies an outstanding and unresolved hypothesis. These two sets of hypotheses are explored in greater detail below.

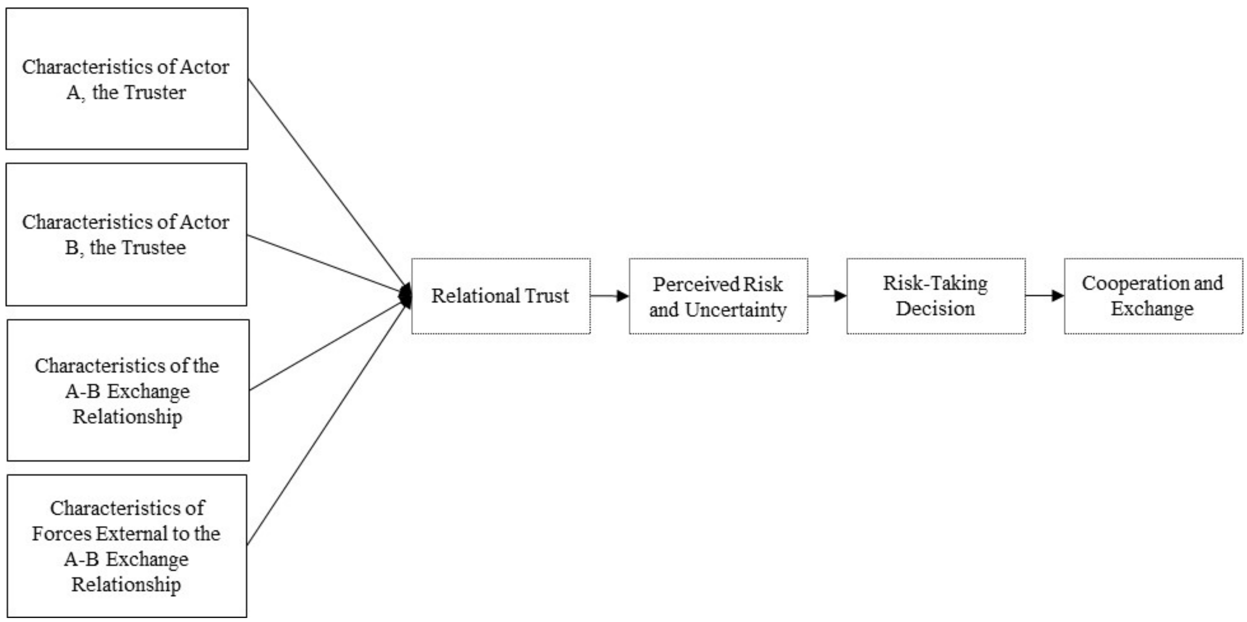

Figure 3.1. A general model of relational trust.

Primary Hypotheses

A central focus of the present dissertation is to understand the contextual foundations of general social trust. For the remainder of the dissertation, when I invoke “general social trust” I am strictly referring to the strategic form. That is, I treat general social trust as a stereotype—not as a value—about the cooperativeness and helpfulness of strangers with respect to all matters. In this sense, the first set of hypotheses concern the contextual sources of a particular stereotype—general social trust.

Political-Institutional Foundations of General Social Trust. To begin, most social scientists agree that our daily activities consist of situations in which we rely on actors we know very little about to help us accomplish tasks that are difficult to do alone, such as hire a lawyer to represent us in court, consult a dermatologist to screen us for skin cancer, or employ a computer scientist to design a webpage. It is commonly recognized that general social trust—or expectations about the cooperativeness of individuals with respect to all matters—is sufficient to support such transactions, and that without general social trust expectations of wrongdoing cloud exchange and stunt mutually beneficial outcomes. A key question for policymakers and social scientists then is how best to foster general social trust in a given population. Interestingly, many scholars have pointed to the state as one such source and have outlined four competing political-institutional factors that foster or undermine general social trust.

First, for some scholars, political-institutional constraints that induce actors we cannot readily judge or monitor to act in our interests and to behave in ways that we might call reliable is what fosters general social trust in a society (Cook, Hardin, and Levi 2005; Hardin 2002; North 1990). Among the variety of state enforcement mechanisms that accomplish this task, rules of the game manifested as legal property rights are the most critical (Herreros 2004; Herreros 2008; Levi 1998; Rothstein and Stolle 2008). Importantly, legal property rights buttress an environment where people can take risks and cooperate with others they know nothing about even if neither actor finds the other actor trustworthy or if neither actor holds expectations about the cooperativeness of strangers with respect to all matters (Knight 2001). If both actors take a risk and successfully exchange with the other, then both actors will update their beliefs about the other's trustworthiness but also update their beliefs about the trustworthiness of strangers (Blau 1964; Cook et al. 2005; Cook, Hardin, and Levi 2005; Hardin 2002). The more interactions an actor experiences like this, the more optimistic they will become about generalized others.

This relationship, however, might be not be linear but curvilinear: “The worst legal regime is not one in which contracts cannot be enforced but one with an intermediate level of enforceability (Bohnet et al. 2001: 136).” Strictly speaking, regimes with intermediate levels of property rights protection neither adequately prosecute malfeasance nor leave the guarantee of exchanges solely to decentralized systems of informal regulation. Both of which foster generalized trust but are noticeably absent from states with moderate levels of contract enforcement and property rights protection. In other words, strong states *and* weak states promote general social trust, while intermediate states lead to its collapse. Thus:

Hypothesis 1: Greater legal property rights protection increase general social trust at an increasing rate, forming a U-shaped curve.

Second, other social scientists suggest that political institutions are a bane and ironically undermine and crowd-out the very things they are implemented to promote, such as civil society, social cohesion, and general social trust (Gellner 1988; Taylor 1982, 1987; Titmuss 1970). Central to this crowding-out perspective is the notion of state dependence: in the presence of centralized market regulations, individuals come to depend on those regulations and agents of the state, instead of each other, to promote mutually beneficial market outcomes (see Aghion et al. 2010 for a similar argument). Economic exchange, as a consequence, becomes less a result of spontaneous cooperation and mutual dependence and more a result of centralized market regulation. This ultimately leads to the deterioration of community and civil society, a self-reinforcing dependence on political institutions to foster economic transactions, and a decline in general social trust. The implication is that general social trust flourishes in the absence of government regulation, and that generalized trust wanes, although does not entirely disappear, in the presence of government regulation.

Yet, not all centralized market regulations undermine generalized trust. Efforts by the state to control labor markets with minimum wage laws and prescriptions for collective bargaining, for instance, might increase generalized trust. In effect, labor market regulations expand the rights of citizens and integrate the working class into the larger social system (Bendix 1964). As Marshall (1950) classically argued, rights of citizens foster egalitarian economic systems and nationalistic social bonds that unify communities. Both of which plant the seeds for general social trust, especially among those who benefit from workers' rights. In short, centralized market regulations can either increase or decrease general social trust depending on the type of market being regulated. Thus:

Hypothesis 2: Greater government regulation of economic, business, and credit markets decrease general social trust.

Hypothesis 3: Greater government regulation of labor markets increase general social trust.

Third, while some scholars emphasize political-institutional security and market regulation, others underscore the extent to which political institutions publicly allocate resources and are universally oriented (Rothstein and Stolle 2008; Rothstein and Uslaner 2005). The argument here is that universal political institutions, such as welfare states, reduce the perception that one's government sides with certain economic actors over others. This helps generate the impression that each citizen has an equal opportunity for success and failure, creating a sense of shared fate, collective cohesion, and group solidarity that yields general social trust (Rothstein and Stolle 2008; Rothstein and Stolle 2003). In other words, unfair governments foster economic inequality, inequality of opportunity, and unevenly distributed resources. When this occurs, social divisions and class hierarchies become ever more salient and perceptions of shared fate decline along with trust in generalized others (Uslaner 2002). The single way to overcome this outcome is with a government that equally divides public resources and enacts universal social welfare programs focused on leveling socioeconomic differences.

Hypothesis 4: Greater universality of socioeconomic provisions increase general social trust.

Fourth, some scholars suggest that the power-sharing capacity of the state is what fuels general social trust (Levi 1996; Lijphart 1999; Paxton 2002). Two possible mechanisms account for this effect. The first, cognitive inferences, suggests that certain kinds of experiences are critical for the development of general social trust (Rothstein and Stolle 2003). In particular, if citizens are embedded within a partisan regime that is biased toward certain political and economic interests, then this regime will foster distrust among the disadvantaged and excluded groups. If, on the other hand, political institutions are non-partisan and welcome all interests to the political process, then general social trust will grow. Authoritarian and totalitarian regimes generally fall with the former, while democracies and systems of proportional representation generally fall with the latter. The second mechanism, socialization through transmission, refers to the capacity of political institutions to shape public opinion and build value-consensus (Offe 1999). The idea here is that habit-formative elements of power-sharing political institutions, such as a spirited associational life and consensus decision-making processes, encourages political participation by all and fosters general social trust.

Hypothesis 5: Greater power-sharing capacities of the state increase general social trust.

General Social Trust and Relational Trust.

Psychologists have long noted how beliefs about a class of objects can directly impact belief formation of a specific object within that particular class (Allport 1954) or how beliefs concerning a specific object can directly impact belief formation about the same or a similar object (Bandura 1977; Fishbein 1963; Fishbein and Ajzen 1975). A classic example of the former is gender and racial stereotypes derived from *role schemas* and how these role schemas produce false beliefs about a specific person within a particular gender category or racial group (see Eagly and Mladinic 1989; Haddock, Zanna, and Esses 1993; Stephan et al. 1994), while a classic example of the latter is found in the theory of cognitive dissonance where individuals are assumed to prefer belief congruence over belief dissonance and try to change their beliefs so to not hold conflicting beliefs or ideas simultaneously (Aronson 1969; Festinger 1957). In other words, beliefs impact other beliefs regardless of the generality or specificity of those beliefs, and people change or alter preexisting beliefs to coincide and align with newly developed beliefs and *vice versa*.

Similar arguments can be found in research on social cognition: schemas, or abstract cognitive structures that represent organized knowledge about a given class of objects, overlap substantially. That is, schemas about the expected behaviors of particular groups of people (i.e., role schemas) are often used as a basis for attributions about specific members of those groups (i.e., person schemas). As Druckman and Lupia (2000) write: "…when we encounter stimuli that are novel to us, we instantly form beliefs about them. These beliefs—and the preferences that follow—are not newly created; rather, they emerge from preferences and beliefs we have about objects with which we have interacted in the past" (p. 6). With respect to research on the relationship between particular social trust and general social trust, there is empirical evidence to support such a dynamic. Freitag and Traunmüller (2009), for instance, find that measures of particular social trust and general social trust indeed constitute separate dimensions and that they are positively related to each other.

From this logic, there is thus good reason to believe that an expectation about the general cooperativeness and helpfulness of strangers directly *and* positively affect beliefs about a person's trustworthiness with respect to a particular matter. In other words, *A*'s trust in *B* is a function of *A*'s belief about *B*'s trustworthiness (i.e., capacity and motivation) *and A*'s optimistic expectations about the trustworthiness of strangers. As Messick and Kramer's (2001) *shallowness hypothesis* and Brewer's (2008) notion of *depersonalized trust* suggests: people manage multiple sources of information and, as a result, must rely on available cues, schemas, and stereotypes relevant to the situation and the possible trustee when forming beliefs about the trustworthiness of another person with respect to a particular matter at hand (see also Allison and Messick 1990; Messick 1999).[11] Thus, the more optimistic a person is about the cooperativeness of strangers the more likely they are to believe that another person's interests encapsulate his or her own. This line of argumentation yields the following hypotheses:

Hypothesis 6: Greater expectations about the general cooperativeness of strangers (i.e., general social trust) increase relational trust.

Thus, Figure 3.2 encapsulates the basic argument so far: political institutions increase or decrease general social trust depending on their content and form, while general social trust increases relational trust. Note that general social trust could be inserted in Figure 3.1 as a "stereotype".

Figure 3.2. A multi-level model of general social trust and relational trust

[11] Refer to Yamagishi (2001) and others (Holmes and Rempel 1985; Yamagishi, Kikuchi, and Kosugi 1999) for a similar argument: those who are optimistic about the trustworthiness of strangers tend to have a level of "social intelligence" that assists in their assessment of, and modifies their beliefs about, another party's trustworthiness.

In the next set of hypotheses, I move from the effects of stereotypes on relational trust to the effects of perceived motivations on relational trust while proposing moderating and mediating effects.

To start, I treat trust as a cognitive-relational concept (Cook, Hardin, and Levi 2005; Farrell 2009; Hardin 2002), broadly defined as a belief about another person's trustworthiness with respect to a particular matter at hand that emerges under conditions of unknown outcomes.[12] I define trustworthiness as the capacity *and* motivation of a person to fulfill the goals and desires of another person; where capacity refers to ability and competence, and motivation refers to exertion and commitment. According to my conceptualization, A (the truster) trusts B (the trustee) when A believes that B is capable *and* motivated to perform matter Y (what A wants B to do) under conditions of uncertainty.

Within this equation, scholars of trust are particularly divided over the sources of B's commitment to A, which generally fall along two distinct analytical dimensions: (1) the extent to which B's commitment is either instrumentally or expressively motivated; and (2) the extent to which B's commitment is either externally or internally motivated. Commitments based on instrumental motivations are characterized by an actor's interest in the benefits received or costs avoided from an exchange (Emerson 1972ab). The goods, services, or outcomes of an exchange compel B to commit to A. In this regard, B's motivation is instrumental in the sense that A (and the A-B exchange relationship) is a means to achieve B's ends. In contrast, an actor's regard and respect for an exchange partner's interests characterize commitments based on expressive motivations (Parsons 1951). Here, expressive motivations represent B's genuine care and concern for A's interests as well as B's willingness to invest in the continuation of the A-B

[12] In Chapter 2 I referred to this as *relational trust*, primarily to distinguish this form of trust from the supposed *varieties of trust*. For the sake of brevity, when I invoke trust I am referring to my definition of relational trust.

exchange relationship. Under such conditions, B's motivation is expressive in the sense that A's interests (and the A-B exchange relationship) constitute B's ends, not the goods, services, or outcomes that the A-B exchange relationship can provide B.

An externally motivated commitment refers to the alignment of actors' interests from incentives exogenous to an exchange relationship (Ingram and Clay 2000; North 1990). Binding contracts, legal regulations, and social norms are all examples of extrinsic motivators that compel B to achieve A's interests: the breach of contract, the force of law, and the promise of collective shaming, respectively, motivate individuals to act on the interests of others. B fulfills his or her obligations to avoid these costs or, in some instances, to obtain benefits; thus, B's interest in A and their exchange relationship (and, conversely, A's interest in B) comes from outside of the A-B exchange relationship. An internally motivated commitment, on the other hand, refers to an actor's personal interest in an exchange partner or exchange relationship (Homans 1950, 1961). In this way, B is motivated to achieve A's interests not because of some exogenously imposed incentive, but because B personally desires goods, services, or other social outcomes A has to offer now or in the future, or because B cares for and is concerned about A's interests. With this type of motivation, actors engage in exchange to achieve their interests or the interests of others. In either case, the motivation to do so is internal to A, B, and the A-B exchange relationship.

My distinctions between *instrumental-expressive* motivations and *external-internal* motivations serve as analytical backdrops to the four major views of trust and trustworthiness in the literature. Theoretically, all four perspectives—social constraints, encapsulated interests, goodwill, and virtuous dispositions—differ along these two dimensions. And each perspective has the potential to affect the development of trust to greater or lesser degrees depending on their dimensionality. I detail each of these perspectives below.

But first, I must make a point of clarification. The *varieties of trust* outlined in Table 2.2 distinguish between *how*, *whom*, and *what*. Many of these "varieties" are not concerned with perceived motivations. Only those forms of trust found in Cell 1—where I place my definition of relational trust—explicitly consider the trustworthiness of others. As a result, *instrumental-expressive* and *external-internal* were omitted from Table 2.2 since Cells 2 through 8 do not address and are not concerned with such variation in the perceived trustworthiness of others.

Perceived Motivations. The first perspective I review—the social constraints view—underscores commitment based on instrumental motivations external to an exchange relationship. For scholars in this area, commitment can be realized when the interests of A and B are aligned, and, as a result, any social constraint (or incentive) external to an A-B exchange relationship that motivates B to do Y is sufficient for A to trust B (Dasgupta 1988; Farrell 2009). This "deterrence-based" view of trust includes Hobbesian-style situations where preexisting social constraints external to an A-B exchange relationship motivate B to do Y as well as situations where A or B introduce a social constraint to an exchange relationship (Rousseau et al. 1998). Under these conditions, the costs and benefits associated with social constraints align the interests of both actors and compel the trustee, out of self-interest, to commit to the truster. In other words, commitment based on motivating factors external to the trust relationship is sufficient for B to commit to A and, hence, A to trust B. Logically, from this point of view, trust increases linearly with the costs (or rewards) of incentives exogenous to an exchange relationship. Altogether, the arguments above inform my first working hypothesis:

Hypothesis 7: Social constraints external to an A-B exchange relationship that align the interests of A and B increase trust.

The encapsulated interest view of trust, on the other hand, suggests that motivations external to an exchange relationship are insufficient for trust, and that trust only emerges when the interests of A and B are "encapsulated"; that is, when A expects B to do Y because A knows that B has a personal interest in performing Y (Cook, Hardin, and Levi 2005; Hardin 1993, 2001, 2002). These conditions are met when B is interested in an ongoing exchange relationship with A, when A has favorable knowledge of B's trustworthiness because A has had direct personal experience with B, or when B is interested in maintaining their reputation for trustworthiness in a network of exchange relations. In each of these situations, B's interest in being trustworthy is instrumental and comes from inside (i.e., internal to) the A-B exchange relationship. As Thomas Schelling observed:

> "Trust is often achieved simply by the continuity of the relation between parties and the recognition by each that what he might gain by cheating in a given instance is outweighed by the value of the tradition of trust that makes possible a long sequence of future agreement (1960: 134-35)."

Although some scholars within the encapsulated interest literature suggest that social constraints can directly foster trust (Farrell 2009), the common consensus is that social constraints produce trust indirectly either by reducing perceived risk or by promoting social exchange that then increases A's direct knowledge of B's trustworthiness (Cook, Hardin, and Levi 2005). In any regard, proponents of encapsulated interest argue that perceived trustworthiness—at the very least—must be internal to an exchange relationship *and* a consequence of a trustee's instrumental motivations to maintain an exchange relationship with a particular truster (Cook, Hardin, and Levi 2005). Thus:

Hypothesis 8: Greater interest on the part of a trustee in maintaining a future exchange relationship with a truster increases trust.

Both the social constraint and encapsulated interest views of trust are based on instrumental motivations and risk reduction: A trusts B when A assumes that the probability of a beneficial exchange with B is high because B is interested in an ongoing exchange relationship with A (encapsulated interests view), or because B is motivated by incentives exogenous to the A-B exchange relationship (social constraints view). An alternative view suggests that trust stems not from instrumental desires and risk assessment but from expressive motivations internal to an exchange relationship, or what some scholars refer to as “goodwill” (Baier 1986; Jones 1996). On the goodwill account of trust, if A believes that B cares for or is concerned about A’s interests, then A trusts B. But if A believes that B will perform matter Y to achieve B’s interests, then this instrumental motivation—which is the basis of the social constraint and encapsulated interest views—is insufficient for trust. To put it differently, B must treat A as an end-in-themselves with dignity and respect for A to trust B.[13] If B does not treat A as an end-in-themselves, but, instead, treats A as a means-to-an-end achieving their personal interests, then the goodwill view of trust predicts that A will not trust B. A will trust B *if and only if* A believes that B will act in a trustworthy manner toward A, where B’s commitment is motivated by goodwill and not simply by encapsulated interests or social constraints.

[13] Keep in mind that A’s interests are not B’s sole (or cardinal) ends, goals, or interests. If A and B enter an exchange, B values what A can provide to B and A values what B can provide to A. In this case, both A and B value something that the other actor can provide, and both actors see that the other actor values something which is incompatible or conflicting with the things he or she values. For instance, say A owns a car in need of repairs and B is an auto mechanic. Classic rational choice models assume that A wants to receive quality and legitimate repairs at the lowest possible cost, while B wants to maximize profits at the possible expense of providing quality and legitimate repairs. For social constraint views, rules and regulations would be grounds for trust under these conditions; for encapsulated interest views, B’s perceived motivation or commitment to an ongoing exchange relationship with A would be grounds for trust under these conditions; and, for goodwill views, B’s willingness and ability to care for A’s interests, even if those goods or services are not entirely harmonious with B’s interests, are grounds for trust under these conditions. In other words, B’s interests include his or her own interests and as well the interests of A. And for A to trust B, B must reconcile this tension between his or her own interests and A’s interests by showing that he or she cares for and is concerned about A’s interests. This does not suggest that B necessarily eschews his or her own interests, but it does imply that B compromises some of his or her own interests. Other real-world examples include employer-employee relationships where companies provide safe and healthy work environments to their employees at the expense of profits, or mentor-student relationships where mentors provide countless hours of guidance at the expense of their own careers and publishing records.

It is important to note that B's trustworthiness and commitment on the goodwill account is not necessarily a character trait that springs from moral dispositions or a willingness to follow moral norms and codes. Take, for instance, person B who is a convicted child rapist. By all accounts, he or she is not a virtuous or moralistic person, but nonetheless could care for his or her sibling's interests on various matters. Under the goodwill view of trust, sibling A could trust convicted child rapist B with respect to matter Y because of B's goodwill toward A. Actor B's trustworthiness, in other words, lies within the scope of his or her relationship with A no matter how disreputable or amoral B might be. This argument, like the social constraint and encapsulated interest views of trust, is a consequentialist argument—people act to achieve particular outcomes and consequences. But unlike the social contract and encapsulated interest views, which are based on instrumental motivations, B exchanges with A to achieve A's interests in Y because A's interests are among B's interests.[14] While Mayer et al. (1995), Offer (1997), and Molm et al. (2007) refer to the goodwill account of trustworthiness as "benevolence", "regard" or "expressive value", respectively, their conceptualizations nonetheless share a commonality: actor B regards, cares for, or is concerned about actor A's interests (see also Clark and Mills 1979). Thus:

> **Hypothesis 9**: Greater care for or concern about a truster's interests on the part of a trustee increases trust.

A final view of perceived motivation defines trustworthiness as a virtue. Recall the goodwill view of trust, which centers expressive motivations internal to an exchange relationship. This view of trust is explicitly reserved for B's goodwill toward A on matter Y, not

[14] On the social constraint view, A trusts B when B's interests are aligned with A's interests because the rewards (or punishments) associated with social constraints motivate B to achieve A's interests. On the encapsulated interest view, A trusts B when B's interests are to maintain an exchange relationship with A because the A-B exchange relationship achieves B's interests.

B's goodwill toward everyone and all matters. The virtuous disposition view of trust, on the other hand, treats trustworthiness as a character trait that virtuous people possess—it is a disposition to be trustworthy regardless of the exchange relationship. To illustrate, the child rapist might show goodwill toward their sibling and be trustworthy within the scope of their relationship, or, as Potter (2002) states, posses "specific trustworthiness": trustworthiness that is particular to certain relationships. But, generally, we would not describe the child rapist as someone with a disposition to be trustworthy toward everyone, or possess "full trustworthiness" (Potter 2002).

According to this view, trustworthiness is a character trait engrained in a trustee—it is a disposition to answer trust appropriately given an actor's capabilities. Or, as Potter (2002) writes, trustworthiness based on Aristotelian conceptions of virtue where a trustworthy person is "…one who can be counted on, as a matter of the sort of person he or she is, to take care of those things that others entrust to one (p. 16)." Thus, commitment is realized when actor A believes that actor B cares for, or is concerned about, every actor's interests with respect to matter Y; that is, B treats everyone as an end-in-themselves with dignity and respect. This line of argumentation produces the following working hypothesis:

Hypothesis 10: Greater care for or concern about everyone's interests on the part of a trustee increases trust.

To summarize, all four competing views of trust and trustworthiness differ with respect to two distinct analytical dimensions: *instrumental-expressive* motivations and *external-internal* motivations. Encapsulated interests and social constraints exemplify instrumental motivations, while goodwill and virtuous dispositions typify expressive motivations. And, according to the second dimension, encapsulated interests, goodwill, and virtuous dispositions characterize internal motivations, while social constraints epitomize external motivations.

In an effort to contribute to the literature, I use these dimensions to organize and compare the amounts of trust produced by each. I propose that (a) perceived expressive motivations internal to an exchange relationship generate the greatest trust, (b) perceived instrumental motivations external to an exchange relationship generate the least trust, and (c) perceived instrumental motivations internal to an exchange relationship yield levels of trust somewhere in-between.[15] Thus:

Hypothesis 11: Goodwill and virtuous dispositions yield greater trust than encapsulated interests which, in turn, produce greater trust than social constraints.

My goal is to also investigate the conditions under which social constraints produce trust as well as the mechanisms connecting commitment to trust. To that end, I explore several novel moderating and mediating effects. Below I outline these effects in greater detail.

Causal Attributions. Recall the social constraints view of trust: incentives exogenous to an A-B exchange relationship that align the interests of A and B are sufficient to increase A's expectation about B's trustworthiness with respect to matter Y. In this regard, factors internal to A, B, or an A-B exchange relationship increase trust to the same extent as factors external to A, B, and an A-B exchange relationship. While this theoretical model has merit, another tradition claims that social constraints, such as informal sanctions and legal enforcements, actually undermine trust and cooperation (Diamond 1971; Gellner 1988; Taylor 1987; Titmuss 1970).

The general argument put forth by scholars in this area is as follows: when an actor is

[15] The two dimensions are not necessarily orthogonal: perceived expressive motivations external to an exchange relationship do not exist. Although soft incentives such as collective shaming or ostracism might constitute such a combination, their motivating power lies beyond the A-B exchange relationship and produces cooperation not because actor B cares for or is concerned about actor A's interests but because actor B fears or wishes to avoid the soft incentive.

intrinsically motivated to perform a given act, and is subject to an external reward or punishment, the actor will attribute their personal motivation, and eventual action, to the extrinsic device rather than to their self-determined intrinsic desires (Deci 1971, 1975; Fehr and Falk 2001; Greene et al. 1976). External motivations in this instance replace, or *crowd out*, internal motivations, and, as a result, an actor's intrinsic desire to perform a given act decreases (Deci at al. 1999). A classic example of this process is one every parent faces: to reward, punish, or ignore a child's behavior. For instance, Deci and Flaste (1995) found that if children were given "gold" stars to practice the violin, the children lost interest in trying hard pieces and, instead, improved their skills only by playing and practicing easy pieces so as to receive the reward. Despite the simplicity of "gold" stars and violin practice, the broader implication of this argument—that extrinsic rewards undermine and crowd-out intrinsic motivations—suggests that intrinsically motivated cooperation dissipates in the presence of social constraints (Bohnet, Frey, and Huck 2001; Bowles 2008; Frey and Jegen 2001; Reeson and Tisdell 2007; Taylor 1987).[16]

The scope of this *crowding-out effect* extends beyond one's own intrinsic motivations to beliefs about the intrinsic motivations of others. Similar to the internal-external divide outlined above, Mulder et al. (2006) and others (Chen, Pillutla, and Yao 2009; Irwin et al., in press; Malhotra and Murnighan 2002; Simpson and Eriksson 2009) have argued that by serving as signals of distrust, social constraints simultaneously *increase* the belief that trusted actors are externally motivated to cooperate but *decrease* the belief that trusted actors are internally motivated to cooperate. To put it differently, social constraints act as countervailing forces promoting and undermining certain forms of trust, with overall trust greatest under conditions of

[16] For similar ideas, but from different theoretical standpoints, see Fehr and Falk (2001), Frey (1993, 2000), and Tenbrunsel and Messick (2001). Generally, these authors argue that social constraints undermine moral and ethical motives in favor of strategic and calculative motives, which crowds-out spontaneous cooperation.

weak external control and lowest under conditions of strong external control.

Breaking from this literature, I argue, instead, that social constraints do, in fact, increase trust but that the size and magnitude of this effect is conditional on whether the trustworthiness of others is perceived as internally or externally motivated. But how can A believe that B's trustworthiness is internally motivated if external motivators, such as binding contracts and monetary regulations, align A's interests and B's interests? I propose that a cognitive bias familiar to social psychologists can reconcile this contradiction: the fundamental attribution error (FAE) and other forms of correspondence bias (CB) (Gilbert and Malone 1995; Jones and Harris 1967; Ross 1977). FAE is the tendency to overestimate the effect of disposition (or internal psychology) and underestimate the effect of the situation (or external factors) in explaining social behavior, while CB is the tendency to draw dispositional inferences from behavior regardless of situational factors. For instance, if you provide me with poor service at a restaurant, I might attribute your poor service to laziness or carelessness—dispositional factors—where, in reality, a death in the family—the situation—influenced your poor service. If I, as a customer, was aware of the death in your family but still attributed your poor service to laziness and carelessness (either automatically or deliberatively), FAE would be at work. If I didn't know about the death in your family and attributed your poor service to laziness and carelessness (either automatically or deliberatively), CB would be at work.

Despite the centrality of perceived behavior for both FAE and CB, I expect causal attributions and attribution biases to influence explanations of observed behavior *and* expectations of future behavior. I make such claims as many of the mechanisms accounting for FAE and CB are also at work when expectations about a person's trustworthiness are formed (Gilbert and Malone 1995). First, a person may *lack awareness* of the causal role a situational force might play in the prior and future behavior of others. Second, a person may be aware of the causal role a situational force might play but hold *unrealistic expectations* about how the situation affects another's prior and future behavior. Thus, *lack of awareness* and *unrealistic expectations* should produce expectations of trustworthiness that underestimate the casual role of situational forces.

Based on the literature above, I expect social constraints external to an A-B exchange relationship to increase trust, with stronger positive effects when another's trustworthiness is perceived as externally motivated and weaker positive effects when another's trustworthiness is perceived as internally motivated. But I also expect greater trust among actors who underestimate the effects of social constraints (and draw dispositional inferences regarding another's trustworthiness) than actors who correctly estimate and attribute the effects of social constraints to the situation. In other words, social constraints do not necessarily undermine or crowd-out trust. Instead, the effect of social constraints on trust varies to the extent that one draws dispositional or situational expectations of another's trustworthiness.[17] Thus:

Hypothesis 12: Social constraints and causal attributions interact in their influence on trust.

Other-Praising Emotions. As detailed above, there is little argument in the social

[17] The argument proposed here differs substantially from the "institutional ambiguity" argument proposed by Farrell (2009). For Farrell, institutions are social rules that not only buttress and support common knowledge, but also apply to certain *classes* of actors rather than to individuals. For instance, some academic departments might hold the following informal norm: when actors of type *A* (professors) are in social situations of type *C* (advising), together with actors of type *B* (graduate students), then actors of type *A* and type *B* should not do *Y* (drink together). Obviously, in situations like this there is some degree of ambiguity: it is unclear how the informal norm applies to the situation or what happens if *A* and *B* violate said rule. What constitutes advising? Or drinking together? Because of this ambiguity and applicability of institutions to classes of actors instead of specific individuals, Farrell (2009) argues that "…institutions may provide information that is *useful* to actors trying to determine whether to trust each other, without necessarily *determining* their actions in ways that would drive out trust (emphases in original) (p. 49)." According to this argument, actors are fully aware of the external forces that compel actors of certain classes to behave a particular way—it is the ambiguity of institutions and not the attribution of external motivating forces that increases trust.

sciences about whether trustworthiness begets trust (see Barber 1983; Lewis and Weigert 1985; Luhmann 1979 for exceptions). What remains unresolved, however, are the types of motivations sufficient to produce trust and whether some perceived motivations have stronger effects than others. To address these outstanding issues, I first revisit instrumental and expressive motivations internal to exchange relationships—encapsulated interests, goodwill, and virtuous dispositions—and then pinpoint why each perspective generates different amounts of trust depending on if and how other-praising emotions are triggered.

Russell Hardin suggests that the only reasonable account of trust is one that includes the concept of encapsulation, where "…the trusted encapsulates the interests of the truster and therefore has incentive to be trustworthy in fulfilling the truster's trust (2002: 24)". Hardin proposes that encapsulation is most common under conditions of ongoing exchange relationships (1993, 2001, 2002), as the prospect of future exchange motivates the trusted to consider and take into account the interests of a truster. Besides repeated exchange, a number of other sociologically relevant factors can stimulate encapsulation, including concern for one's reputation (Cook et al. 2005), certain types of institutional and normative constraints (Farrell 2009), and perceptions of goodwill and virtue (Hardin 2001).

In other words, Russell Hardin's encapsulated-interest account of trust characterizes goodwill and virtuous dispositions as forms of trustworthiness that provide people with reasons to trust. For goodwill, the trusted counts the interests of the truster to some extent as their own (i.e., A's utility is partially included in the utility of B), and, hence, A's welfare matters to B and A's interests are thus encapsulated by B. For virtuous dispositions, the trusted counts the interests of everyone to some extent as their own, and fulfills trust placed in them because of who they are as people; thus, everyone's welfare matters to B and, as a consequence, everyone's interests are encapsulated by B. Although goodwill informs many of our relationships with close friends and immediate family and virtuous dispositions establish some of our interactions with religious figures as well as charismatic political leaders, Hardin insists that neither goodwill nor virtuous dispositions form the bulk of our trust relationships. Instead, the myriad interactions we encounter on a daily basis that require trust consist of motivations where the trusted merely treats the truster as a means to an end: as an individual who can actualize the trustee's interests.

What Hardin proposes, then, is an interest-based rational choice model of trust, where a truster might trust a trustee for very different reasons but as long as these reasons solidify the process of encapsulation then trust will follow. In other words, the belief that you care for and are concerned about my interests (i.e., you treat me as an end in itself) should yield trust to the same extent as the belief that you value the future of our exchange relationship or your personal reputation (i.e., you treat me as a means to an end). As Hardin writes:

> "We commonly trust our parents, siblings, close friends, spouses, and others who are close to us…within varying limits. One might wish to call these normative instances of trust. But the actual trusting is not different from purely interested cases under the trust game or iterated exchange. If there is a normative quality to these instances from love and so forth, it is in the fact of the love or friendship and the caring for another that follows from these (p. 24)".

To put it differently, Hardin believes that perceived commitment based on instrumental motivations (means to an end) does not differ in the production of trust from perceived commitment based on expressive motivations (end in itself).

Yet, instrumental and expressive motivations are analytically distinct, and should produce differential levels of trust depending on the mechanisms triggered in their presence or absence. Drawing on the other-praising emotions literature in psychology (Algoe and Haidt 2009; Haidt 2003), I propose two such mechanisms: gratitude and admiration.[18] Other-praising (or

[18] The social exchange literature has long suspected a relationship between exchange structure and sentiment (e.g.,

evaluative) emotions are positive emotions individuals experience by witnessing or directly benefiting from the exemplary (and sometimes virtuous) actions of others (Haidt 2003; Algoe and Haidt 2009). Within this family of emotions, gratitude and admiration are the most common. Gratitude is a positive emotional reaction to the benefits received from others (Tsang 2006). It is frequently defined as the state of being grateful—a warm and friendly feeling toward a benefactor—triggered by the perception that another has intentionally and voluntarily done a good deed for the self (Haidt 2003). Admiration, like gratitude, is a positive emotional reaction, but unlike gratitude it is a positive emotional reaction to acts of charity, generosity, and displays of virtue as well as extraordinary displays of skill, talent, and achievement that benefit third parties (Haidt 2003; Immordino-Yang et al. 2009; Ortony et al. 1988). It is, in other words, the "warm", uplifting feelings of awe, elevation, and inspiration people experience when witnessing moral and non-moral excellence (Immordino-Yang et al. 2009). Recent social psychological research has linked other-praising emotions to a number of outcomes, including well-being (Emmons and McCullough 2003), social cohesion (Algoe, Haidt and Gable 2008), generosity (Lambert, Graham and Fincham 2009), and indirect reciprocity (McCullough, Kimeldorf and Cohen 2008). In spite of this, no sociological research to date has explored the types of commitment sufficient to generate other-praising emotions nor investigated if and how other-praising emotions impact trust.

I propose that other-praising emotions—gratitude and admiration in particular—mediate

---

Blau 1964), with recent research showing how positive feelings toward *and* positive assessments of an exchange partner or group—what social exchange scholars refer to as *affective regard* for dyads (Kuwabara 2011; Molm et al. 2007) and *affective attachment* for networks and groups (Lawler et al. 2008)—depend on how resources are exchanged, either bilaterally (e.g., negotiated exchange) or unilaterally (e.g., reciprocal exchange), and how actors view exchange, either cooperatively or competitively (Kuwabara 2011). This literature, however, has a tendency to (a) treat trust, affective regard, and cohesion as indicators of other concepts, such as sentiment (Molm et al 2007) or solidarity (Molm et al. 2007), without exploring if and how the indicators interrelate, and (b) treat other-praising emotions (e.g., gratitude) merely as outcomes and not as causes (Lawler et al. 2008).

the relationship between perceived motivations and trust, but that some perceived motivations generate stronger feelings of gratitude and admiration than others and, as a result, produce higher levels of trust than others. The plausibility of these hypotheses is based on two lines of research. First, theory suggests that other-praising emotions can be produced by the receipt of positive benefits even if a benefactor's motivations are purely instrumental (Elster 1999, 2007), but that other-praising emotions are strongest when a benefactor's actions are perceived as benevolent and altruistic (Algoe and Haidt 2008; McCullough et al. 2001). As a result, I expect perceived commitments based on instrumental motivations sufficient conditions for gratitude. And since gratitude is a state of gratefulness for the receipt of good deeds—intentionally and voluntarily provided—I also expect perceived commitments based on expressive motivations to yield the highest levels of gratitude. If the actions of a virtuous benefactor directly affect a beneficiary and not merely third-parties, then virtuous dispositions will produce levels of gratitude comparable to goodwill. With respect to admiration, I only expect perceived motivations based on virtuous dispositions to increase admiration: virtuous actors are concerned with and have benefited the interests of third-parties and the truster. Thus:

Hypothesis 13: Encapsulated interests increase gratitude.

Hypothesis 14: Goodwill and virtuous dispositions increase gratitude to a greater extent than encapsulated interests.

Hypothesis 15: Virtuous dispositions increase admiration.

Second, the study of emotions has a long history in sociology (Scheff 1983; Thoits 1989; Turner and Stets 2006), but it is only recently that social scientists have begun to systematically explore the relationship between emotions and beliefs. The recency of these developments is surprising given countless proverbs and love stories devoted to this issue—from "the moment he falls in love even the wisest man no longer sees anything as it really is" to "we believe easily what we hope and what we fear". With respect to emotions and trust, social scientists have long suspected such a relationship (e.g., Lewis and Weigert 1985; McAllister 1995; Rempel et al. 1985), and have shown that mood, emotions, and hormones can stimulate trust (Baumgartner et al. 2008; Kosfeld et al. 2005; Lount 2010; Dunn and Schweitzer 2005; Rempel et al. 1985). Although little work to date has explored if and how other-praising emotions impact trust (Dunning and Fetchenhauer 2010), theory suggests that positive emotions associated with exchange should (i) motivate individuals to build their intellectual, social, and material resources for the future, which broadens and changes an actor's cognitions and beliefs (Algoe and Haidt 2008; Fredrickson 1998; Isen 1987), and (ii) compel actors to interpret the ultimate source of their positive feelings as coming from the exchange relationship, which heightens relational attachments (Lawler and Yoon 1993, 1996). Thus, positive emotions increase trust to the extent that relations are perceived as unifying, integrating, and repeating.

From this, I expect gratitude and admiration to increase trust, but for gratitude to exert a stronger effect on trust than admiration as the focal actor for gratitude is the truster, while the focal actors for admiration are third-parties. Altogether, the literature and arguments outlined above yield the following hypotheses:

Hypothesis 16: Admiration increases trust.

Hypothesis 17: Gratitude increases trust to a greater extent than admiration.

Competence and Exertion. The hypotheses outlined above strictly refer to commitment, which, according to my definition, constitutes a single component of trustworthiness. Following Mayer et al. (1995) as well as Elsbach and Elofson (2000), I explore other components of trustworthiness, namely those of competence and exertion (Deutsch 1960; Kee and Knox 1970).

I argue that each of these elements informs A’s beliefs about B’s trustworthiness with respect to matter Y *and* that a more holistic analysis of trust should explore each of these elements instead of restricting analyses to motivation and commitment (see Hardin 2002). Thus:

Hypothesis 18: Exertion on the part of a trustee increases trust.

Hypothesis 19: Competence on the part of a trustee increases trust.

Secondary Hypotheses

The next set of hypotheses explore outstanding issues in the trust literature and derive propositions about trust formation from theoretical traditions within sociology (status characteristics theory and social identity theory) and psychology (halo effects and negativity biases).

Between- and Within-Person Variations in Trust. Another key contribution of this dissertation is to empirically adjudicate between different conceptualizations of trust. As noted in chapter 2, conceptualizations of trust usually differ along three broad theoretical dimensions, where one camp views trust as “moralistic” and “dispositional” and another camp views trust as “strategic” and “learned.” The first camp tends to argue that trust is less about instrumental motives and principles of rational choice and more about altruism and moral norms (Fukuyama 1995; Mansbridge 1999). That is, trust is based on a shared ethical code and a set of fundamental values (Almond and Verba 1963; Banfield 1958; Inglehart 1988, 1990; Uslaner 2000, 2002). In this regard, A merely trusts, or A trusts B without concern for the situation or the matters at hand—I trust because I believe in the benevolence of human nature. The alternative camp argues that trust is strategic (i.e., people trust others to realize their interests), is dependent on the situation and the matters at hand, and is learned through direct experience and shared information (Cook, Hardin, and Levi 2005; Farrell 2009; Hardin 2002, 2006). For this group of scholars, trust encapsulates the following: A trusts B to do Y because B is trustworthy with respect to Y but A will not trust B to do X if B is untrustworthy with respect to X. Both camps propose between-person variation in trust either because of socialized values and morals or because of learned experiences, while only the “strategic” camp predicts within-person variation in trust as conditions or matters change. Thus:

Hypothesis 20: Trust varies between individuals.

Hypothesis 21: Trust varies within individuals as conditions change.

Status Characteristics and Social Identities. My concepts of trust and trustworthiness also fall under the purview of expectation states theory and status characteristics theory (Berger and Conner 1969; Berger, Cohen, and Zelditch 1972). Central to this theory is the concept of a *status characteristic*: a characteristic or attribute of an actor that has two or more states that are differentially evaluated in terms of prestige, esteem, or worth. Each state is associated with distinct performance expectations (i.e., beliefs about how an individual will perform or behave given their state of the status characteristics) that range from the *specific* (i.e., expectations about how an individual will act in a clearly defined situation) to the *general* (i.e., expectations about how an individual will act in any situation). Diffuse status characteristics such as gender are said to invoke general expectation states, while specific status characteristics such as mathematical ability are said to invoke specific expectation states.

Recall that trust partly consists of performance expectations about a trustee’s abilities and competencies (in addition to exertion and commitment), which a trustee’s diffuse status characteristics should influence. To illustrate, Berger and colleagues propose that because gender—a diffuse status characteristic that activates general and specific expectations about performance—is traditionally correlated with prestige and status differences in a society, differential expectations exist concerning the abilities of men and women.[19] Although status characteristics theory is usually restricted to task-oriented groups, I expect diffuse status characteristics, like gender, to differentially impact performance expectations about B (the trustee) when B's competence with respect to matter Y produces differential rewards for A (the truster). In short, I investigate the impact of diffuse status characteristics on trust and expect these effects to vary by "task-relevant cues", cues perceived to be related to B's ability to perform Y (Dovidio, Heltman, Brown, Ellyson, and Keating 1988). Thus:

Hypothesis 22: Diffuse status characteristics yield differential levels of trust, especially when diffuse status characteristics are perceived to be task relevant.

My next hypothesis explores the effect of social identity on trust. Social identity theory is premised on the idea that individuals evaluate themselves in terms of social categories *and* distinguish themselves from other groups, collectivities, or people (Abrams and Hogg 1990). According to this tradition, categories and groups can be (a) general (as in "American" or "Catholic") or, as Tajfel has shown (Tajfel 1970, 1981, 1982), specific and "minimal" (as in preferences for Klee or Kandinsky paintings); (b) nested (as in "Seattleite" and "Washingtonian"); and (c) crosscutting (as in "female" and "student"). The commonality between these dimensions is that they all represent peoples' "place in a society" (see Klandermans 2014). In other words, a person's self-concept partially derives from their knowledge of and experiences with "places in society". Once individuals come to identity with a salient social category (i.e., a "place in society"), they have a tendency to think in terms of similarities for in-group members and differences for out-group members (Deaux 1996). From this, individuals will treat in-group members (i.e., those with whom they identify) more

[19] This is in contrast to a specific status

favorably than out-group members (Brewer and Miller 1996; Stets and Burke 2000). The implication is that (i) exchange decisions will be biased toward in-group members (Brewer and Kramer 1986; Simpson and Macy 2004), and (ii) A's trust in B will form along salient social categories like race and gender (Brewer 1999; Brewer and Campbell 1976; Orbell, Dawes, and Schwartz-Shea 1994). Thus, social identity theory predicts that shared membership in a salient social category, rather than status characteristics of a trustee, should bias belief formation about the trustworthiness of in-group and out-group members. Thus:

> **Hypothesis 23**: A truster and a trustee's common membership in a salient social category increases trust to a greater extent than when a truster and a trustee belong to different social categories.

Halo Effects and Negativity Biases. Since trust is a belief it can also fall prey to other cognitive biases, such as the halo effect. The halo effect, or halo error, is a cognitive bias in which one's beliefs, expectations, or judgments about another person's character (or behavior) with respect to a particular matter are influenced by positive impressions of that person's character (or behavior) with respect to an entirely unrelated matter or domain (Thorndike 1920). This cognitive bias is frequently observed in numerous situations and contexts, including politics, marketing, education, and the legal system (e.g., Abikoff et al. 1993; Sigall and Ostrove 1975). For instance, seminal works on the subject have shown that individuals judge attractive people as happier and more successful in their lives than less attractive people (Dion et al. 1972), but also that individuals are more likely to be persuaded by likeable and attractive people than unlikeable and unattractive people (Chaiken 1980). From this, then, it is not difficult to imagine how the attractiveness of a political candidate might trump their actual politics and directly influence voting behavior.

In relation to trust, I expect A's positive evaluation of B with respect to matter Z to influence A's trust in B with respect to unrelated matter Y. This would suggest that a successful exchange with you in a separate exchange domain, such as successful computer repairs, would influence my trust in you with respect to a different exchange domain, such as car repairs. But, following prior work on negativity bias and the positive-negative asymmetry effect (Baumeister et al. 2001; Koenig and Jaswal 2011; Vaish et al. 2008), I expect A's negative evaluations about B with respect to matter Z to carry more weight than equally valenced positive evaluations about B with respect to matter Z when forming trust in B with respect to unrelated matter Y. In other words, the pitchfork effect on trust should be much greater than the halo effect (Hardin 2002). Thus:

Hypothesis 24: Positive evaluations of a trustee's trustworthiness in one exchange domain increases trust in a different exchange domain.

Hypothesis 25: Negative evaluations of a trustee's trustworthiness in one exchange domain decreases trust in a different exchange domain.

Hypothesis 26: The effect of negative evaluations on trust (**hypothesis 24**) is greater than the effect of positive evaluations (**hypothesis 25**).

In the forthcoming chapters I develop and implement novel vignette experiments intended to understand the origins of trust. I test these propositions with data from Amazon.com Mechanical Turk workers, University of Washington undergraduates, the World Values Survey, and other cross-national public opinion polls. And, finally, I analyze this data with random- and fixed-effects panel models, multilevel mixed effects models, and multilevel mixed effects mediation models.

CHAPTER 4: THE INSTITUTIONAL ORIGINS OF GENERAL SOCIAL TRUST

Interest in trust has a long tradition in the social sciences and is considered a core dimension of social capital (Coleman 1990; Fukuyama 1995; Putnam 1993, 2000). For Georg Simmel, trust is "one of the most synthetic forces of society (1950: 326)"; for Robert Putnam, "honesty and trust lubricate the inevitable frictions of social life (2000: 135)"; and for the economist Kenneth Arrow, "virtually every commercial transaction has within itself an element of trust (1972: 357)." Despite the prolonged interdisciplinary significance of trust, only in the last two decades have scholars of social capital considered the causes and consequences of an alternative yet closely related microfoundation known as "generalized trust" (Nannestad 2008) or what is frequently referred to as "general social trust" (Newton and Zmerli 2011). At the heart of this growing literature is the idea that general social trust, or expectations about the cooperativeness of strangers with respect to all matters, is important not just for the development of trust in known others but also for social order at large: it fosters cooperation across various political, economic, and social realms, and is thought to produce normatively desirable outcomes such as economic growth (Roth 2009; Tabellini 2010), life satisfaction (Uslaner 2002), civic morality (Putnam 2000), and low crime rates (Sampson, Raudenbush, and Earls 1997).

As one might suspect, the possible contextual sources of general social trust are as equally diverse as its consequences (Fehr 2009; Nannestad 2008; Smith 2010). For instance, numerous cross-national studies find political institutions to be closely related to general social trust (Delhey and Newton 2005; Freitag and Bühlmann 2009; Herreros 2004; Knack and Keefer 1997; Paxton 2002; Robbins 2011; Rothstein and Stolle 2008; Zak and Knack 2001). Yet, controversy surrounds arguments about which political institutions actually shape general social trust in a given population. Some studies emphasize the effectiveness and quality of legal property rights institutions as the primary source of general social trust (Herreros 2004), while others underscore the power-sharing capacities of the state (Paxton 2002), the government regulation of markets (Aghion, Algan, Cahuc, and Shleifer 2010), or the universality of socioeconomic provisions (Rothstein and Stolle 2008). But since cross-sectional studies populate this literature, it is plausible that issues of unobserved heterogeneity and simultaneity bias the results.

To address these problems and advance our understanding of which political institutions influence general social trust through time, I fit fixed- and random-effects models to unbalanced, repeated cross-sectional data drawn from a wide variety of cross-national public opinion data sets administered in 74 countries between the years 1980 and 2009. The panel structure of this data allowed me to address issues of endogeneity bias and unobserved heterogeneity and provided an opportunity to explore the underlying relationship between political institutions and general social trust. In other words, I was able to assess whether changes in political institutions actually produced changes in general social trust.

The findings showed that general social trust increases at an increasing rate with the quality of property rights institutions, that labor market regulations increase general social trust, and that increases in power-sharing capacities of the state decrease general social trust. While general social trust was significantly related to the government regulation of credit, business, and economic markets as well as the universality of socioeconomic provisions, both institutional measures were more sensitive to influential cases, to model specification checks, and to the types of countries included than the other political-institutional factors. Altogether, the results illuminate how political institutions simultaneously promote and undermine general social trust.

Theory

Most social scientists agree that our daily activities consist of situations in which we rely on actors we know very little about to help us accomplish tasks that are difficult to do alone, such as hire a lawyer to represent us in court, consult a dermatologist to screen us for skin cancer, or employ a computer scientist to design a webpage. It is commonly recognized that general social trust—or expectations about the cooperativeness of individuals in general—is sufficient to support such transactions, and that without general social trust expectations of wrongdoing cloud exchange and stunt mutually beneficial outcomes. A key question for policymakers and social scientists then is how best to foster general social trust in a given population. Interestingly, many scholars have pointed to the state as one such source and have outlined four competing political-institutional factors that foster or undermine general social trust.

First, for some scholars, political-institutional constraints that induce actors we cannot readily judge or monitor to act on our interests and to behave in ways we might call reliable is what fosters general social trust in a society (Cook, Hardin, and Levi 2005; Hardin 2002; North 1990). Among the variety of state enforcement mechanisms that accomplish this task, rules of the game manifested as legal property rights are the most critical (Herreros 2004, 2008; Levi 1998; Rothstein and Stolle 2008). Indirectly, legal property rights buttress an environment where people can take risks and cooperate with others they know nothing about even if neither actor finds the other actor trustworthy or if neither actor holds expectations about the cooperativeness of individuals in general. If both actors take a risk and successfully exchange with the other, then both actors will update their beliefs about the other's trustworthiness but also update their beliefs about the cooperativeness of people in general (Cook, Hardin, and Levi 2005; Hardin 2002). The more interactions an actor experiences like this, the more optimistic they will become about generalized others. Directly, legal property rights and other “rules of the game” allow individuals to feel safe and secure in their daily exchanges (Knight 2001). As long as these constraints foster the perception that the state is able to minimize opportunism, then legal property rights will promote general social trust. If, on the other hand, legal property rights are weak or absent, then general social trust in a society will wane. In either case, legal property rights institutions and other “rules of the game” directly *and* indirectly nurture general social trust according to this tradition.

This relationship, however, might be not be linear but curvilinear: “The worst legal regime is not one in which contracts cannot be enforced but one with an intermediate level of enforceability (Bohnet et al. 2001: 136).” Strictly speaking, regimes with intermediate levels of property rights protection neither adequately prosecute malfeasance nor leave the guarantee of exchanges solely to decentralized systems of informal regulation. Both of which foster general social trust but are noticeably absent from states with moderate levels of contract enforcement and property rights protection. In other words, strong states and weak states promote general social trust, while intermediate states lead to its collapse. Thus: *greater legal property rights protection increase general social trust at an increasing rate, forming a U-shaped curve* (hypothesis 1).

Second, other social scientists suggest that political institutions actually undermine and crowd-out the very things they are implemented to promote, such as civil society, social cohesion, and general social trust (Gellner 1988; Taylor 1976, 1982, 1987; Titmuss 1970). Central to this crowding-out perspective is the notion of *state dependence*: in the presence of centralized market regulations, individuals come to depend on those regulations and agents of the state, instead of each other, to promote mutually beneficial market outcomes (see Aghion et al.

2010 for a similar argument). Economic exchange, as a consequence, becomes less a result of spontaneous cooperation and mutual dependence and more a result of centralized market regulation. This ultimately leads to the deterioration of community and civil society, a self-reinforcing dependence on political institutions to foster economic transactions, and a decline in general social trust. The implication is that general social trust flourishes in the absence of government regulation, and that general social trust wanes, although does not entirely disappear, in the presence of government regulation. Thus: *greater government regulation of economic, business, and credit markets decrease general social trust* (hypothesis 2).

Yet, not all centralized market regulations undermine general social trust. Efforts by the state to control labor markets with minimum wage laws and prescriptions for collective bargaining, for instance, might increase general social trust. In effect, labor market regulations expand the rights of citizens and integrate the working class into the larger social system (Bendix 1964). As Marshall (1950) classically argued, rights of citizens foster egalitarian economic systems and nationalistic social bonds that unify communities. Both of which plant the seeds for general social trust, especially among those who benefit from workers' rights. In short, centralized market regulations can either increase or decrease general social trust depending on the type of market being regulated. Thus: *greater government regulation of labor markets increase general social trust* (hypothesis 3).

Third, while some scholars emphasize political-institutional security and market regulation, others underscore the extent to which political institutions publicly allocate resources and are universally oriented (Rothstein and Stolle 2008; Rothstein and Uslaner 2005). The argument here is that universal political institutions, such as welfare states, reduce the perception that one's government sides with certain economic actors over others. This helps generate the impression that each citizen has an equal opportunity for success and failure, creating a sense of shared fate, collective cohesion, and group solidarity that yields general social trust (Rothstein and Stolle 2008; Rothstein and Stolle 2003). In other words, unfair governments foster economic inequality, inequality of opportunity, and unevenly distributed resources. When this occurs, social divisions and class hierarchies increase in saliency and perceptions of shared fate decline along with trust in generalized others (Uslaner 2002). The single way to overcome this outcome is with a government that equally divides public resources and enacts universal social welfare programs focused on leveling socioeconomic differences. Thus: *greater universality of socioeconomic provisions increase general social trust* (hypothesis 4).

Fourth, some scholars suggest that power-sharing capacities of the state is what fuels general social trust (Levi 1996; Lijphart 1999; Paxton 2002). Two possible mechanisms account for this effect. The first, cognitive inferences, suggests that certain kinds of experiences are critical for the development of general social trust (Rothstein and Stolle 2003). In particular, if citizens are embedded within a partisan regime that is biased toward certain political and economic interests, then this regime will foster distrust among the disadvantaged and excluded groups. If, on the other hand, political institutions are non-partisan and welcome all interests to the political process, then general social trust will grow. Authoritarian and totalitarian regimes generally fall with the former, while democracies and systems of proportional representation generally fall with the latter. The second mechanism, socialization through transmission, refers to the capacity of political institutions to shape public opinion and build value-consensus (Offe 1999). The idea here is that habit-formative elements of power-sharing political institutions, such as a spirited associational life and consensus decision-making processes, encourages political participation by all and fosters general social trust. Thus: *greater power-sharing* *capacities of the state increase general social trust* (hypothesis 5).

To summarize, the relationship between political institutions and general social trust is complex and dynamic: some political-institutional elements foster general social trust, while others undermine its development. These elements include property rights institutions, government regulation of economic, credit, and business markets, centralized regulation of labor markets, universal socioeconomic provisions, and power-sharing capacities of the state. Below I review the empirical evidence in support of these arguments.

Political-Institutions and General Social Trust: The Evidence

It is interesting to note that very few studies have explored the historical origins of trust, let alone general social trust. While it is common in sociology and political science to invoke trust either as a cause or a consequence of some historical social process (e.g., Greif 1989, 2006; North 1990) or in a contemporary case study (e.g., Banfield 1958; Geertz 1978; Landa 1981; Peng 2010; Pye 1992), it is rare to find trust at the center of an historical analysis. Those that do tend to underscore how predatory states and their accompanying corrupt political institutions serve to undermine the development of trust. Anthony Padgen (1988), for instance, attributes the lack of trust in Southern Italy to Spanish viceroys who destroyed relations of trust among citizens in the Kingdom of Naples during the 16th and 17th century. Huysseune (2003), on the other hand, does not identify Spain as the source of peoples' mutual distrust and unreliability toward others in Southern Italy, but the Italian state for promoting clientelism, rent seeking, and patronage networks in the region (see also Putnam 1993; Sabetti 1996). This is why Gambetta (1993) suggests that the Mafia emerged when it did: to secure trust among clients when the Italian state was unable to so. Similar lines of research and argumentation have been used to explain the decline of trust in post-Soviet regimes (see Flap and Völker 2003; Iglic 2003;

Nichols 1996; Varese 2001). Interestingly, all of these studies tend to sample on the dependent variable and investigate countries with ineffective states or states in transition. This suggests that such states will impede the development of trust (Cook, Hardin, and Levi 2005; Herreros 2008), which supports the crowding-out approach.

Although insightful, why haven't historical studies been more common in the trust literature? Mainly three reasons. One, it is very difficult to directly measure trust with historical methods since historical data often lack concrete measures of microfoundations that economists and social psychologists think are important for emergent social phenomenon (see Elster 2000). One of which is trust. If anything, social scientists using historical methods must rely on behavioral indicators that—as we know—are poor measures of trust. Second, comparative-historical studies usually lack sufficient cases and adequate measures of competing theoretical constructs to dispel doubts about unobserved confounding factors. Because of this, no comparative-historical or historical case study has properly addressed the aforementioned competing models in any one investigation. Three, although trust is an individual-level microfoundation with its origins embedded across various levels of analysis, it is much easier for comparative-historical methods to explore macro-level causes and consequences. This suggests that any discussion of trust with historical methods consists of, at most, assumptions about micro-level processes impacting macro-level outcomes. All of this points to why research on trust is primarily based on national and cross-national public-opinion polls that directly measure trust at the individual level.

Interestingly, studies using this data and ordinary least squares (OLS) regression tend to show that property rights institutions, court independence, contract enforcement, welfare state development, and democracy significantly and positively relate to aggregated micro-level public-opinion survey data of general social trust (Delhey and Newton 2005; Knack and Keefer 1997; LaPorta, Lopez DeSilanes, Shleifer, and Vishny 1997; Muller and Seligson 1994; Rothstein and Stolle 2008; Zak and Knack 2001), while institutional transitions, corruption, and centralized market regulations tend to undermine general social trust (Aghion et al. 2010; Rothstein and Stolle 2008).[20] Moreover, studies using ridge regression (Tsai, Laczko, and Bjørnskov 2011), demographic methods (Dinesen 2013; Nannestad, Svendsen, Dinesen, and Sonderskov 2014), or hierarchical linear models (HLM) in which observations are clustered into higher-level units typically parallel studies using OLS regression (Freitag and Bühlmann 2009; Gheorghiu, Vignoles, and Smith 2009; Herreros 2004; Herreros and Criado 2008; Hooghe, Reeskens, Stolle, and Trappers 2009; Paxton 2007; Robbins 2011; You 2012).

Although insightful, the association observed in these studies might represent a cause, an effect, or a common cause. A key assumption in both OLS and HLM is strict exogeneity: to the extent that general social trust determines one or more of the independent variables in the equation (i.e., endogenizes the exogenous variables), then returned estimates are biased and inconsistent, revealing an invalid directional association. While some studies attempt to overcome this bias with the method of instrumental variables using 2-stage least squares (2SLS) regression (Berggren and Jordahl 2006; Bergh and Bjørnskov 2011; Bjornskov 2007, 2010; Knack 2002), the results are mixed as a consequence of empirically, historically, and/or

[20] Kumlin and Rothstein (2005) find with Swedish survey data, that while universal welfare-state institutions tend to increase general social trust, experiences with needs-testing social programs tend to undermine it (see Rothstein and Uslaner 2005 for the opposite finding). Likewise, using European Values Survey data across 23 countries, Oorschot and Arts (2005) reveal that among a number of different social capital indicators—such as interpersonal trust, trustworthiness, political engagement, and active participation—only trustworthiness appears to be crowded out by welfare states. Relying on a large sample of countries not previously explored, Bjørnskov (2008) finds that fractionalization in the form of political diversity adversely affects trust while ethnic diversity does not. And, finally, Aghion et al. (2010) theorize that distrust creates a demand for regulation and that pre-existing regulation discourages the formation of trust. The authors exhibit empirical support for their model with OLS regression, World Values Survey data, and measures of government regulation.

theoretically suspect instruments (Murray 2006; Sovey and Green 2011). For instance, it is common to use gross domestic product (Bjornskov 2007), ethnolinguistic homogeneity (LaPorta et al. 1997), legal origins (Berggren and Jordahl 2006), or information technologies (Robbins 2012) as instrumental variables for political institutions. While the instruments in these studies typically pass common instrument validity tests (e.g., the Cragg-Donald *F* statistic), rarely do these studies discuss and provide concrete evidence for independence (i.e., explain theoretically and empirically why an instrument is uncorrelated with unobserved causes of the outcome), the exclusion restriction (i.e., explain theoretically and empirically why an instrument does not have a direct effect on the outcome), or monotonicity (i.e., explain why the treatment is not available to those in the control group) (Sovey and Green 2011). In fact, commonly used instrumental variables for political institutions thus far, such as gross domestic product, fail to satisfy any of these aforementioned requirements.

As a consequence, we still know very little about the political-institutional determinants of general social trust. While research points to an association between these two factors, the causal effect might not run from institutions to general social trust but from general social trust to institutions (Bergh and Bjørnskov 2011; Bjornskov 2010; Boix and Posner 1998; Paxton 2002; Putnam 1993; Robbins 2012) since the validity of instrumental variables for political institutions remains a contentious topic (Acemoglu, Johnson, and Robinson 2005; Acemoglu, Johnson, and Robinson 2001; Glaeser, La Porta, Lopez-de-Silanes, and Shleifer 2004). An alternative and some might say superior method is to employ modeling techniques that consider time (Halaby 2004). Yet, only one study in the literature has modeled such a relationship (Paxton 2002). Although foundational, this study is not without shortcomings: it employed a small sample of 46 countries where maximum-likelihood missing value techniques were used on half of the sample, which can bias estimates (Allison 2002); it used cross-lagged structural equation panel models that did not account for time-invariant unobservables; and it explored only one element of political institutions: democracy (i.e., power-sharing capacity).

In short, while these findings provide important insights into how and why political institutions simultaneously promote and undermine general social trust, many questions remain. In particular, these studies show that time must be taken seriously as we assess the crowding-in and crowding-out effects of political institutions on general social trust; that is, nearly all of the studies outlined above neglect to examine how changes in political institutions affect changes general social trust. The goal of the present study is to address these remaining issues, and I do so using fixed- and random-effects panel models that control for unobserved heterogeneity and alleviate—although do not entirely solve—problems of endogeneity.

Method

Data

The repeated cross-sectional data were drawn from various cross-national public-opinion data sets, including the Afro Barometer (www.afrobarometer.org), the Asian Barometer (www.asianbarometer.org), the 1986 Euro Barometer 25 (Roth 2009), the European Values Study (EVS; www.europeanvaluesstudy.eu), the Latino Barometer (www.latinobarometro.org), and the World Values Survey (WVS; www.worldvaluessurvey.org).[21] With these data, I followed the WVS wave structure and compiled a six-wave unbalanced pseudo-panel of 74

[21] In particular, I used data from four waves of the Afrobarometer (Algeria 2006; Botswana 1999, 2005; Namibia 1999, 2005; Tanzania 2005; Zambia 2001), four waves of the Asian barometer (Bangladesh 2005; Pakistan 2005; Philippines 2007; Singapore 2006; Sri Lanka 2003, 2005), the 2008 European Values Study Wave IV, four waves of the Latinobarometer (Bolivia 1996, 2000, 2005; Brazil 2000; Colombia 2000; Costa Rica 1996, 2000, 2005; Dominican Republic 2004, 2005; Ecuador 1996, 2000, 2005; El Salvador 1996, 2000, 2005; Guatemala 1996, 2000; Honduras 1996, 2000, 2005; Nicaragua 1996, 2000, 2005; Panama 1996, 2000, 2005; Paraguay 1996, 2000, 2005; Uruguay 2000; Venezuela 2005), and five waves of the World Values Survey (1981-1984, 1989-1993, 1994-1998, 1999-2004, 2005-2009).

countries spanning 30 years (1980-1984, 1986, 1989-1993, 1994-1998, 1999-2004, 2005-2009). When available, within-country frequency weights were applied to ensure that each representative sample conformed to recent census data.

Measures

I measured general social trust by aggregating answers to the following binary question: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" In other words, it is the proportion of respondents—multiplied by 100—who say that most people can be trusted (ranging from 0 to 100). While this operationalization is not without criticism (Glaeser, Laibson, Scheinkman, and Soutter 2000; Holm and Danielson 2005; Holm and Nystedt 2008; Reeskens and Hooghe 2008; Sturgis and Smith 2010), I nevertheless rely on this measure for three reasons. First, scholars across various disciplines use this measure on a consistent basis (Berggren and Jordahl 2006; Delhey and Newton 2005; Inglehart 1990; Paxton 2002; Putnam 2000; Uslaner 2002; Zak and Knack 2001), which facilitates cross-study comparisons. Second, recent research finds that—in non-Confucian countries—this operationalization of general social trust sufficiently captures the notion that respondents think about people they do not know personally and have not yet met (Freitag and Bauer 2013; Delhey, Newton, and Welzel 2011; Torpe and Lolle 2011). Third, it is the only operationalization of general social trust that spans the various repeated cross-sectional data sets I use.

Data on political institutions were based on the following: (a) legal structure and security of property rights, (b) state regulation of credit and business, and (c) size of government measures drawn from the Economic Freedom of the World Dataset (Gwartney, Hall, and Lawson 2011). All three measures were used to capture legal property rights, government regulation of economic and business markets, and universality of socioeconomic provisions, respectively, and range from 0 ('no economic freedom') to 10 ('total economic freedom'). Following prior research (Bohnet, Frey, and Huck 2001; Herreros 2004; Tsai, Laczko, and Bjørnskov 2011), I included a squared polynomial term for legal structure and security of property rights. To measure labor market regulations, I used the workers' rights variable from Cingranelli and Richards (Cingranelli and Richards 2008). To operationalize power-sharing capacity, I standardized and summed the following four measures: the political rights measure from United Nations Freedom House web resources, the power-sharing regime measure from Norris (2008), the executive authority measure from the Polity IV Project, and the democracy measure from the Polity IV Project ($\alpha = .95$) (note: greater values indicate greater power-sharing capacity).[22]

I also statistically controlled for a number of other factors that might confound the

[22] Quantitative research using cross-national public opinion data have noticeable strengths; in particular, the ability to explore a wide range of social processes that laboratory experiments and even comparative-historical methods simply cannot do, such as compare and contrast the effects of different welfare state typologies on trust or how an independent judiciary might produce an environment where trust can grow. Yet, it is exactly this level of abstraction that limits large-N cross-national research. Current measures of political institutions do a poor job of capturing those elements of an institution that might actually undermine an individual's propensity to trust. For instance, the current indicators that come closest to measuring institutional incentives do not contain anything about monetary sanctions or the severity of monetary sanctions. The legal property rights measure from the Economic Freedom of the World data set merely takes stock of people's perceptions of the judiciary and contract enforcement in a country among other things (see Freedom in the World 2008). Alternative measures of property rights enforcement do the same. There is also nothing available that directly measures informal institutions or the role of norms. Not only that, but current political-institutional measures capture institutional outcomes instead of actual exogenous components (Glaeser, La Porta, Lopez-De-Silanes, and Shleifer 2004); are never orthogonal or rectangular (i.e., always collinear) to each other (see Langbein and Knack 2010) or other national-level factors such as GDP (Glaeser, La Porta, Lopez-De-Silanes, and Shleifer 2004); incorporate indicators of institutions, policy preferences, and policy outcomes into their respective measures of political institutions where they should be kept independent of one another (Kurtz and Schrank 2007ab); and generally lack construct validity (Thomas 2010). In fact, many of these indicators tend to be highly correlated and might just capture economic development and not institutional quality or performance. And if common cross-national measures of good governance accomplish their goal and indeed measure discrete elements of political institutions, such as the rule of law and bureaucratic effectiveness, as many suggest (see Kaufman, Kraay, and Mastruzzi 2007abc, 2010; Kaufman, Kraay, and Zoido-Lobatón 1999ab, 2002, 2004, 2006ab), these discrete factors in and of themselves gravitate to a higher-order factor: institutional quality (see Langbein and Knack 2010).

In short, both measures of political institutions and general social trust in the cross-national literature have their shortcomings. This should not, however, deter us from exploring such questions because of data limitations. Although the measures are typically poor, we should nevertheless investigate rates of general social trust through time while (a) making assumptions about the measures we use, (b) properly accounting for statistical issues with those measures (i.e., multicollinearity), and (c) offering caveats and drawing modest conclusions.

relationship between political institutions and general social trust (Bjornskov 2008; Delhey and Newton 2005; Stolle, Soroka, and Johnston 2008; Uslaner 2002): first, I included income inequality based on the gini coefficient drawn from various sources (see Table 4.A.1 in the "Chapter 4: Appendix"); second, I included a measure of ethnolinguistic homogeneity taken from the *Encyclopedia Britannica* and CIA World Factbook, which consists of the percent largest ethnic and linguistic groups in a country summed and divided by two ($\alpha = .73$); third, I included the natural log of gross domestic product per capita (constant year 2000 US$) from the World Bank to measure economic development and modernization; and fourth, I included a number of time-invariant variables that control for factors related to a country's culture and values (Algan and Cahuc 2010; Bjornskov 2007; Guiso, Sapienza, and Zingales 2008; Kashima and Kashima 1998; Tabellini 2008)—these include variables for countries with absolute or constitutional monarchies (Monarchy); for countries with Scandinavian cultural heritages such as Denmark, Finland, Iceland, Norway, and Sweden (Nordic); for a country's average coldest month of the year in Celsius scale (Temperature); for license to pronoun-drop in the official language of a country (Pronoun-Drop); and for countries with former Marxist-Leninist governments (Former Communist).[23]

All of these time-invariant controls consistently relate to, or have been used as instrumental variables for, general social trust in prior research. I thus expect countries with constitutional or absolute monarchies and countries with Scandinavian cultural heritages to have higher levels of general social trust than other countries. As Bjørnksov (2007, 2008, 2010) has argued, monarchies engender national identity, collective unity, and social stability in a country that ought to foster general social trust even in the face of economic and political cleavages,

[23] For my sample, former communist countries include Albania, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, Slovakia, Slovenia, and Ukraine

while countries with Scandinavian cultural heritages should promote general social trust as a result of their economic, political, and social exceptionalism (Delhey and Newton 2005). Following Bjørnksov (2010), I also expect countries with harsh winters to exhibit high levels of general social trust as cold winters supposedly foster greater interdependence among strangers than countries with milder winters where individuals can rely on their immediate family and friends for survival. I also expect countries with official languages that permit dropping of the personal pronoun to exhibit lower levels of general social trust than countries with official languages that forbid such practices: dropping the first person pronoun is typical of cultural traditions that place greater emphasis on collectivism, while forbidding first person pronoun drop is typical of cultural traditions that place a greater emphasis on individualism (Bergh and Bjørnskov 2011; Tabellini 2008). Finally, general social trust should be lower in former Marxist-Leninist governments as a result of (a) the economic and political dismantling within these countries after the fall of communism, and (b) the oppressive behavior of some former communist dictatorships (Badescu 2003; Rose-Ackerman 2001).

To reduce problems of simultaneity, all independent variables were lagged period *t - k* and correspond to the lagged *t - k* general social trust survey year. See Table 4.A.1 in the "Chapter 4: Appendix" for a description of the data sets and Table 4.1 for descriptive statistics.

Table 4.1. Description of Variables and Summary Statistics

Variables	Unit	Mean	SD	Min	Max
General social trust	Proportion of sample who believe that others can be trusted.	29.79	16.12	2.81	76.12
Legal property rights	10 = Property protection to 1 = no property protection.	6.47	1.69	2.70	9.60
State regulations	10 = No market regulation to 1 = complete regulation.	5.81	1.02	2.50	8.80
Workers' rights	2 = Workers' rights fully protected to 0 = severely restricted.	1.41	0.79	0.00	2.00
Size of government	10 = Market allocation of resources to 1 = Government allocation.	5.46	1.77	1.60	9.10
Power-sharing capacity	Standardized index (greater values equal greater power-sharing).	0.31	0.70	-2.20	0.77
Income inequality	Absolute inequality from 0-100.	37.11	11.16	20.70	74.33
Ethnolinguistic homogeneity	(% largest ethnic group + % largest linguistic group)/2.	81.57	16.28	29.30	100
ln(GDP)	ln(gross domestic product per capita, constant year 2000 US$).	8.62	1.26	5.65	10.51
Monarchy	1= Monarchy, 0 = otherwise.	0.27	--	0	1
Nordic	1= Denmark, Finland, Iceland, Norway, and Sweden, 0 = otherwise.	0.09	--	0	1
Temperature	Average temperature (Celsius) in the coldest month of the year.	7.08	9.92	-11	27
Pronoun-drop	1 = license to pronoun-drop in the official language, 0 = otherwise.	0.66	--	0	1

Former communist	1 = former Marxist-Leninist states, 0 = otherwise.	0.17	--	0	1

No. countries = 74, No. observations = 174 for all variables.

Model Specifications

In my first set of estimates, I model general social trust as a function of the political-institutional variables and statistical controls by pooling the time-series of the country sample and using OLS regression (model not shown formally). I then model general social trust using random- and fixed-effects estimation techniques. Random-effects are modeled as follows:

$$GeneralSocialTrust_{i,t} = \alpha_0 + \beta_1 GeneralSocialTrust_{i,t-k} + \beta_2 X_{2,i,t-k} + \ldots + \beta_z X_{z,i,t-k} + \pi_3 W_{3,i} + \ldots + \pi_z W_{z,i} + \nu_i + \varepsilon_{i,t} \quad (4.1)$$

where *i* represents each country and *t* represents each time period (with t = 1-6 waves); $GeneralSocialTrust_{i,t}$ is the general social trust dependent variable for country *i* at period *t*; $GeneralSocialTrust_{i,t-k}$ and $X_{z,i,t-k}$ are respectively general social trust and time-variant predictors for country *i* during period $t - k$ where *k* is the most adjacent period to *t*; $W_{z,i}$ are time-invariant predictors for country *i*; β_z are the coefficients for the time-variant predictors; π_z are the coefficients for the time-invariant predictors; α_0 represents the between-country constant term, ν_i is the time-constant error term, and $\varepsilon_{i,t}$ is the idiosyncratic, or time-varying, error term.

Although equation 4.1 assumes that the variation across entities is random and uncorrelated with predictors in the model, the advantage of this technique is the ability to include time-invariant regressors such as Scandinavian cultural heritage. But if ν_i is correlated with predictors in the model, then estimates found in equation 4.1 are biased and inconsistent. This would suggest the use of fixed-effects estimation, which is modeled in equation 4.2 as follows:

$$GeneralSocialTrust_{i,t} = \alpha_i + \beta_1 GeneralSocialTrust_{i,t-k} + \beta_2 X_{2,i,t-k} + \ldots + \beta_z X_{z,i,t-k} + \varepsilon_{i,t} \quad (4.2)$$

where *i* represents each country and *t* represents each time period (with t = 1-6 waves); $GeneralSocialTrust_{i,t}$ is the general social trust dependent variable for country *i* at period *t* ;

$GeneralSocialTrust_{i,t-k}$ and $X_{z,i,t-k}$ are respectively general social trust and time-variant predictors for country *i* during period $t - k$ where *k* is the most adjacent period to *t*; β_z are the coefficients for the time-variant predictors; α_i represents the country-specific constant term and $\varepsilon_{i,t}$ is the time-varying error term.

I employ equation 4.2 to investigate within-country variation in general social trust and to control for unobserved heterogeneity between countries. That is, with equation 4.2 I control for time-invariant country-specific unobserved confounding variables. For instance, countries vary according to their legal origins, be it common, civil, or Islamic law that can indirectly influence the development of general social trust (Berggren and Jordahl 2006). This explanation, however, emphasizes variance between countries, not within. Fixed-effects controls for such country-specific explanations. Thus, any changes in general social trust must be due to predictors in the model or unobserved time-variant variables, and not due to unobserved time-invariant characteristics such as legal origins.

Results

Table 4.A.2 in the "Chapter 4: Appendix" lists all general social trust values by country and wave. As noted previously, the observations were abstracted from numerous cross-national public opinion data sets that collected data between the years 1980 and 2009. The unbalanced, repeated cross-sectional data are for 6 time periods with a total of 74 countries and 248 observations.[24] Replicating Roth (2009), Table 4.A.2 highlights variation within *and* between countries, with a strong decline in general social trust for many countries across time. Figure 4.1 presents a plot of these temporal trends. The figure clearly shows that general social trust has

---

[24] We can see that the data set is *unbalanced* and *incomplete*. That is, the data are *rotating*—some observations enter at time 0, miss time 1 and time 2, but re-enter for time 3 through time 5—and, second, the data exhibit *attrition*—observations might enter at either time 0, time 1, or time 2, but then leave the following time point and never return.

steadily increased for some countries (e.g., Denmark and Norway), while it has remained stable (e.g., Belgium, Brazil, and Ecuador) or steeply decreased for numerous others (e.g., Guatemala and Mexico). Figure 4.2 decomposes these temporal trends by country type. As expected, the figure shows that Nordic countries and monarchies exhibit much higher levels of general social trust than either Latin American or former communist countries. Moreover, monarchies and Nordic countries generally reveal either growth or stability in general social trust, while general social trust in Latin American and former communist countries is either slowly growing or slowly decaying. Finally, a null random-effects model (not shown) yielded a relatively large intra-class correlation coefficient ($\rho = .89$). This suggests that 89% of the variation in general social trust is due to between-country differences, while 11% of the variation in general social trust is accounted for by within-country changes.

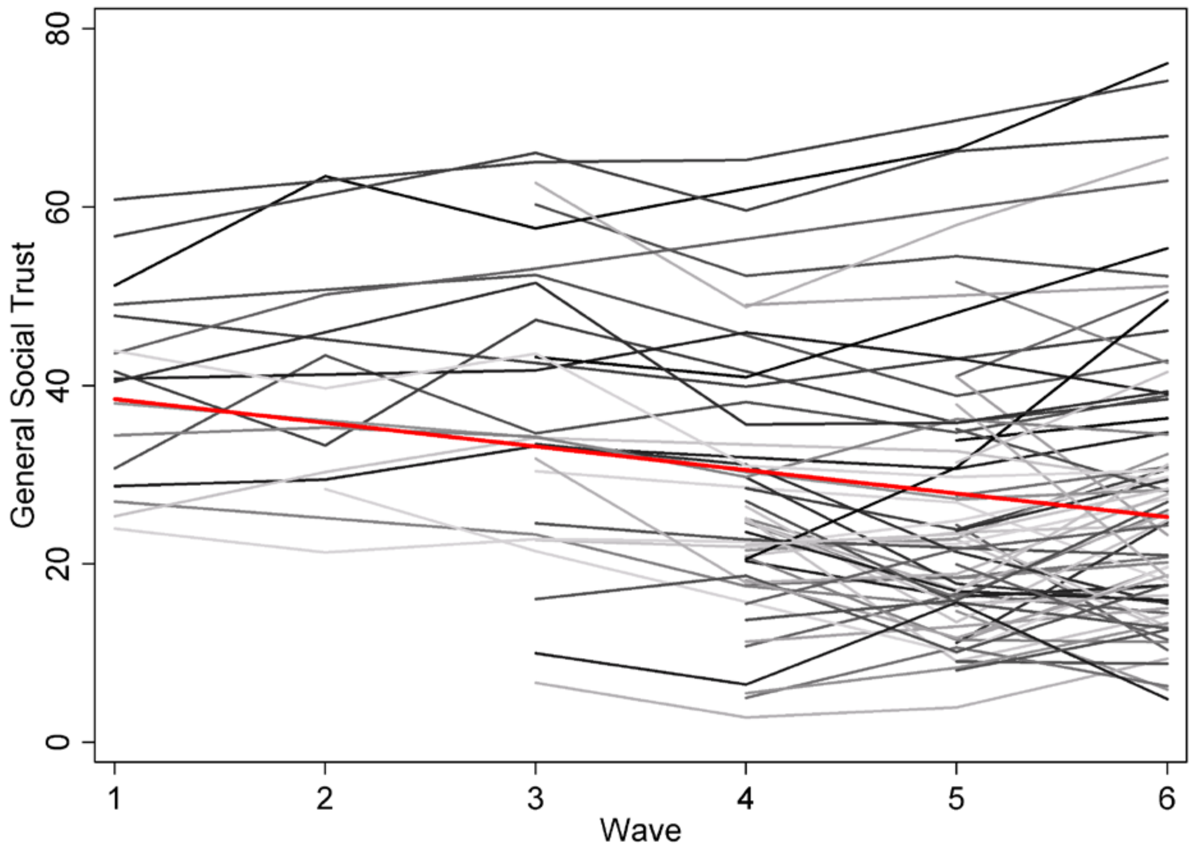

Figure 4.1. General social trust in 74 countries, 1980 to 2009. The red line indicates the prediction (i.e., "line of best fit") for general social trust from a pooled OLS regression of general social trust on wave.

For all analyses, including the pooled-time series OLS estimates and the fixed- and random-effects estimates, I (a) excluded Greece, Iran, Nigeria, and Malawi as it is common in the literature to do so (Roth 2009; Uslaner 2002) and since all four nations consistently exhibit extreme values across a number of outlier tests; (b) found that multicollinearity was only an issue for the property rights polynomial and that centering the two property rights terms did not substantively alter the results presented here—the variance inflation factor (i.e., *VIF*) for all other coefficients in the pooled-time series OLS models was well below (less than 4.0) the typical cut-off value of 10.0 (Kutner, Nachtsheim, and Neter 2004); (c) did not employ robust standard errors or robust-cluster standard errors by country since the Breusch-Pagan test for hetereoskedasticity revealed constant variance for all pooled time-series OLS models; and (d) provide one-tailed tests throughout.

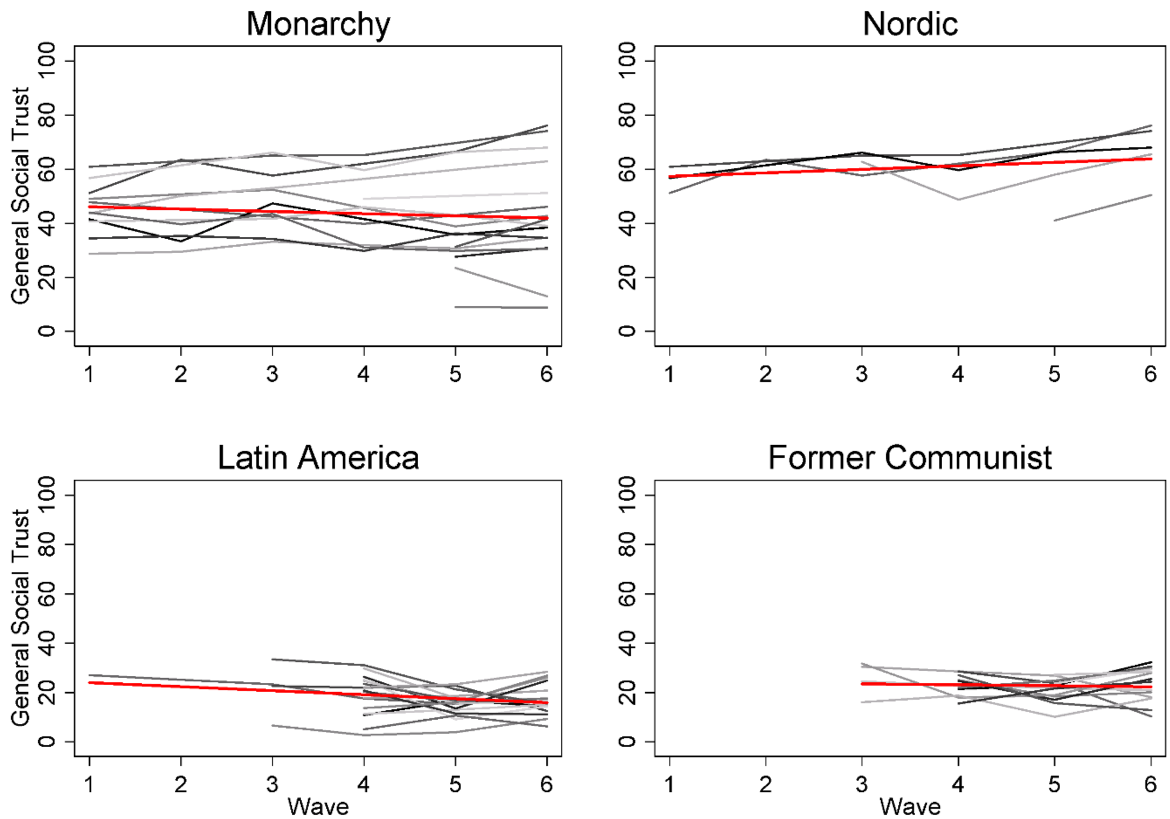

Figure 4.2. General social trust by monarchical, Nordic, Latin American, and former communist countries, 1980 to 2009. The red lines indicate predictions (i.e., "line of best fit") for general social trust from a pooled OLS regression of general social trust on wave for monarchies (top-left panel), Nordic countries (top-right panel), Latin American countries (bottom-left panel), and former communist countries (bottom-right panel).

Pooled Time-Series OLS

Table 4.2 presents a series of nested pooled time-series ordinary least squares regression models. Model 1 includes the key political institutional predictors and indicates that all variables, with the exception of power-sharing capacity, have the expected signs and that only the legal property rights, state regulation, and size of government coefficients are statistically significant (thus providing weak evidence for hypotheses 3 and 5). As hypothesis 1 anticipates, increases in legal property rights undermine general social trust at low levels of property rights protection. This negative effect, however, attenuates as the robustness of legal property rights increases. In other words, property rights institutions retard general social trust in countries that have initial low levels of property rights protection but enhance general social trust for countries that have fairly robust property rights institutions (see Figure 4.3). But note how the increasing effect of legal property rights on general social trust is relatively much greater than the decreasing effect. This suggests that although legal property rights undermine general social trust at low levels of property rights protection, the effect is relatively minor. Model 1 also shows that market deregulations and universal socioeconomic provisions promote general social trust, which supports hypotheses 2 and 4. Overall, the terms in model 1 do an excellent job of accounting for variation in general social trust (R^2 = .84) and tend to parallel prior results (Aghion et al. 2010; Robbins 2011; Tsai, Laczko, and Bjørnskov 2011), although much of the explained variance in general social trust is accounted for by lagged General Social Trust, $_{t-k}$ (R^2 = 0.79).

Table 4.2. General Social Trust and Political Institutions: A Pooled Panel Analysis

Parameters	Model 1	Model 2	Model 3	Model 4	Model 5
General social trust, $_{t-k}$	.84*** (.05)	.81*** (.05)	.81*** (.05)	.81*** (.05)	.66*** (.06)
Legal property rights, $_{t-k}$	-8.80*** (2.18)	-8.74*** (2.13)	-8.61*** (2.15)	-8.41*** (2.14)	-7.21*** (2.21)
Legal property rights^2, $_{t-k}$	.71*** (.17)	.66*** (.17)	.66*** (.17)	.59*** (.17)	.53** (.18)
State regulation, $_{t-k}$	1.51* (.73)	2.02** (.73)	1.98** (.74)	1.86** (.73)	1.37* (.74)
Workers' rights, $_{t-k}$	1.63 (1.00)	1.51 (.99)	1.55 (.99)	1.17 (1.00)	1.00 (.98)
Size of government, $_{t-k}$	-1.11** (.42)	-.69 (.44)	-.71 (.44)	-.70 (.44)	-.24 (.46)
Power-sharing capacity, $_{t-k}$	-1.38 (1.04)	-1.25 (1.02)	-1.22 (1.02)	-1.71 (1.04)	-1.57 (1.04)
Income inequality, $_{t-k}$		-.19** (.07)	-.20** (.07)	-.21** (.07)	-.21** (.08)
Ethnolinguistic homogeneity, $_{t-k}$			-.02 (.04)	-.04 (.04)	-.03 (.04)
ln(gross domestic product), $_{t-k}$				1.52* (.78)	.82 (.84)
Monarchy					2.53* (1.52)
Nordic					7.36*** (2.29)
Temperature					-.11 (.09)
Pronoun-drop					.15 (1.67)
Former communist					-2.29 (2.02)
Constant	25.57** (8.61)	29.85** (8.58)	31.47*** (9.04)	23.72** (9.80)	28.74** (10.45)
R^2	.84	.84	.84	.85	.86

Standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (one-tailed tests).

No. countries = 74; No. observations = 174.

Models 2 through 4 include nested controls for economic cleavages (i.e., income inequality), social cleavages (i.e., ethnolinguistic homogeneity), and modernization (i.e., gross domestic product), respectively. As expected, income inequality exhibits a statistically significant negative sign across all models and appears to confound the relationship between size of government and general social trust.[25] Model 3 shows that the relationship between ethnolinguistic homogeneity and general social trust is statistically insignificant. Although this result appears to contradict prior research (Delhey and Newton 2005; Paxton 2007), it parallels recent findings using larger samples (Bjornskov 2008; Tsai, Laczko, and Bjørnskov 2011). We also see that the relationship between GDP and general social trust is statistically significant and positive, which supports Roth's (2009) pooled time-series OLS models exploring the relationship between economic growth and general social trust. Besides size of government, all other political-institutional parameter estimates and standard errors are consistent from models 2 through 4.

[25] Alternative measures of economic inequality found in the Standardized World Income Inequality Database, v.3.1 (Solt 2009)—which includes comparable measures of net and gross income inequality across time and space—did not substantively alter the results for political institutions presented and discussed in the present manuscript.

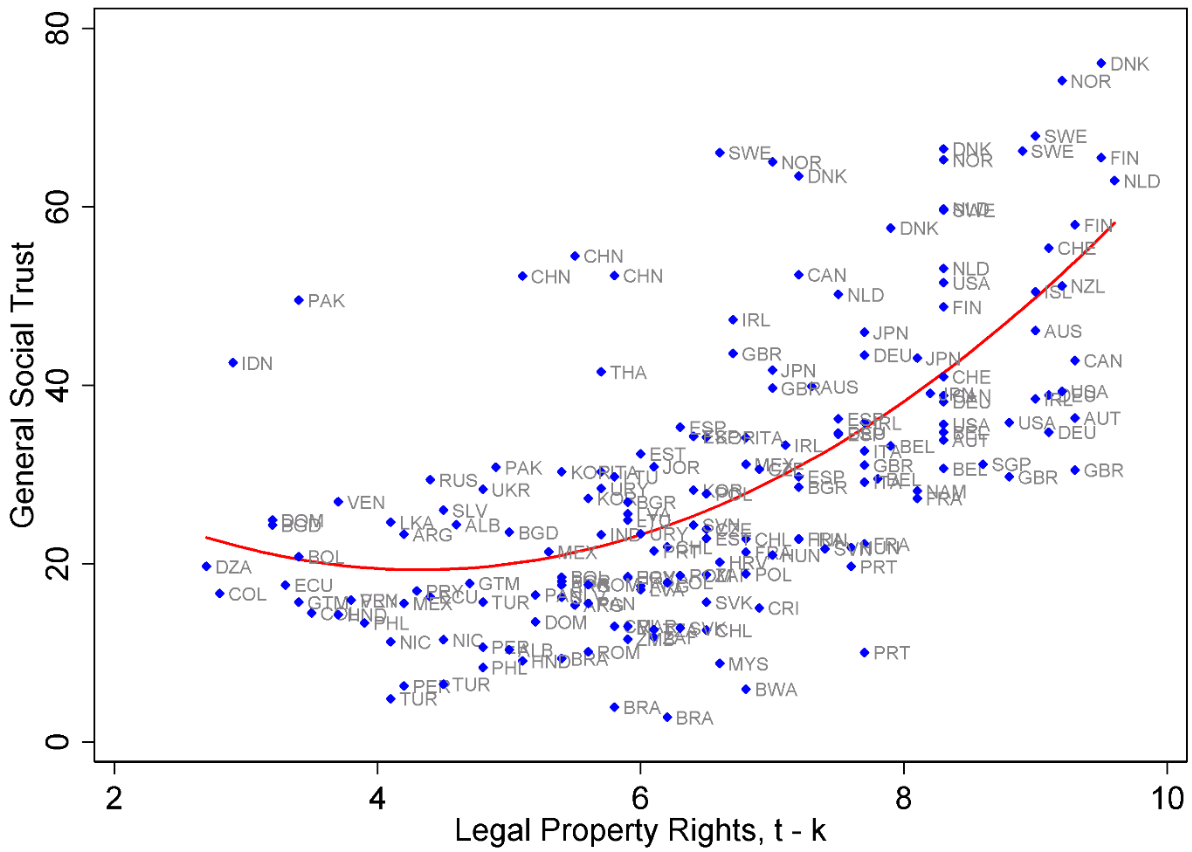

Figure 4.3. Legal property rights, $_{t-k}$ and general social trust, 1980 to 2009. The red line indicates the prediction (i.e., "line of best fit") for general social trust from a pooled OLS regression of general social trust on Legal Property Rights, $_{t-k}$ and Legal Property Rights^2, $_{t-k}$.

Finally, model 5 includes the time-invariant controls—Monarchy, Nordic, Temperature, Pronoun-Drop, and Former Communist—and shows that the substantive story changes very little from model 4 to model 5 and that only the Monarchy and Nordic dummy variables are in the expected direction and statistically significant. All other time-invariant controls are statistically insignificant, which fails to support prior research (Bjornskov 2007, 2008). Interestingly, GDP becomes statistically insignificant when controlling for the time-invariant factors, some of which were absent from Roth's (2009) sensitivity analysis. Note that robust-cluster standard errors by country did not substantively alter the results presented here.

In short, the pooled time-series OLS analysis reveals the following: legal property rights and general social trust forms a curvilinear relationship—general social trust increases at an increasing rate with legal property rights; government regulation of markets undermines general social trust (higher values of state regulation indicate less market regulation); income inequality retards general social trust; and monarchical and Nordic countries are more trusting, on average, than other countries.

Fixed- and Random-Effects Panel Models

To control for unobserved time-invariant factors (e.g., cultural history) and to explore how changes in predictors over time but not across countries affect general social trust, I estimated a series of fixed- and random-effects panel models. As stated before, fixed-effects models estimate changes within countries while random-effects models estimate differences across countries as well as across time-periods. To test whether or not the variation across countries is correlated with the predictors in the models (i.e., independence assumption), I used the Hausman specification test (Hausman 1978); the test indicated that fixed-effects estimation techniques should be used (the test statistic for models 7 and 8 in Table 4.3 is $\chi^2(10) = 91.46$, which rejects the null hypothesis of independence). I nevertheless explore both fixed- and random-effects estimation for purposes of comparison. I also conducted joint tests on all fixed-effects models in Table 4.3 to see if dummy variables for time are equal to zero. The results suggest that time fixed effects are not needed. As before, I excluded Greece, Iran, Nigeria, and Malawi from all models and used one-tailed tests throughout. I investigated alternative model specifications in my sensitivity analysis.

Table 4.3, like Table 4.2, presents a series of nested models but uses fixed- and random-effects estimation techniques instead. With the exception of workers' rights and power-sharing capacity, we can see that the random-effects models (i.e., models 2, 4, 6, 8, and 9) parallel the pooled time-series ordinary least squares regression models found in Table 4.3 (providing further support for hypotheses 1, 2, and 4). In other words, once I treat differences within- and between-countries across time as random variables and loosen the assumption of no unique attributes of countries and no universal effects across time, labor market regulations increase general social trust (supporting hypothesis 3) and power-sharing capacities decrease general social trust (disconfirming hypothesis 5).

The fixed-effects models, however, paint a different picture (see models 1, 3, 5, and 7): the results simultaneously support and contradict findings from prior empirical work and the pooled time-series OLS regression models in Table 4.3. Regardless of the fixed-effects model, all of the political-institutional variables are statistically significant. But unlike the OLS and random-effects models, income inequality is statistically unrelated to general social trust once I time-demean the repeated cross-sectional data (see models 3, 5, and 7). Given that income inequality, as measured, yields little within-country changes through time, statistically insignificant fixed-effects are expected. This suggests one of two things: one, that the effect of income inequality on general social trust is the result of long-term, slowly changing causal processes (see Fairbrother and Martin 2013 for similar findings and conclusions); or, two, that the effect of income inequality on general social trust is confounded by an unobserved time-invariant extraneous variable.

Gross domestic product is negatively related to general social trust but statistically insignificant when using fixed-effects estimates (see model 7). Interestingly, when coupled with prior findings, this suggests that the causal relationship between economic growth and general social trust runs not from growth to trust but from trust to growth.

The interpretation for all statistically significant fixed-effects coefficients is as follows: for given country i, as X varies across time by one unit, general social trust increases or decreases by β units. For instance, for given country i, as power-sharing capacity increases by one-unit across time, general social trust decreases by 5.85 units (see model 7).

Table 4.3. General Social Trust and Political Institutions: Fixed- and Random-Effects Estimates

Estimation method	FE	RE	FE	RE	FE	RE	FE	RE	RE
Parameters	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Generalized trust, $_{t-k}$	.01	.70***	.01	.67***	.01	.68***	.01	.67***	.50***
	(.10)	(.06)	(.10)	(.06)	(.10)	(.06)	(.10)	(.06)	(.07)
Legal property rights, $_{t-k}$	-6.26*	-8.49***	-6.26*	-8.52***	-6.27*	-8.53***	-7.21**	-8.28***	-7.33***
	(2.79)	(2.32)	(2.81)	(2.27)	(2.83)	(2.28)	(3.01)	(2.25)	(2.25)
Legal property rights^2, $_{t-k}$	.44*	.68***	.44*	.65***	.44*	.65***	.53*	.58***	.52**
	(.20)	(.18)	(.21)	(.18)	(.21)	(.18)	(.23)	(.18)	(.18)
State regulation, $_{t-k}$	1.33*	1.99**	1.32*	2.37***	1.31*	2.37***	1.46*	2.17**	1.63*
	(.71)	(.72)	(.74)	(.73)	(.77)	(.73)	(.79)	(.73)	(.72)
Worker's rights, $_{t-k}$	2.94**	2.92**	2.95**	2.42**	2.93**	2.42**	3.10**	1.95*	1.69*
	(1.17)	(1.06)	(1.18)	(1.04)	(1.19)	(1.05)	(1.21)	(1.05)	(1.02)
Size of government, $_{t-k}$	-1.57*	-1.39***	-1.57*	-.87*	-1.57*	-.87*	-1.40*	-.79	-.28
	(.73)	(.49)	(.74)	(.51)	(.74)	(.51)	(.77)	(.50)	(.52)
Power-sharing capacity, $_{t-k}$	-6.48***	-2.18*	-6.47***	-1.88*	-6.46***	-1.88*	-5.85***	-2.47*	-2.32*
	(1.57)	(1.15)	(1.58)	(1.12)	(1.59)	(1.12)	(1.73)	(1.15)	(1.13)
Income inequality, $_{t-k}$			.01	-.23**	.01	-.23**	.01	-.23**	-.21*
			(.21)	(.08)	(.21)	(.08)	(.21)	(.08)	(.09)
Ethnolinguistic homogeneity, $_{t-k}$					-.02	.001	-.05	-.03	-.02
					(.18)	(.05)	(.18)	(.05)	(.05)
ln(gross domestic product), $_{t-k}$							-3.55	2.02*	.83
							(3.82)	(.95)	(1.01)
Monarchy									4.33*
									(2.09)
Nordic									9.48**
									(3.26)
Temperature									-.17
									(.11)
Pronoun-drop									-1.56
									(2.33)
Former communist									-2.89
									(2.67)
Constant	48.99***	26.16**	48.57***	32.17***	50.01*	32.07***	83.29*	20.87*	32.39**
R^2 within	.23	.06	.23	.05	.23	.05	.24	.05	.06
R^2 between	.01	.84	.01	.86	.01	.86	.11	.87	.86
σ_v	14.93	4.50	14.98	4.12	15.10	4.15	17.94	3.98	4.00
σ_e	4.62	4.62	4.64	4.64	4.67	4.67	4.67	4.67	4.67
r	.91	.49	.91	.44	.91	.44	.94	.42	.42

Standard errors in parentheses.
* $p < .05$; ** $p < .01$; *** $p < .001$ (one-tailed test).
Note: FE = Fixed-Effects, RE = Random-Effects.
No. countries = 74; No. observations = 174.

To explore alternative model specifications, I investigated whether the relationship between (a) gross domestic product and general social trust and (b) power-sharing capacity and general social trust were curvilinear as argued by Roth (2009) and as illustrated in a scatter plot, respectively. I did not find a statistically significant curvilinear relationship in my models for either specification (these findings held even when excluding legal property rights or gross domestic product for power-sharing capacity). Following Rothstein and Stolle (2008) and Tsai et al. (2011), I also explored a three-way interaction between legal property rights, power-sharing capacity, and workers' rights. I introduced these terms to models 1 and 2 in Table 4.3. While the random-effects estimates replicated Tsai et al.'s (2011) findings, the fixed-effects estimates did not. This suggests that their findings are likely an artifact of simultaneity, unobserved heterogeneity, or little within-country variation. I also explored interaction effects between ethnolinguistic homogeneity and migrant stock (as % of the population) in models 5 and 6, Table 4.3. Once again, the interaction effects were statistically insignificant. Results for all aforementioned alternative model specifications are available upon request.

Sensitivity Analysis

The fixed-effects estimates appear to simultaneously support and challenge prior work using OLS, HLM, and 2SLS cross-sectional designs (e.g., Aghion et al. 2010; Berggren and Jordahl 2006; Bjornskov 2007) as well as cross-lagged structural equation panel models (Paxton 2002). Since this is the case, I follow Wilson and Butler (2007) and explore the robustness of my key political-institutional variables. Table 4.4 reveals numerous specification tests that exclude possible influential cases, alter the countries included, investigate alternative control variables, restructure the panel data, and employ alternative model specifications. I use model 7 in Table 4.3 as the baseline model (see Row 1). Rows 2 through 4 alter the inclusion and exclusion of influential cases. As can be inferred, both the state regulations and size of government variables are sensitive to the inclusion of Greece, Iran, Nigeria, and Malawi (Row 2). This is expected since all four countries generate extreme values and fail to pass a number of classic outlier diagnostic tests. And although excluding China—a commonly omitted case in the general social trust literature (e.g., Uslaner 2002)—and other suspected outliers changes the magnitude of some political-institutional coefficients, all remain statistically significant (Rows 3 and 4, respectively). In short, the fixed-effects estimates for the political-institutional variables are fairly robust to the exclusion of influential cases.

Rows 5 through 21 examine alternative country samples. Following Delhey et al. (2011) and Torpe and Lolle (2011), I explore the baseline model while excluding Asian and African countries (based on the United Nations categorization of Asian and African countries, see Row 5) and while excluding countries with majority populations practicing Eastern religions (see Row 6). This is done since individuals in Asian, African, and Confucian countries respond to the operationalization of general social trust with a smaller radius in mind than individuals in other countries. Rows 5 through 8 shows that excluding these countries alone or in concert does not substantively alter the political-institutional fixed-effects estimates, while omitting Latin American and Nordic countries does (see Rows 9 and 10, respectively). Without Latin American countries, the legal property rights polynomial term becomes statistically insignificant, while the baseline model without Nordic countries yields insignificant effects for legal property rights, state regulations, and size of government. This suggests that the curvilinear effect for legal property rights is sensitive to Latin American and Nordic countries, which is intuitive since the upper-right quadrant of Figure 4.2 primarily consists of Nordic countries and the lower-left quadrant is primarily Latin American countries. In the absence of these countries, we would expect to see insignificant curvilinear coefficients for legal property rights. With respect to state regulations and size of government, both terms are nearly statistically insignificant, so it is intuitive that excluding countries with an emphasis on the universality of socioeconomic provisions *and* free-market competition would fuel the effects of both variables.

Table 4.4. Sensitivity Analysis: Fixed-Effects Estimates

Row		LPR	LPR^2	SR	WR	SoG	PSC	N	Obs
1	Baseline: Model 7, Table 4.3	-7.21***	.53**	1.46*	3.10***	-1.40*	-5.85***	74	174
Influential Cases									
2	With Greece, Iran, Nigeria, and Malawi	-4.94*	.38*	1.23	2.60**	-.76	-5.80***	78	181
3	No China	-7.23**	.53**	1.46*	3.11***	-1.44*	-5.86***	73	171
4	No China, Pakistan, Egypt, Thailand, Singapore, and Indonesia	-6.89**	.52**	1.40*	3.03***	-1.44*	-5.19***	68	165
Country Samples									
5	No Asia	-9.85***	.75***	1.51*	3.45***	-1.62*	-7.91***	60	147
6	No Eastern religions	-7.30**	.54**	1.46*	3.13***	-1.48*	-5.85***	69	164
7	No Africa	-7.29***	.53**	1.55*	3.12***	-1.42*	-5.85***	66	165
8	No Africa + Asia	-10.04***	.75***	1.59*	3.46***	-1.64*	-7.99***	52	138
9	No Latin America	-7.39	.51	1.74*	4.06***	-1.96**	-6.62***	56	133
10	No Nordic	-4.23	.26	1.07	2.73**	-1.08	-6.20***	69	159
11	No former communist	-8.05***	.56***	2.69**	2.19	-2.18**	-5.18***	60	144
12	No UN undeveloped	-11.29	.73	2.02	5.16***	-2.70***	-14.62***	35	101
13	No liberal	-8.98***	.77***	.99	2.59**	-.31	-5.08***	68	155
14	No conservative	-6.43**	.46*	1.36	3.03***	-1.05	-5.83***	68	152
15	No social democratic	-3.28	.17	.81	2.57**	-1.40*	-6.63***	68	153
16	No English legal origins	-8.99***	.77***	.93	2.38*	-.32	-4.53**	61	146
17	No French legal origins	-9.77	.66	1.62	4.40***	-1.87	-5.43*	39	92
18	No dictator since 1980	-10.09**	.69**	1.23	3.55***	-2.13***	-9.09***	56	136
19	No internal war last 10 years	-11.45***	.87***	1.08	2.98*	-1.43*	-3.28	59	138
20	No Protestant	-5.60*	.42*	1.05	2.65**	-.43	-5.55***	66	148
21	No Muslim	-7.69**	.55**	1.49*	2.77**	-1.16	-5.04***	64	159
Variable Specifications									
22	With migrant stock	-8.51**	.63**	1.92**	3.13**	-1.76**	-5.35***	73	169
23	With unemployment	-6.80**	.48**	1.61**	2.77**	-1.02	-5.85***	74	169
24	With religious homogeneity	-7.04**	.51**	1.54*	3.12**	-1.42*	-5.77***	74	174
25	With percent female	-7.26**	.54**	1.42*	3.06**	-1.42*	-5.85***	74	174
26	With tenure of political system	-9.66**	.75**	1.89**	2.92**	-1.46**	-5.36**	47	174
Restructuring of Data									
27	2 waves (bal.)	-6.39**	.50*	2.34***	1.82	.88	-5.08***	52	104
28†	3 waves (bal.)	3.03**	--	.73	1.26	-.25	-6.81*	17	51
29	Lagged variables, $_{t-1}$	-7.37**	.61***	1.17	2.95***	-.84	-7.06***	72	153
Methods									
30	No general social trust, $_{t-k}$	-7.20***	.53**	1.45*	3.09***	-1.40*	-5.87***	74	174
31	Robust SE	-7.21**	.53**	1.46*	3.10***	-1.40	-5.85***	74	174
32	Bootstrap SE: 1,000 repetitions	-7.21**	.53**	1.46*	3.10***	-1.40	-5.85***	74	174
33	Jackknife	-7.21**	.53*	1.46	3.10***	-1.40	-5.85***	74	174
34	Wave dummies	-6.92*	.56**	1.34	2.69**	-.93	-5.16***	74	174
35	MVN multiple imp.: 20 Imput.	-6.37***	.49***	1.51**	2.94***	-.96	-5.05***	91	216
36	MVN multiple imp.: 100 Imput.	-6.47***	.50***	1.53**	3.00***	-.96	-4.98***	91	216
37‡	AR(1)	-9.30***	.67***	2.21***	1.45	-.72	-2.16*	74	174

† = Model 1, Table 4.3 FE estimation.

‡ = Model 8, Table 4.3 RE estimation.
* $p < .05$; ** $p < .025$; *** $p < .01$ (one-tailed tests).

Next, we can see that omitting former communist countries, liberal or conservative welfare states[26], countries with English legal origins, countries that have experienced any sort of dictatorship since 1980, countries that have experienced civil war within the last ten years of the survey year, and countries with Protestant or Muslim majority populations (i.e., 50% or more) did not substantively alter the statistical significance for the polynomial legal property rights term (see Rows 11 through 21). However, omitting undeveloped nations (as categorized by the United Nations Department of Economic and Social Affairs), social democratic welfare states, and countries with French legal origins did. Once again, this is the case as many of the social democracies are Nordic countries and many of the undeveloped and French legal origin countries are Latin American nations. The state regulations variable, on the other hand, is extremely sensitive to the exclusion of certain countries (except Latin American, Former Communist, and Muslim countries), while the workers' rights and power-sharing capacity variables are very robust to the omission of cases (except Former Communist and Internal War, respectively). Size of government, like many of the other political institutional variables, appears to be sensitive to the omission of Nordic countries, welfare states, legal origins, and Protestant or Muslim majoritarian countries.

Rows 22 through 26 explore the robustness of the baseline model's coefficients and standard errors to the inclusion of alternative control variables occasionally used in the literature (Bergh and Bjørnskov 2011; Bjornskov 2010; Tsai, Laczko, and Bjørnskov 2011). I show that including World Bank data on either migrant stock (as % of the population), unemployment (as

[26] I use Esping-Anderson's (1990) typology of welfare states—liberal (Australia, Canada, Ireland, New Zealand, United Kingdom, and United States), conservative (Finland, France, Germany, Italy, Japan, and Switzerland), and social-democratic (Austria, Belgium, Denmark, Netherlands, Norway, and Sweden)

% of the labor force), or percent female (as % of total population) does not substantively alter the results for any of the political-institutional variables, except for size of government (see Row 23). Moreover, the findings are robust to religious homogeneity (as % largest religious group from Britannica Book of the Year and CIA World Factbook) and tenure of political system (see Database of Political Institutions). Although not shown, none of these control variables are statistically significant.

Rows 27 and 28 examine balanced panel models for the time periods 1999 to 2009 and 1994 to 2009, respectively. Despite balancing the data for 2 waves (see Row 27), many of the key political-institutional parameter estimates and standard errors parallel the baseline model: legal property rights increase general social trust at an increasing rate, market deregulations increase general social trust, and power-sharing capacity decreases general social trust, while labor market regulations (i.e., workers' rights) and the universality of socioeconomic provisions become statistically insignificant. Yet, when using a balanced panel with 17 countries and 51 observations over three waves, all key political-institutional variables lose statistical significance due to the reduced number of observations. But when I drop the polynomial term for legal property rights, the linear relationship between legal property rights and general social trust becomes statistically significant as well as the coefficient for power-sharing capacity (see Row 28). We can also see that different lagged structures alter the statistical significance of some political-institutional covariates: Row 29 uses lagged $t - 1$ variables and suggests that although the statistical significance of property rights, workers' rights, and power sharing capacity remain unchanged, state regulations and size of government yield statistically insignificant coefficients.

Row 30 shows the baseline model without lagged $t - k$ general social trust; the substantive results do not depart from the baseline model. Robust standard errors (Row 31) and

Bootstrap estimation with 1,000 repetitions (Row 32), however, renders a statistically insignificant coefficient for size of government. Interestingly, both the state regulations and size of government variables became statistically insignificant with the use of Jackknife estimation (Row 33). And exploring time fixed-effects estimates with dummies for wave only altered the statistical significance of the state regulations and size of government covariates (Row 34).

Rows 35 and 36 examine the baseline model with a multiple imputation technique that fills in missing values of the covariates using multivariate normal regression with an iterative Markov Chain Monte Carlo (MCMC) method. I used a burn-in of 10,000 and calculated 1,000 MCMC iterations between imputations. The initial values of the MCMC chain were obtained from 1,000 expectation-maximum (EM) iterations. MCMC chain figures and plots revealed convergence. All missing values were imputed using predictors from model 5 in Table 4.2 plus dummies for wave, proportional representation, civil war after 1945, dictatorship since 1980, welfare-state typologies, regional location, and majoritarian religion. I also included the Herftot index and the tenure of political system measure from the Database of Political Institutions as well as a country's death rate from the World Bank. Finally, the relative variance increase (RVI) for the imputation models in Rows 35 and 36 were .22 and .23, respectively. Rows 35 and 36 specified 20 and 100 imputations to add, respectively. When comparing the baseline model to the imputation models, we can see that although some of the coefficients changed in magnitude and that the number of countries increased from 74 to 91 and the number of observations increased from 174 to 216, respectively, the directions of effect and statistical significance of the coefficients remained unchanged except for the size of government covariate.

Finally, Row 37 provides results of a first-order autoregressive random-effects model using the terms found in model 8, Table 4.3. I use random-effects estimation instead of fixed-effects estimation as the first-order autoregressive fixed-effects model yields inflated standard errors and directions of effect that deviate from the other fixed-effects models. This is the case as the number of countries and observations is reduced from 74 and 174 to 56 and 100, respectively. A small number of cases, observations, and panels can bias parameter estimates and standard errors when using first-order autoregressive fixed-effects modeling techniques (Wooldridge 2009). Regardless, the standard errors are unbiased when comparing random-effects models with and without first-order autocorrelation (Model 8, Table 4.3 vs. Row 37, Table 4.4).

Discussion and Conclusion

The political-institutional origins of general social trust have long eluded social scientists. Although decades of research point to a possible association, no one study has provided convincing evidence for causal ordering—the ubiquity of cross-sectional designs and the use of theoretically invalid instrumental variables have prohibited such conclusions. In an effort to advance the literature and address lingering issues of unobserved heterogeneity and simultaneity, the present study explores the relationship between political institutions and general social trust using time-series panel analysis with a large cross-national sample of countries. In particular, I use pooled time-series OLS regression and fixed- and random-effects estimation techniques on an unbalanced, repeated cross-sectional data set of 74 countries and 248 observations spread over a 30-year time period (from 1980 to 2009) to test various competing theoretical models about the political-institutional origins of general social trust. This type of empirical investigation has yet to be done.

My research shows that political institutions simultaneously promote and undermine general social trust. In particular, I find that property rights institutions form a curvilinear relationship with general social trust: in countries with ineffective and inefficient property rights, an increase in their effectiveness leads to a decrease in general social trust. This effect applies to undeveloped, developing, and Latin American countries. In countries with fairly effective and efficient property rights, an increase in their effectiveness leads to an increase in general social trust (especially in social democratic and Nordic countries). Interestingly, the curvilinear relationship between legal property rights and general social trust is highly robust to a gamut of model specification checks and sensitivity analyses.

Overall, the results provide support for the argument that political-institutional constraints foster expectations about the cooperativeness of individuals in general, and that effective legal structures and property rights institutions create an environment where general social trust can grow. Although the findings imply that property rights institutions undermine general social trust at low levels of protection, the increasing effect of legal property rights on general social trust is relatively much greater than its undermining effect at low levels of enforcement. All of which buttress Bohnet, Frey, and Huck's experimental findings: "The worst legal regime is not one in which contracts cannot be enforced but one with an intermediate level of enforceability (2001: 136)." Strictly speaking, regimes with intermediate levels of property rights protection neither adequately prosecute malfeasance nor leave the guarantee of exchanges solely to decentralized systems of informal regulation. Both of which foster general social trust but are noticeably absent from states with intermediate levels of contract enforcement and property rights protection.

Second, I show that market deregulations increase general social trust. The finding supports the argument that economic, business, and credit markets regulated by government appointed bodies weakens community building, civil society, and general social trust (Aghion et al. 2010). As Taylor (1987) suggests, the likely mechanism accounting for this effect is state dependence: individuals come to depend on government bodies instead of each other to promote social and economic exchange in the presence of centralized market regulations, thereby diminishing general social trust. This effect, however, is fueled by various cultural and historical processes, such as Scandinavian cultural legacies, and is also sensitive to common statistical robustness checks. In other words, the relationship between market deregulations and general social trust observed in the present study and prior research (Aghion et al. 2010) is likely an artifact of statistical biases and methodological errors. Third, I find that increases in labor market regulations increase general social trust, which supports Bendix's (1964) and Marshall's (1950) classic proposition: government bodies that regulate labor markets, such as minimum wage laws, expand the rights and privileges of citizens, which promotes social unification and social integration that, in turn, increases general social trust. And like legal property rights, the observed relationship between labor market regulations and general social trust is robust to model specification checks and alternative estimation techniques.

Fourth, contrary to prior research (Paxton 2002), increases in power-sharing capacities of the state decrease general social trust; that is, as states increasingly share and divide their power—as states democratize—general social trust decreases. Embedded in this finding is an implicit refutation of the merits of democracy and an explicit confirmation of the idea that democratic governments represent the special interests of parties (Rothstein and Stolle 2008). Such regimes tend to favor the interests of certain political and economic actors and ignore the needs of all citizens, which nurtures generalized distrust among the excluded and truly disadvantaged. More broadly interpreted, the deleterious impact of partisan politics on general social trust is, contrary to Lipset (1981), unavoidable in a stable democracy. Yet, an alternative interpretation of the results concerns not the special interests of certain political and economic actors *per se*, but the process of democratization: institutional transitions to democratic politics might damage community structures that help foster social capital and general social trust under institutional conditions incompatible with democracy (Letki and Evans 2005; Rose-Ackerman 2001). In this approach, the adaptation to new political-institutional environments that results from democratization is what weakens general social trust in a society, not the catering to special interests of political parties. What these two competing arguments suggest is the need for future research to determine how *and* why increases in power-sharing capacities of the state decrease general social trust, which is the most stable of any political-institutional factor to robustness checks and alternative model specifications.

Fifth, I show that as a nation's universality of socioeconomic provisions increases, so too does general social trust. To illustrate, universal political institutions—such as welfare states—foster economic equality, equality of opportunity, and evenly distributed resources. These types of regimes produce a perception that each citizen has an equal opportunity of success and failure, regardless of their class, gender, or ethnicity, and that no one economic actor is more privileged than another; as a consequence, social cleavages and social barriers break down, while community building, social cohesion, and social solidarity grow. All of which increases general social trust (Robbins 2011; Rothstein and Uslaner 2005; Rothstein and Stolle 2003). Yet, I find that the relationship between universality of socioeconomic provisions—operationalized as size of government—and general social trust is sensitive to a variety of common robustness checks. And although I observe a statistically significant negative relationship between income inequality and general social trust with OLS regression and random-effects panel models, I fail to detect the same effect with fixed-effects estimation techniques. Taken together, the results suggest (i) that the universality of socioeconomic provisions does not increase general social trust, (ii) that the effect of income inequality on general social trust is the result of long-term causal processes difficult to observe within the 30-year window of time captured with the present data, or (iii) that an unobserved time-invariant confounding variable accounts for the relationship between income inequality and general social trust (see Fairbrother and Martin 2013 for similar findings and conclusions).

In conclusion, what appears to matter for general social trust is the safety and security granted by legal property rights institutions, the centralized regulation of labor markets, and stable regimes that avoid sudden shifts toward democratization. In contrast, sources of general social trust are not found with the deregulation of credit and business markets or the universality of socioeconomic provisions as these political-institutional factors are extremely sensitive to common statistical robustness checks. These results, in conjunction with recent findings on the malleability of immigrants' general social trust (Dinesen 2013; Nannestad, Svendsen, Dinesen, and Sonderskov 2014), provide compelling evidence for the role of institutional contexts in shaping general social trust. Overall, the findings generate strong support for various competing theoretical traditions in the social sciences: some models suggest that political institutions undermine general social trust, while other models propose that political institutions create an environment where general social trust can grow. My research provides strong evidence for both. Political institutions, depending on their content and form, crowd-in *and* crowd-out general social trust.

CHAPTER 4: APPENDIX

Table 4.A.1. Sources of Variables

Variables	Source
General social trust	WVS, EVS, and various barometers from 1980 to 2009.
Legal property rights	Economic Freedom of the World Project, Legal Structure and Security of Property rights.
State regulations	Economic Freedom of the World Project, Regulation of Credit, Labor, and Business.
Workers' rights	Cingranelli and Richards (2008).
Size of government	Economic Freedom of the World Project, Size of Government: Expenditures, Taxes, Enterprises.
Power-sharing capacity	See below (political rights, power-sharing regime, democracy, and executive authority).
Political rights	United Nations, Freedom House web resources.
Power-sharing regime	Norris (2008).
Democracy	Polity IV Project, Political Regimes 1800-2009.
Executive authority	Polity IV Project, Political Regimes 1800-2009.
Income inequality	World Bank, OECD, CIA World Factbook, and Earth Trends.
Ethnolinguistic homogeneity	Britannica Book of the Year and CIA World Factbook.
Gross domestic product	World Bank.
Monarchy	Absolute or Constitutional Monarchies.
Nordic	Denmark, Finland, Iceland, Norway, and Sweden.
Temperature	Average Coldest Month of the Year (see World Meteorological Organization).
Pronoun-drop	License to Pronoun-Drop in a Country's Official Language (see Kashima and Kashima 1998).
Former communist	Former Marxist-Leninist Communist States.

Table 4.A.2. List of Cross-Sectional Time-Series Values for General Social Trust

	Wave					
	I	II	III	IV	V	VI
Country	1980-1984	1986†	1989-1993	1994-1998	1999-2004	2005-2009
Albania				27	24	10‡
Algeria					11	20ǂ
Argentina	27		23	18	15	18
Australia	48		40			46
Austria			32		34	36‡
Bangladesh				21	24	24ǂ
Belgium	29	30	33		31	35‡
Bolivia				18ǂ	19ǂ	21ǂ
Botswana					15ǂ	6ǂ
Brazil			7	3	4ǂ	9
Bulgaria			30	29	27	18‡
Canada	49		52		39	43
Chile			23	22	23	13
China			60	52	55	52
Colombia				11	17ǂ	14
Costa Rica				11ǂ	13ǂ	15ǂ
Croatia				25	18	20‡
Czech Republic				29	24	31‡
Denmark	51	64	58		67	76‡
Dominican Republic				26	13ǂ	25ǂ
Ecuador				20ǂ	16ǂ	18ǂ
Egypt					38	19
El Salvador				25ǂ	16ǂ	26ǂ
Estonia				22	23	32‡
Finland			63	49	58	66‡
France	24	21	23		22	27‡
Germany	31	43	35	38	35	39‡
Guatemala				30ǂ	18ǂ	16
Honduras				25ǂ	9ǂ	14ǂ
Hungary			25	23	22	21‡
Iceland					41	50‡
India					41	23
Indonesia					52	43
Ireland	42	33	47		36	38‡
Italy	25	30	34		33	29
Japan	41		42	46	43	39
Jordan					28	31
Latvia				25	17	26‡
Lithuania				22	25	30‡
Malaysia					9	9
Mexico			33	31	21	16
Morocco					24	13
Namibia					35ǂ	28ǂ
Netherlands	44	50	53		60	63‡
New Zealand				49		51
Nicaragua				21ǂ	11ǂ	11ǂ
Norway	61		65	65		74
Pakistan				21	31	50ǂ
Panama				25ǂ	16ǂ	16ǂ
Paraguay				24ǂ	17ǂ	16ǂ
Peru				5	11	6
Philippines				6	8	13ǂ

Poland			32	18	19	28‡
Portugal		28	21		10	20‡
Romania			16	24	10	18‡
Russian Federation					24	29‡
Singapore					17	31ǂ
Slovakia				27	16	13‡
Slovenia				16	22	24‡
South Africa				18	12	19
South Korea	38		34	30	27	28
Spain	34	35	34	30	36	35‡
Sri Lanka					11ǂ	25ǂ
Sweden	57		66	60	66	68
Switzerland			43	41		55‡
Tanzania					8	13ǂ
Thailand					31	42
Turkey			10	7	16	5
Ukraine					27	28‡
United Kingdom	44	40	44	31	30	31
United States	40		52	36	36	39
Uruguay				22	23ǂ	28
Venezuela				14	16	27ǂ
Zambia					20ǂ	12

WVS/EVS integrated data unless specified.
† = 1986 Eurobarometer 25 data.
ǂ = Asian, Latino, or Afro barometer data.
‡ = 2008 EVS Wave IV data.
No. countries = 74; No. observations = 248.

CHAPTER 5: FROM THE GENERAL TO THE SPECIFIC—HOW SOCIAL TRUST MOTIVATES RELATIONAL TRUST

Much of our knowledge about the political, sociological, and psychological origins of trust are derived from a small number of survey instruments intended to measure social trust (Rosenberg 1956). While consensus has yet to be reached, social trust is often defined as an expectation about the cooperativeness and helpfulness of individuals and organizations that is open ended with respect to possible matters (Hardin 2002); this includes such sister concepts as generalized trust (Nannestad 2008), out-group trust (Putnam 2007), particularized trust (Uslaner 2002), and political trust (Levi and Stoker 2000) among others.

During the past twenty years, Hardin (1993, 2002) and colleagues (Cook, Hardin, and Levi 2005) began to challenge the utility of social trust as a theoretical construct as well as the empirical validity of the survey items used to measure social trust and its related concepts (Delhey, Newton, and Welzel 2011; Miller and Mitamura 2002; Sturgis and Smith 2010). According to Hardin and colleagues, conceptions of trust centered on generalized trustees and unspecified matters for which trust is placed yield few analytical insights. As a result, it has become clear that conceptualizations of trust should move away from trust as a two-part relation—where A trusts persons or organizations of type B without any constraint on the scope of trust—to a form of *relational trust* consisting of three parts: A's cognitions (the truster), B's perceived trustworthiness (the trustee), and the specific matter, Y, of concern to A.

In spite of theoretical arguments against social trust and its ancillary concepts, can social trust—broadly defined and measured—inform and influence relational trust? Psychologists have long noted how beliefs, regardless of their generality or specificity, influence and mutually reinforce each other (Allport 1954; Bandura 1977; Festinger 1957), while contemporary research on social cognition shows that schemas are causally interrelated (Moskowitz 2005). For instance, role schemas are often used as a basis for attributions about person schemas (Fiske 1998), and self-schemas emerge, in part, from relational schemas (Baldwin 1992).

Based on this logic, there is reason to believe that cognitive schemas concerned with trust in categories of people and organizations should positively affect the trust we form in specific people about particular matters. As Messick and Kramer's (2001) "shallowness hypothesis" and Brewer's (2008) notion of "depersonalized trust" suggests: people are imperfect decision makers and employ various cognitive shortcuts, such as stereotypes and heuristics, when establishing trust in others. In other words, my trust in you is a function of my beliefs about your trustworthiness—largely derived from my experiences with you—as well as my cognitive schemas about prototypical individuals and organizations. Thus, the more optimistic a person is about the general cooperativeness of individuals and organizations, the more likely that person is to trust another individual with respect to a particular matter.

Although there is evidence that generalized trust, particularized trust, and political trust are causally interrelated (Glanville and Paxton 2007; Freitag and Traunmüller 2009; Newton and Zmerli 2011), existing work has not yet examined whether relational trust can spring from these alternative microfoundations. In economics, scholars have shown that social trust is associated with beliefs in other people's trustworthiness (Sapienza, Toldra-Simats, and Zingales 2013) as well as the behavior and preferences of trusters (Bellemare and Kroeger 2007; Thöni, Tyran, and Wengström 2012). Yet, this research has relied on behavioral measures of trust with suspect discriminant validity (Cox 2004; Cox, Friedman, and Sadiraj 2008) and laboratory conditions with questionable generalizability (Levitt and List 2007; Guala 2012). That is, the ultimate source of observed behavior in a laboratory experiment—be it trust, other-regarding preferences or some other social psychological mechanism—is empirically indeterminate; and to complicate matters even further, the experimental conditions in which such behavior is observed rarely occurs in the real world.

Here, I present data from four experiments in which I (a) tested the hypothesis that general social trust increases relational trust (hypothesis 6, chapter 3), and (b) investigated the influence of other social trust measures on relational trust (i.e., particular social trust and political trust). I developed two novel vignettes of simulated ‘car repair’ and ‘group project’ scenarios where uncertainty and risk were inherent to the situation. Each scenario consisted of a truster (the participant), a trustee (an auto mechanic or a student), and a particular matter (auto repairs or task completion). Numerous vignette dimensions were administered in each experiment, including randomized values for age, race and gender of the trustee. Depending on the experiment, participants reported their levels of trust, internal-external attributions, and experiences of gratitude and admiration. Participants assessed 10 vignettes in total, and afterwards were asked classic demographic questions and survey items concerned with social trust (general social trust, particular social trust, and political trust), risk aversion, betrayal aversion, and social preferences.

The two vignette experiments were administered to Amazon.com Mechanical Turk workers in studies 1a and 1b (N = 1,276 and N = 1,322) and to University of Washington undergraduate students in studies 2a and 2b (N = 884 and N = 841). Across all four experiments, multilevel mixed-effects models showed that general social trust and particular social trust increased relational trust (particular social trust > general social trust), while political trust was statistically unrelated. The results were robust to potential confounders including age, race, gender, income, education, risk aversion, betrayal aversion, prior trusting behavior, and social preferences. The present chapter is noteworthy as it dissected the causal relationship between social trust and relational trust under controlled conditions with high saliency and concreteness, which produced the first set of findings on the subject with strong internal and external validity.

Studies 1a and 1b

Method

Design and Participants. Each experiment features a 5 (Age: 20, 30, 40, 50, or 60 year old) x 4 (Race: white, black, Hispanic, or Asian) x 2 (Gender: male or female) x 4 (Reputation: no reputation or positive reputation) x 3 (Halo: blank, bad used computer, or good used computer) x 2 (Competence: blank or competent) x 2 (Exertion: blank or hard-working) x 6 (Perceived motivations: uncooperative, no prior interaction, prior interaction, encapsulated interests, goodwill, or virtuous dispositions) x 3 (Contract: blank, non-binding contract, or binding contract) x 3 (Regulation: no regulations, non-monetary regulations, or monetary regulations) multifactorial vignette design, which yields a factorial object universe of 103,680 (2^3 x 3^3 x 4^2 x 5^1 x 6^1) unique vignettes (Jasso 2006; Rossi and Nock 1982). One thousand two hundred and seventy-six Mechanical Turk workers completed study 1a (665 males, 593 females, 4 other gender, 14 PNS/missing; median age = 29), while one thousand three hundred and twenty-two Mechanical Turk workers completed study 1b (577 males, 722 females, 1 other gender, 22 PNS/missing; median age = 29). In both studies, workers were paid $2 for their participation. Each study consisted of a unique Mechanical Turk sample with no redundant workers across samples. Mechanical Turk workers that completed a single study from the same IP address were excluded from the analysis to minimize demand effects. Including these workers did not substantively alter the results presented in studies 1a and 1b. Overall sample size was determined by a power analysis, and my data collection stopping rule for each study consisted of reaching a target sample size of one thousand three hundred and fifty respondents.

Procedure. Participants were contacted over Amazon.com's Mechanical Turk (MTurk) via a HIT (Human Intelligence Task) advertising $2 payment for participating in a web-based experiment. To be eligible, MTurk participants must have been legal adults residing in the U.S. with approval rates 90% or above on previous MTurk tasks. After accepting the HIT and consenting to participate in the study, participants were shown a cover sheet for a hypothetical 'car repair' scenario:

> "You just started a new job that requires you to commute every day to work. A couple of days before the job starts you decide to take your car in to an automotive repair shop called The Autoshop for an oil change. In the middle of the oil change, the auto mechanic tells you about a major issue with your car's engine that will cost about $1,000 to repair, including parts and labor. You would like your car to be in working order, but you want to spend your money wisely since the amount of money required to restore the car's engine is large compared to your budget.
>
> Additionally, you have some concern: the auto mechanic might suggest fraudulent (or intentionally deceptive) services that are unnecessary and quite costly to you but beneficial to the auto mechanic. You're also concerned since the auto mechanic might provide low quality services at an exaggerated price that would require additional and costly repairs in the future. Plus, you know people who've paid for needless repairs and have had recurrent car problems because of poor quality auto-mechanic services."

Or a hypothetical 'group project' scenario:

> "You are a college student who is enrolled in a course that requires a group project assignment. Each group project involves two separate tasks, one student to analyze data and one student to write a technical report of the results. For your specific group, you were assigned the task of writing a technical report of the results, while your partner was assigned the task of analyzing the data.
>
> But you have some concern: students receive the same grade regardless of their contribution to the group project. You're also concerned since the group project is difficult to complete alone and your partner's contribution to the group project is unknown and uncertain. In other words, if your partner doesn't complete the data analysis for the group project, you might not finish in time and fail the assignment as you'll have to analyze the data without help and write a technical report of the results alone. But if you manage to analyze the data and write a technical report of the results, your partner will receive the same grade as you without having contributed to the group project. Unfortunately, you know people who have failed group projects in the past because other group members did not complete their assigned tasks."

The ‘car repair’ and ‘group project’ scenarios were constructed to maximize differences across a number of theoretically relevant parameters while maintaining congruency of dimensions between scenarios. These differences include the following (with ‘car repair’ versus ‘group project’ comparisons): bilateral versus unilateral exchange, market versus non-market exchange, tangible versus intangible resources, mutual dependence versus interdependence, and transferable versus non-transferable goods.

After this, participants were informed of how they would be assessing a series of hypothetical situations based on the initial scenario, and that each situation would end with two questions: one on relational trust and one on causal attributions. Participants were then quizzed on the respective scenarios outlined above with two of three screener questions and then shown ten vignettes randomly drawn with replacement from the vignette object universe of 103,680 unique vignettes.[27]

After assessing the ten vignettes, participants filled out a demographic questionnaire and a series of survey questions, which included measures of general social trust, particular social trust, political trust, inequality aversion, betrayal aversion, risk aversion, trusting behavior, social value orientations, and a final screener question. Afterwards, participants were shown a debriefing statement, thanked for their participation, and paid $2. The median time to complete study 1a and 1b was 18.12 and 18.92 minutes, respectively. See Appendix C for further details about the vignettes, dimensions, and measures.

Vignette-Level Dependent Variables

Relational Trust and Causal Attributions. At the bottom of each vignette, participants were asked two questions. One question assessed participants’ relational trust, while the other

[27] No respondent in either study 1a or study 1b assessed redundant vignettes.

assessed participants' casual attributions. Both questions were structured as 11-point bipolar scales, with the relational trust question phrased as follows ('group project' elements in parentheses): "Given the conditions above, to what extent do you trust the auto mechanic (student) to provide justifiable and quality auto repairs (to complete the assigned data analysis task)?", ranging from "complete distrust" (0 value) to "neither trust nor distrust" (50 value) to "complete trust" (100 value) with a "Don't know" option at the end of the scale (study 1a: *M* = 6.53, *SD* = 2.78, min = 0, max = 10; study 1b: *M* = 7.51, *SD* = 2.28, min = 0, max = 10).[28] Although not investigated in the present chapter, the causal attributions question followed a similar structure (see Appendix C for further details about this question). Both scales were then divided by 10 to produce variables ranging from 0 to 10. And "don't know" responses were treated as missing.[29] The causes and effects of causal attribution will be explored in later chapters.

Individual-Level Independent Variables

Following prior research (Newton and Zmerli 2011), I used a number of survey items to measure indicators of social trust, which included dimensions for general social trust, particular social trust, and political trust.

General Social Trust. General social trust was measured using five items. The first item consisted of the classic binary trust question from the General Social Survey: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" Responses included "most people can be trusted", "need to be very careful", and "don't know." The remaining four items were responses to the following question:

[28] Study 1a: 18 responses (or 0.10% of all responses) consisted of "Don't know"; study 1b: 10 responses (or 0.08% of all responses) consisted of "Don't know".
[29] Study 1a: 34 responses (or 0.27% of all responses) consisted of "Don't know"; study 1b: 20 responses (or 0.15% of all responses) consisted of "Don't know".

“We'd like to ask you how much you trust people from various groups. Could you tell us for each whether you trust people from this group completely, distrust people from this group completely, or neither trust nor distrust people from this group?” Participants answered this question for “people you meet for the first time”, “strangers”, “people of another nationality”, and “people of another religion.” Responses were made on an 11-point scale ranging from 0 (*complete distrust*) to 50 (*neither trust nor distrust*) to 100 (*complete trust*), with a “don’t know” option at the end of each scale (each item was divided by 10 to produce variables ranging from 0 to 10). These four items were summed and divided by four to form the general social trust scale (study 1a: $\alpha = .85$; study 1b: $\alpha = .84$). Those who answered “don’t know” were treated as missing (study 1a: 14 responses—or 1% of all responses—consisted of “don’t know”, while 2 respondents did not provide answers; study 1b: 31 responses—or 2% of all responses—consisted of “don’t know”, while 6 respondents did not provide answers).

Particular Social Trust. Four items measured particular social trust. Embedded within the same matrix grid as items for the general social trust scale were “your family”, “your friends”, “your neighbors”, and “people you know personally” (each item was divided by 10 to produce variables ranging from 0 to 10). These four items were summed and divided by four to form the particular social trust scale (study 1a: $\alpha = .78$; study 1b: $\alpha = .77$). Those who answered “don’t know” were treated as missing (study 1a: 13 responses—or 1% of all responses—consisted of “don’t know”, while 17 respondents did not provide answers; study 1b: 18 responses—or 1.3% of all responses—consisted of “don’t know”, while 6 respondents did not provide answers).

Political Trust. I measured political trust using a matrix grid consisting of four items, which were responses to the following question: “Now we'd like to ask you how much you trust certain organizations and institutions. Could you tell us for each whether you trust these organizations and institutions completely, distrust these organizations and institutions completely, or neither trust nor distrust these organizations and institutions?" These four items included "Congress and the Senate", "Public authorities", "Courts", and "Police." Responses were made on an 11-point scale ranging from 0 (*complete distrust*) to 50 (*neither trust nor distrust*) to 100 (*complete trust*), with a "don't know" option at the end of each scale (each item was divided by 10 to produce variables ranging from 0 to 10). The items were summed and divided by four to form the political trust scale (study 1a and 1b: $\alpha = .84$). Those who answered "don't know" were treated as missing (study 1a: 10 responses—or 0.8% of all responses—consisted of "don't know", while 9 respondents did not provide answers; study 1b: 10 responses—or 0.7% of all responses—consisted of "don't know", while 11 respondents did not provide answers).

A three factor confirmatory factor analysis of the general social trust, particular social trust, and political trust scales revealed the following: for study 1a, none of the standardized factors loadings were less than 0.57 and none of the correlations between factors were greater than 0.57; for study 1b, none of the standardized factor loadings were less than 0.55 and none of the correlations between factors were greater than 0.60. Taken together, these results support construct validity within factors and discriminant validity between factors.

Individual-Level Control Variables

Social Value Orientations. Participants were provided with and completed the triple dominance measure of social values (Van Lange et al. 1997; Van Lange 1999), which I used to gauge other-regarding preferences. This measure consisted of nine hypothetical decision scenarios, where participants decided for each scenario how to divide resources between themselves and a hypothetical stranger, or "other". Each scenario included three options corresponding to one of three social values: a *cooperative* choice, which maximized joint gain; an *individualist* choice, which maximized personal gain without regard to the other's outcome; and a *competitive* choice, which maximized the difference between gains to self and other. Participants were classified as cooperative, individualist, or competitive if they made six or more choices corresponding to one of the social value orientations. From this, I constructed three dummy variables: social preferences (consisting of the cooperative orientation), egoistic preferences (consisting of the individualist and competitive orientations), and unclassified preferences (consisting of those not classified as either cooperative, individualist, or competitive). This scale was included to control for possible false consensus effects whereby the trust that A forms in B is partly a function of A's own trustworthiness (see Butler, Giuliano, and Guiso 2013).

Preference Aversions. I measured risk aversion with one item: "Are you, generally speaking, a person who avoids taking risks, or a person who is fully prepared to take risks?" Responses were made on a scale from 0 (*avoid taking risks*) to 10 (*fully prepared to take risks*), with a "don't know" option at the end of the scale (those who answered "don't' know" were treated as missing).[30] Inequality aversion and betrayal aversion were measured in response to "To what degree do you agree with the following statements?" using the following statements, respectively: "Wages and incomes should be made more equal" and "If someone offends me, I will also offend him or her." Each item ranged from 0 (*strongly disagree*) to 5 (*neutral*) to 10 (*strongly agree*), with a "don't know" option at the end of the scale (those who answered "don't

[30] Study 1a: 1 response was "Don't know" and every respondent provided an answer; study 1b: 7 responses were "Don't know" and 1 respondent did not provide an answer.

know" were treated as missing).[31] These items were included since various measures of preference aversions have been shown to confound the relationship between social trust and behavioral trust (see Fehr 2009).

Trusting Behavior. Three items—lend possessions, lend money, and unlocked door—were used to capture prior trusting behavior: (i) "How often do you lend personal possessions to your friends (tools, books, your car or bicycle, etc.)?", (ii) "How often do you lend money to your friends?", and (iii) "How often do you leave your door unlocked?" Each item was treated as a continuous variable (1 = never, 2 = infrequently, 3 = sometimes, 4 = often, and 5 = very often). Those who answered "prefer not to say" were treated as missing. These variables were included as prior trusting behaviors might confound the relationship between social trust and relational trust (see Glaeser et al. 2000; Naef and Schupp 2009).[32]

Demographic Variables. I treated age as a continuous variable (study 1a: 1 respondent did not provide an age; study 1b: 4 respondents did not provide age). Gender was coded 0 for female (and other gender) and 1 for male (study 1a: 3 responses consisted of "prefer not to say", while 6 respondents did not provide answers; study 1b: 8 responses consisted of "prefer not to say", while 11 respondents did not provide answers).

Results

Intra-class correlations for relational trust were small to moderate (study 1a = .09; study 1b = .13), demonstrating some variance between individuals with most variance within

---

[31] For inequality aversion, 31 and 23 responses were "Don't know" in study 1a and study 1b, respectively, while 4 and 3 respondents did not provide answers in study 1a and study 1b, respectively; for betrayal aversion, 1 and 4 responses were "Don't know" in study 1a and study 1b, respectively, while 3 and 3 respondents did not provide answers in study 1a and study 1b, respectively.

[32] For lend possessions, 0 and 5 responses were "Don't know" in study 1a and study 1b, respectively, while 9 and 0 respondents did not provide answers in study 1a and study 1b, respectively; for lend money, 3 and 6 responses were "Don't know" in study 1a and study 1b, respectively, while 10 and 4 respondents did not provide answers in study 1a and study 1b, respectively; for door unlocked, 8 and 15 responses were "Don't know" in study 1a and study 1b, respectively, while 9 and 5 respondents did not provide answers in study 1a and study 1b, respectively.

individuals (thus supporting hypotheses 20 and 21 outlined in chapter 3). I employed two-level means-as-outcomes mixed-effects models to simultaneously estimate the sources of relational trust at the between-person level (i.e., at the individual level) and at the within-person level (i.e., at the vignette level) (Raudenbush and Bryk 2002). The level-1 (or within-person level) model of relational trust (Y) from vignette number (X_{VN}) and vignette dimensions (X_{VD}) was modeled as follows:

$$Y_{ij} = \beta_{0j} + \beta_{1j} X_{VN_{ij}} + \sum_{q=1}^{Q} \beta_{qj} X_{VD_{qij}} + e_{ij} \tag{5.1}$$

where Y_{ij} is relational trust in the ith vignette for the jth individual. The term e_{ij} is the level-1 disturbance for Y assumed i.i.d normal. The intercept for Y in the jth individual is designated β_{0j}, the effect of X_{VN} on Y is designated β_{1j}, and the direct effect of X_{VD} for the qth dimension in the ith vignette for the jth individual on Y is designated β_{qj}.

A level-2 (or between-person level) equation was specified to model the random intercept β_{0j} from individual-level variables (W) according to the following:

$$\beta_{0j} = \gamma_{00} + \sum_{q=1}^{Q} \gamma_{0q} W_{qj} + u_{0j} \tag{5.2}$$

where γ_{00} is the population intercept for Y_{ij}, γ_{0q} is a qth individual-level regression coefficient for W_{qj}, and u_{0j} is the random disturbance assumed normally distributed for γ_{00}. According to equation 5.2, the slopes for all level-1 (or vignette level) effects have been fixed. Model parameters were estimated in Stata 13.1.

I estimated my models such that I examined, at the between-person level, effects of social trust (general social trust, particular social trust, and political trust), social preferences, unclassified preferences, risk aversion, inequality aversion, betrayal aversion, lend possessions, lend money, unlocked door, age, and gender on relational trust. At the within-person level, I included the effects of each vignette dimension on relational trust. I did not show these dimensions for reasons of brevity as their effects will be explored in later chapters. Figure 5.1 reveals the full set of point estimates at the between-person level for studies 1a and 1b (Table 5.A.1 in "Chapter 5: Appendix A" provides descriptive statistics).

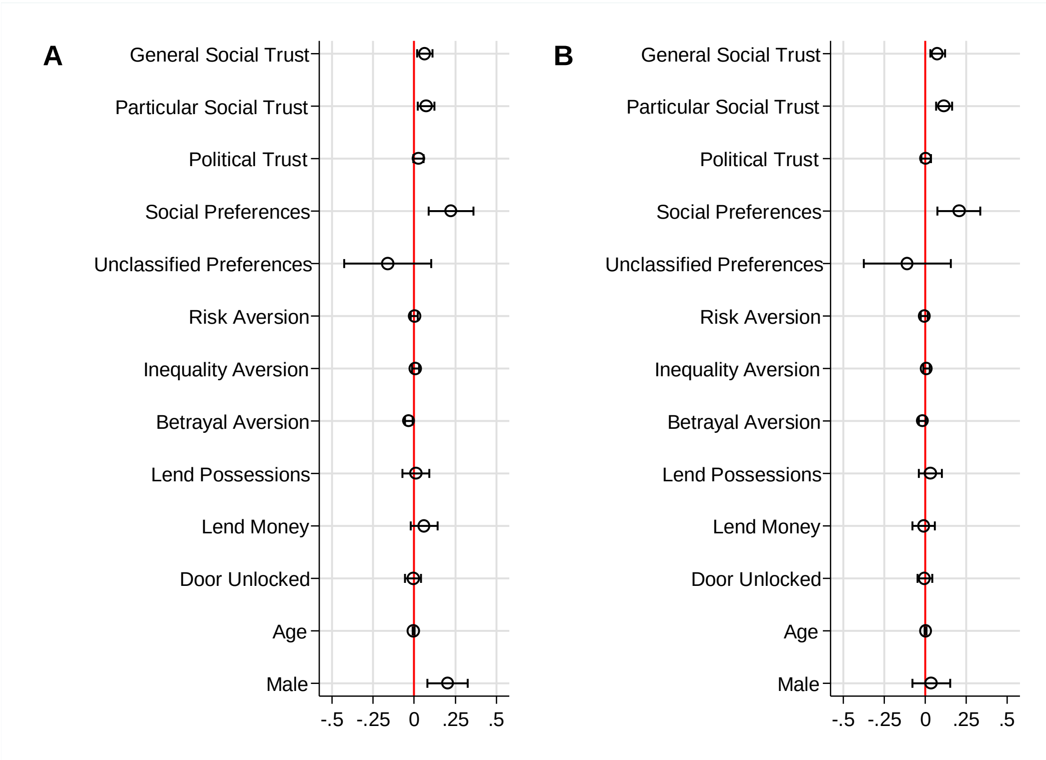

Figure 5.1. Visual summary of point estimates for individual-level independent variables and control variables used in study 1a (panel A), the "car repair" scenario, and study 1b (panel B), the "group project" scenario. The circles represent point estimates, while the horizontal lines with whiskers represent 95% confidence intervals. The x-axis provides the range of parameter estimates, while the y-axis displays the variable labels. The red vertical line signifies zero. The gray gridlines are for purposes of point-estimate comparison. Study 1a (observations = 11340, individuals = 1138), Study 1b (observations = 11760, individuals = 1179).

As Figure 5.1 shows, at the between-person level, greater general social trust (study 1a: $b = 0.065$, $SE = 0.02$, $p < .01$; study 1b: $b = 0.08$, $SE = 0.02$, $p < .01$) and particular social trust (study 1a: $b = 0.07$, $SE = 0.03$, $p < .01$; study 1b: $b = 0.12$, $SE = 0.02$, $p < .001$) (both measured as scales) were directly associated with higher relational trust in studies 1a and 1b, where the former finding supports hypothesis 6. Substituting the general social trust scale for the classic binary general social trust question yielded similar results (study 1a: $b = 0.19$, $SE = 0.07$, $p < .01$; study 1b: $b = 0.17$, $SE = 0.06$, $p < .01$). Interestingly, political trust was statistically unrelated to relational trust regardless of the study. Thus, inequality of effects were observed among the social trust measures, with particular social trust > general social trust > political trust (ns). The difference in effect size was such that mean-levels of relational trust were 0.60 (study 1a) and 0.80 (study 1b) for general social trust and 0.70 (study 1a) and 1.20 (study 1b) for particular social trust when the scales were at their greatest (i.e., a value of 10): a sizeable difference in predicted mean-levels of relational trust. Finally, excluding those who failed three screener questions did not substantively change the results for either study.

With respect to the control variables, only social preferences (i.e., other-regarding preferences) generated statistically significant results across both studies, while betrayal aversion was negatively related to relational trust in study 1a ($b = -0.03$, $SE = 0.01$, $p < .01$) but not study 1b ($b = -0.02$, $SE = .01$, $p > .10$) and men generated higher levels of relational trust than women and other genders in study 1a ($b = 0.20$, $SE = 0.06$, $p = .001$) but not study 1b ($b = 0.04$, $SE = 0.05$, $p > .10$). Although not shown, I explored the impact of other classic demographic control variables including race, income, and education (see Appendix C for information regarding these questions). Across studies 1a and 1b, none of the alternative control variables substantively altered the impact of general social trust, particular social trust, or political trust on relational trust (see "Chapter 5: Appendix B" for the results).

The total level-2 variance explained by either model in study 1a (level-2 $R^2 = .12$) or study 1b (level-2 $R^2 = .11$) was small, while the total level-2 variance explained only by the social trust variables in study 1a (level-2 R^2 = .07) and study 1b (level-2 R^2 = .09) was trivial.

Studies 2a and 2b

Method

Participants and Design. Ten thousand undergraduate students at the University of Washington were contacted. All students were randomly selected from a publicly available student directory. Of these ten thousand students, five thousand were randomly selected for each experiment. Eight hundred and eighty-four undergraduate students at the University of Washington (Seattle) completed study 2a (334 males, 527 females, 5 other gender, 18 PNS/missing; median age = 20), while eight hundred and forty-one undergraduate students completed study 2b (298 males, 519 females, 4 other gender, 20 PNS/missing; median age = 20). With respect to response rates, thirteen students did not meet study 2a's eligibility requirements (e.g., reported not being legal adults), which produced a 17.7% response rate (e.g., 884 completed/4,987 eligible); while sixteen students did not meet study 2b's eligibility requirements, which produced a 16.9% response rate (e.g., 841 completed/4,984 eligible). In both studies, students who participated were entered into a lottery for the chance to win one of six \$50 bills. Studies 2a and 2b featured the same $2^3 \times 3^3 \times 4^2 \times 5^1 \times 6^1$ multifactorial vignette design as studies 1a and 1b. Overall sample size was determined by a power analysis, and my data collection stopping rule consisted of one full academic quarter of recruitment with at least ten recruitment e-mails sent in total.[33]

Procedure. Studies 2a and 2b were administered in the same way as studies 1a and 1b, respectively, with four exceptions. First, participants were contacted over e-mail advertising lottery payment for participating in a web-based sociology experiment. Second, eligibility was

[33] No respondent in study 2a assessed redundant vignettes, while only one respondent in study 2b assessed two of the same vignettes.

restricted to University of Washington undergraduate students with legal adult status. Third, the median time to complete studies 2a and 2b was 20.26 and 20.24 minutes, respectively. Fourth, two vignette-level dependent variables (gratitude and admiration) preceded the relational trust dependent variable.

Vignette-Level Dependent Variables

Relational Trust and Other-Praising Emotions. One question measured trust (drawn from studies 1a and 1b) (study 2a: M = 6.73, SD = 2.47, min = 0, max = 10; study 2b: M = 7.53, SD = 2.24, min = 0, max = 10), while two other questions assessed gratitude and admiration.[34] All three questions were structured as 11-point bipolar scales. Although not investigated in the present chapter, the gratitude and admiration questions followed a similar structure (see Appendix C for further details about these questions). All three scales were then divided by 10 to produce variables ranging from 0 to 10. And "don't know" responses were treated as missing. The causes and effects of gratitude and admiration will be explored in Chapter 6.

Individual-Level Independent Variables

All individual-level independent variables used in studies 1a and 1b were employed in studies 2a and 2b. The primary differences concerned α-levels, which are as follows: general social trust scale (study 1a: α = .85; study 1b: α = .83), particular social trust scale (study 1a: α = .71; study 1b: α = .72), and political trust scale (study 1a and 1b: α = .86).[35]

[34] Study 2a: 24 responses (or 0.27% of all responses) to the trust question, 64 responses (or 0.72% of all responses) to the gratitude question, and 80 responses (or 0.90% of all responses) to the admiration question consisted of "Don't know"; study 2b: 16 responses (or 0.19% of all responses) to the trust question, 59 responses (or 0.70% of all responses) to the gratitude question, and 66 responses (or 0.78% of all responses) to the admiration question consisted of "Don't know".

[35] For the general social trust scale, 35 responses—or 3.9% of all responses—consisted of "don't know" in study 2a, while 4 respondents did not provide answers; 37 responses—or 4.4% of all responses—consisted of "don't know" in study 2b, while 1 respondent did not provide an answer. For the particular social trust scale, 12 responses—or 1.4% of all responses—consisted of "don't know" in study 2a, while 1 respondent did not provide an answer; 15 responses—or 1.8% of all responses—consisted of "don't know" in study 2b, while 6 respondents did not provide answers. For the political trust scale, 47 responses—or 5.3% of all responses—consisted of "don't know" in study 2a, while 9 respondents did not provide answers; 43 responses—or 5.2% of all responses—consisted of "don't

Following studies 1a and 1b, a three factor confirmatory factor analysis of the general social trust, particular social trust, and political trust scales revealed the following: for study 2a, none of the standardized factors loadings were less than 0.56 and none of the correlations between factors were greater than 0.45; for study 2b, none of the standardized factor loadings were less than 0.46 and none of the correlations between factors were greater than 0.63. Once again, these results support construct validity within factors and discriminant validity between factors (more so for study 2a than study 2b however).

Individual-Level Control Variables

All individual-level control variables used in studies 1a and 1b were employed in studies 2a and 2b.[36]

Results

Intra-class correlations for relational trust were moderate and slightly greater than those found in studies 1a and 1b (study 2a = .18; study 2b = .25), once again demonstrating some variance between individuals with most variance within individuals (again supporting hypotheses 20 and 21). To analyze the relations, I employed the two-level means-as-outcomes mixed-effects models specified in equations 5.1 and 5.2. Like studies 1a and 1b, all modeling procedures were estimated in Stata 13.1.

---

know" in study 2b, while 13 respondents did not provide answers.

[36] For risk aversion, 6 and 8 responses were "Don't know" in study 2a and study 2b, respectively, while 3 and 0 respondents did not provide answers in study 2a and study 2b, respectively; for inequality aversion, 23 and 25 responses were "Don't know" in study 2a and study 2b, respectively, while 0 and 7 respondents did not provide answers in study 2a and study 2b, respectively; for betrayal aversion, 3 and 10 responses were "Don't know" in study 2a and study 2b, respectively, while 0 and 4 respondents did not provide answers in study 2a and study 2b, respectively; for lend possessions, 1 and 5 responses were "prefer not to say" in study 2a and study 2b, respectively, while every respondent provided answers in study 2a and study 2b, respectively; for lend money, 3 and 7 responses were "prefer not to say" in study 2a and study 2b, respectively, while 2 and 0 respondents did not provide answers in study 2a and study 2b, respectively; for door unlocked, 6 and 9 responses were "prefer not to say" in study 2a and study 2b, respectively, while 3 and 6 respondents did not provide answers in study 2a and study 2b, respectively; for age, 2 and 7 respondents did not provide age in studies 2a and 2b, respectively; and for gender, 3 and 5 responses were "prefer not to say" in study 2a and study 2b, respectively, while 3 and 5 respondents did not provide answers in study 2a and study 2b.

Following studies 1a and 1b, I examined, at the between-person level, effects of social trust (general social trust, particular social trust, and political trust), social preferences, unclassified preferences, risk aversion, inequality aversion, betrayal aversion, lend possessions, lend money, unlocked door, age, and gender on relational trust. At the within-person level, I included the effects of each vignette dimension on relational trust (these dimensions were not shown for reasons of brevity, but will be explored in later chapters). Figure 5.2 reveals the full set of point estimates at the between-person level for studies 2a and 2b (Table 5.A.2 in "Chapter 5: Appendix A" provides descriptive statistics).

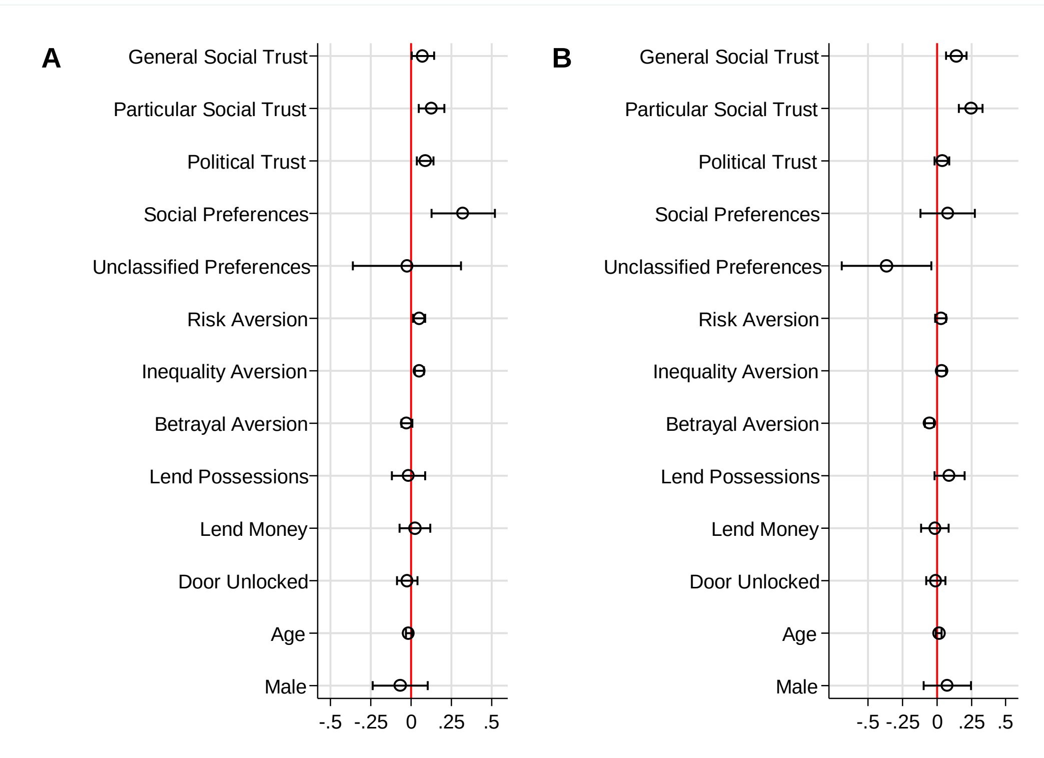

Figure 5.2. Visual summary of point estimates for individual-level independent variables and control variables used in study 2a (panel A), the "car repair" scenario, and study 2b (panel B), the "group project" scenario. The circles represent point estimates, while the horizontal lines with whiskers represent 95% confidence intervals. The x-axis provides the range of parameter estimates, while the y-axis displays the variable labels. The red vertical line signifies zero. The gray gridlines are for purposes of point-estimate comparison. Study 2a (observations = 7324, individuals = 740), Study 2b (observations = 6736, individuals = 681).

As Figure 5.2 shows, at the between-person level, greater general social trust (study 2a: $b = 0.07$, $SE = 0.035$, $p < .05$; study 2b: $b = 0.14$, $SE = 0.04$, $p < .001$) and particular social trust (study 2a: $b = 0.13$, $SE = 0.04$, $p = .001$; study 2b: $b = 0.25$, $SE = 0.04$, $p < .001$) were directly associated with higher relational trust in studies 2a and 2b, where the former finding supports hypothesis 6. Substituting the general social trust scale for the classic binary general social trust question yielded similar results (study 2a: $b = 0.19$, $SE = 0.09$, $p < .05$; study 2b: $b = 0.31$, $SE = 0.10$, $p < .01$). Interestingly, political trust was statistically related to relational trust in the "car repair" scenario (study 2a: $b = 0.08$, $SE = 0.03$, $p = .001$) but not the "group project" scenario (study 2b: $b = 0.04$, $SE = 0.03$, $p > .10$). Thus, inequality of effects were observed among the social trust measures, with particular social trust > general social trust > political trust. The difference in effect size was such that mean-levels of relational trust were 0.70 (study 2a) and 1.40 (study 2b) for general social trust and 1.30 (study 2a) and 2.50 (study 2b) for particular social trust when the scales were at their greatest (i.e., a value of 10): a sizeable difference in predicted mean-levels of relational trust. Finally, excluding those who failed three screener questions substantively changed the results for the general social trust scale in study 2a ($b = 0.02$, $SE = 0.05$, $p > .10$), the particular social trust scale in study 2b ($b = 0.08$, $SE = 0.06$, $p > .10$), and the political trust scale in study 2b ($b = 0.09$, $SE = 0.03$, $p = .011$). Such changes were observed since nearly three hundred individuals from each study were excluded for failing the three screener questions.

With respect to the control variables, social preferences ($b = 0.32$, $SE = 0.10$, $p = .001$), risk aversion ($b = 0.05$, $SE = 0.02$, $p < .01$), and inequality aversion ($b = 0.05$, $SE = 0.01$, $p < .001$) reached statistical significance in study 2a, while unclassified preferences ($b = -0.37$, $SE = 0.16$, $p < .05$), inequality aversion ($b = 0.03$, $SE = 0.015$, $p < .05$), and betrayal aversion ($b =$ -

0.06, *SE* = 0.02, *p* = .001) reached statistical significance in study 2b. In other words, only inequality aversion was statistically associated with relational trust across both scenarios. Although not shown, I explored the impact of other classic demographic control variables including race, income, and education (see Appendix C for information regarding these questions). Across studies 2a and 2b, none of the alternative control variables substantively altered the impact of general social trust, particular social trust, or political trust on relational trust (see "Chapter 5: Appendix C" for the results).

The total level-2 variance explained by either model in study 2a (level-2 R^2 = .18) or study 2b (level-2 R^2 = .24) was moderate, while the total level-2 variance explained only by the social trust variables was small in study 2a (level-2 R^2 = .12) and moderate in study 2b (level-2 R^2 = .19).

Discussion and Conclusion

The current chapter addressed a longstanding issue in the literature on trust and cooperation by investigating the extent to which social trust—expectations about the cooperativeness and helpfulness of individuals and organizations with respect to all matters—influences relational trust (or A's belief about B's trustworthiness with respect to matter Y). Two vignette experiments of simulated 'car repair' and 'group project' scenarios administered to two separate populations—one purposive sample (Amazon.com's Mechanical Turk workers) and one random sample (University of Washington undergraduate students)—produced five key findings.

First, my results replicated prior work revealing a positive relationship between general social trust and belief-, preference-, and behavioral-based measures of trust (Sapienza, Toldra-Simats, and Zingales 2013; Thöni, Tyran, and Wengström 2012). Respondents who reported high levels of general social trust also reported high mean-levels of relational trust across both experiments and populations. In these cases, a respondent's trust in a simulated trustee with respect to a particular matter ('car repairs' or 'project completion') was partially a function of the expectations that a respondent held about the general cooperativeness of strangers. Importantly, these results were consistent across various measures of general social trust, including the classic binary general social trust question. In spite of this, the effect size for the classic binary general social trust question was small, especially in relation to other measures of social trust as well as some control variables.

Second, the current chapter generated novel findings in that it was the first study to find a statistically significant relationship between particular social trust and relational trust. Across simulated scenarios and populations, higher levels of particular social trust were consistently related to higher mean-levels of relational trust. Interestingly, this positive effect was greater for particular social trust than for general social trust. These results imply that my trust toward specific people about particular matters of interest is influenced to a greater extent by my beliefs in the trustworthiness of friends, family, and neighbors than strangers. This finding is unexpected given the literature's emphasis on general social trust in promoting cooperation, social order, and collective action (Fukuyama 1995) and on particular social trust in undermining these outcomes (Banfield 1958). The present findings thus provided evidence for the power of particular social trust over general social trust in fostering everyday interactions, exchanges, and transactions.

Third, I found weak evidence for the role of political trust in generating relational trust. In only one study (study 2a) was there observed a positive and statistically significant effect between political trust and relational trust, while the remaining three studies consistently generated null findings. These results are important in light of current trends in social psychology and the methods used in the present chapter. Recent publications in the social sciences (Murayama, Pekrun, and Fiedler 2013) and medical sciences (Ioannidis 2005) have called for the collection of large (random) samples and the replication of studies within a single manuscript to reduce false-positive findings, which currently plagues the psychological sciences (Simmons, Nelson, and Simonsohn 2011). If study 2a was the sole experiment, a number of false positives would have been reported; by creating two distinct vignette experiments and fielding these experiments in two separate populations, a false-positive relationship between political trust and relational trust was greeted with greater skepticism.

Fourth, I observed that much of the variation in relational trust—as dictated by the intra-class correlation coefficient—occurred within-persons (or at the vignette level), and that a small fraction of the variance resided between-persons (or at the individual level). In spite of this, I found that social trust did account for small to moderate amounts of the variance explained at the individual level, with observed effects greater for particular social trust than for general social trust: anywhere from one half to two and a half points on an 11-point scale were accounted for by measures of social trust. The implication being that the level of relational trust A forms about B with respect to matter Y is contingent on A's beliefs about the general trustworthiness and cooperativeness of friends, family, and strangers. These beliefs act as reference points and anchors that people employ when forming trust in specific actors for particular matters. And actors deviate from these anchors when characteristics of the trustee, the exchange relationship, and the situation change or evolve. In other words, the situation determines the extent to which an individual departs from their base level of relational trust, which is, in part, determined by their personal level of social trust.

Fifth, the observed relationship between social trust and relational trust was highly robust, emerging across studies with varying participant samples (MTurk workers and undergraduate students), sampling methods (purposive and random sampling), experimental contexts (car repair and group project scenarios), and control variables (attitudinal and demographic controls). With respect to the latter, a large number of control variables were statistically related to relational trust across the four experiments, such as betrayal aversion, inequality aversion, and risk aversion. But only social preferences reached statistical significance in at least three of the four experiments. This finding aligns with recent research in behavioral economics showing how false consensus effects can bias trust formation (Butler, Giuliano, and Guiso 2013): the trust that A forms in B is partly a function of A's own trustworthiness; that is, one might ask oneself "How would I behave under these circumstances?" when deciding whether to trust. Altogether, the methods employed in the present chapter avoided possible false-positive effects, such as men generating greater trust than women or risk takers producing greater trust than the risk averse, but supported the role of social preferences in forming trust.

To conclude, future research should investigate how alternative measures of social trust influence relational trust, as well as the extent to which social trust impacts relational trust in dynamic situations where trusters exchange with the same or different trustees through time. Future studies should also replicate the inequality of effects observed between particular social trust and general social trust across diverse populations and experimental conditions.

CHAPTER 5: APPENDIX A

Table 5.A.1. Descriptive Statistics for Individual-Level Variables, Studies 1a and 1b

	Study 1a: Car Repair Scenario				Study 1b: Group Project Scenario			
	Mean	SD	Min	Max	Mean	SD	Min	Max
General social trust scale	4.54	1.50	0	10	4.49	1.50	0	10
General social trust, binary	.46	--	0	1	.48	--	0	1
Particular social trust scale	7.26	1.40	0	10	7.24	1.43	.25	10
Political trust scale	4.26	2.04	0	10	4.32	2.02	0	10
Individualist preferences (ref.)	.24	--	0	1	.22	--	0	1
Competitive preferences (ref.)	.03	--	0	1	.04	--	0	1
Social preferences	.67	--	0	1	.68	--	0	1
Unclassified preferences	.06	--	0	1	.06	--	0	1
Risk aversion	5.06	2.71	0	10	5.43	2.70	0	10
Inequality aversion	6.88	2.88	0	10	6.81	2.95	0	10
Betrayal aversion	3.31	2.65	0	10	3.17	2.61	0	10
Lend possessions	2.86	.93	1	5	2.91	.96	1	5
Lend money	2.17	.91	1	5	2.18	.94	1	5
Unlocked door	2.01	1.25	1	5	2.00	1.26	1	5
Age	32.53	11.51	18	81	31.94	10.75	18	76
Female (ref.)	.47	--	0	1	.56	--	0	1
Other gender (ref.)	.003	--	0	1	.001	--	0	1
Male	.53	--	0	1	.44	--	0	1

Table 5.A.2. Descriptive Statistics for Individual-Level Variables, Studies 2a and 2b

	Study 2a: Car Repair Scenario				Study 2b: Group Project Scenario			
	Mean	SD	Min	Max	Mean	SD	Min	Max
General social trust scale	4.90	1.38	0	10	4.83	1.32	0	10
General social trust, binary	.50	--	0	1	.51	--	0	1
Particular social trust scale	7.70	1.18	1	10	7.54	1.17	1.75	10
Political trust scale	5.31	1.75	0	10	5.18	1.72	0	10
Individualist preferences (referent)	.17	--	0	1	.16	--	0	1
Competitive preferences (referent)	.05	--	0	1	.05	--	0	1
Social preferences	.62	--	0	1	.63	--	0	1
Unclassified preferences	.16	--	0	1	.16	--	0	1
Risk aversion	5.96	2.26	0	10	5.95	2.22	0	10
Inequality aversion	6.48	2.88	0	10	6.56	2.71	0	10
Betrayal aversion	3.10	2.47	0	10	3.28	2.58	0	10
Lend possessions	3.35	1.00	1	5	3.20	.93	1	5
Lend money	2.74	1.03	1	5	2.64	1.00	1	5
Unlocked door	2.12	1.31	1	5	2.02	1.23	1	5
Age	20.79	4.40	18	63	20.81	4.17	18	60
Female (ref.)	.61	--	0	1	.63	--	0	1
Other gender (ref.)	.005	--	0	1	.004	--	0	1
Male	.39	--	0	1	.36	--	0	1

CHAPTER 5: APPENDIX B

Studies 1a and 1b

In this appendix I explore a number of additional individual-level control variables. I outline these control variables below (they can also be found in Appendix C) as well as explore their relative impacts on relational trust, especially in relation to the three measures of social trust (general social trust, particular social trust, and political trust).

Additional Individual-Level Control Variables

Marital status. To assess marital status, I asked respondents the following question: "What is your current marital status?" Possible answers included "never married", "married", "separated because of marital problems", "divorced", "widowed", and "prefer not to say". Each of these categories were coded as dummy variables with "never married" as the referent category.

Cohabitation status. For cohabitation status, I asked subjects to respond to the following question: "Have you ever lived with a partner when you were not married?" Possible answers included "Yes, I am currently living with a partner", "Yes, I have lived with a partner in the past", "no", and "prefer not to say". Each of these categories were coded as dummy variables with "no" as the referent category.

Religious denomination. I measured religious denomination with responses to the following: "With what religious group, if any, do you most closely identify?" Possible answers included over forty-four religious denominations, including Adventist, African Methodist, Holiness, and Jewish (for a full list of denominations, see Appendix C). I then created the following categories based on observed frequencies: Baptist, Buddhist, Catholic, Jewish, Latter Day Saints, Lutheran, Methodist, Presbyterian, Christian (non-denominational), no religion (e.g., Agnostic, Atheist, etc.), no denominational identification, other religious denomination, and don't know. Each of these categories were coded as dummy variables with "Catholic" as the referent category.

Religious services. To measure religious behavior, I asked respondents "How often do you attend religious services?", with possible responses including "more than once a week", "once a week", "once or twice a month", "a few times a year", "never", "don't know", and "prefer not to say". This variable was treated as continuous; those who answered "don't know" and "prefer not to say" were excluded from the analysis.

Evangelical identity. For those who identify as evangelical Christians, I asked "Would you describe yourself as an evangelical Christian?" Possible responses were "yes", "no", "don't know", and "prefer not to say". Each of these categories were coded as dummy variables ("don't know" and "prefer not to say" were collapsed into one dummy variable) with "no" as the referent category.

Income. A respondent's income was measured using answers to the following question: "What is your best estimate of your household income last year? Consider income from all sources before taxes." Respondents were shown twenty-one possible categories, including "don't know" and "prefer not to say" (see Appendix C for the income categories). The remaining nineteen categories were collapsed into the following ranges: "less than \$24,999", "between \$25,000 and \$49,999", "between \$50,000 and \$74,999", and "greater than \$75,000". These categories where then coded as dummy variables ("don't know" and "prefer not to say" were treated as separate dummy variables); "greater than \$75,000" was the referent category.

Educational degree. To control for education, I asked respondents "What is the highest degree that you have received?", with categories for "none", "GED or alternative credential", “high school diploma (regular 12 year program)”, “associate/junior college degree (AA, AS)”, “bachelor’s degree (BA, BS)”, “master’s degree (MA, MS, MEng, MBA, MPH, Med, MSW, MPA, etc.)”, “professional degree (DDS, LLB, JD, MD, OD, DVM, or other advanced professional degree”, “doctorate (PhD, EdD)”, “don’t know”, and “prefer not to say”. Each of these categories were treated as dummy variables (“don’t know” and “prefer not to say” responses were treated as one variable), with master’s degree, professional degree, and doctorate as referent categories.

Race and ethnicity. A respondent’s race and ethnicity were measured using two questions, one assessing the respondent’s Hispanic and Latino/a origins (“Are you of Hispanic, Latino, or Spanish origin?”) and another assessing the respondent’s self-perceived racial categorization(s) (“Please indicate what race(s) you consider yourself to be”) (see Appendix C for a full list of possible responses). From these, I constructed five dummy variables: “non-Hispanic white”, “non-white Hispanic”, “non-white black”, “non-white Asian”, and “other race” (the “other race” category included “don’t know” and “prefer not to say”). I specified “non-Hispanic white” as the referent category for all models.

Political orientation. To measure political orientation, I asked respondents the following question: “Generally speaking, do you usually think of yourself as politically liberal, conservative, moderate, or something else?” Possible responses included “extremely liberal”, “liberal”, “slightly liberal”, “middle of the road”, “slightly conservative”, “conservative”, “extremely conservative”, “other political views”, “don’t know”, and “prefer not to say”. The possible responses were then treated as dummy variables, with categories for liberal orientation (“extremely liberal”, “liberal”, and “slightly liberal”), moderate orientation (“middle of the road”), conservative orientation (“slightly conservative”, “conservative”, and “extremely conservative”), other political orientation (“other political views”), and orientation: DK/PNS (don’t know” and “prefer not to say”). I specified liberal orientation as the referent category.

Citizenship status. Citizenship status was derived from conditional responses to the following questions: “Are you a citizen of the United States?” (“yes”, “no”, and “prefer not to say”), and if “yes” then “Were you born a United States citizen or are you a naturalized U.S. citizen?” (“born a U.S. citizen”, “naturalized U.S. citizen”, and “prefer not to say”). These responses were then transformed into the following dummy variables: native born, foreign born, non-citizen, and citizenship: PNS. Native born was treated as the referent category.

Volunteerism. Respondents were shown the following question to measure volunteerism: “How often do you volunteer for local clubs or social services?” Possible responses included “never”, “seldom”, “at least once a month”, “at least once a week”, “daily”, and “prefer not to say”. I treated this measure as a continuous variable and excluded those who answered “prefer not to say” from the analysis.

Dispositional optimism. To capture dispositional optimism, respondents were asked “Overall, I expect more good things to happen to me than bad” on an 11-point scale. This item ranged from 0 (*strongly disagree*) to 5 (*neutral*) to 10 (*strongly agree*), with a “don’t know” option at the end of the scale. Those who answered “don’t know” were treated as missing.

Social desirability scale. To control for issues of social desirability, I used a short-form version of the Marlowe-Crowne Social Desirability Scale (see Strahan and Gerbasi 1972) in which subjects responded to ten different true-false questions concerned with socially desirable outcomes (of the ten items, five were keyed true and five false), such as “I’m always willing to admit when I make a mistake” and “There have been occasions when I took advantage of someone.” Responses to the ten items were summed to create a social desirability scale that ranged from 0 to 10, where larger values indicated greater positive misrepresentations of self (see Appendix C for a full list of the items used).

Total time. The time it took respondent's to complete the study was measured in minutes, natural logged.

Screeners. Three items were used to assess a respondent's ability to comprehend and follow directions. Immediately after reading the cover sheet, respondents were shown two true-false questions about the cover sheet's content. Screener A in the 'car repair' scenario asked "True or False: The scenario is about paying an auto mechanic a large sum of money to repair your car's engine", while screener B in the 'group project' scenario asked "True or False: The auto mechanic could charge you for fraudulent and intentionally deceptive services or for low quality services at an exaggerated price" (see Appendix C for examples of the 'group project' screener A and B questions). A final screener/attention question was asked toward the end of each study in which respondents were shown a question seemingly about their favorite color (see Appendix C). After a brief paragraph, respondents were told not to answer their favorite color but to type the following into a text box instead: "Instructions processed." Answers to this question (coded 1 for answering correctly, 0 for answering incorrectly) were used for the screener C variable.

Attentiveness. Subjects were asked to report their personal level of attentiveness after assessing the 10 vignettes. Respondents were asked "Please tell us how attentive you were in reading and providing answers to the 10 hypothetical situations?" Possible response categories consisted of "not attentive", "somewhat attentive", "attentive", "very attentive", "extremely attentive", "don't know", and "prefer not to say". This item was treated as a continuous variable ranging from 1 to 5 with those who answered "don't know" and "prefer not to say" as missing.

Vignette realism. To assess whether respondents perceived the vignettes as realistic, they were shown the following question: “Do you agree with the following statement: The situations described in the experiment are likely to happen in the real world”, with “yes”, “no”, “don’t know”, and “prefer not to say” as possible answers. Each of these categories were coded as dummy variables with “no” designated as the referent category. “Don’t know” and “prefer not so say” were combined to form a single dummy variable.

Scenario ability. One item was used to assess whether respondents had experience with the situation outlined in the vignette experiment. This item was phrased as follows: “To what degree do you agree with the following statement: I can judge the quality of car repairs if I can take a close look at them”. This item ranged from 0 (*strongly disagree*) to 5 (*neutral*) to 10 (*strongly agree*), with a “don’t know” option at the end of the scale. Those who answered “don’t know” were treated as missing.

Scenario experience. To determine if respondents had real-world experiences with the hypothetical situation outlined in the vignettes and whether these experiences were satisfactory or unsatisfactory, subjects were shown the following question: “Have you paid an auto mechanic to service or repair a car before?” with “yes”, “no”, and “don’t know” as possible answers. If respondents answered “yes” to this question, then they were shown the following: “Were you ever dissatisfied with the experience?” with “yes, I have been dissatisfied”, “no, I have always been satisfied”, “no opinion”, and “prefer not to say” (see Appendix C for the questions used in the ‘group project’ scenario). These two questions were then decomposed to form four dummy variables—no experience, satisfactory experience, dissatisfactory experience, and experience: DK/PNS. “No experience” was treated as the referent category, while “don’t know” answers from the first question and “no opinion” or “prefer not to say” answers from the second question were collapsed into “experience: DK/PNS”.

Geographic location. I also measured geographic location with responses to the following question: “In what U.S. state or territory do you currently reside?” These items included all 50 U.S. states as well as American Samoa, District of Columbia, Guam, Northern Marianas Islands, Puerto Rico, and the Virgin Islands. Although not shown, these items were investigated as a higher-level clustering unit in which vignettes were embedded within individuals and individuals were embedded within states-territories (i.e., states-territories, individuals, vignettes). In other words, three-level mixed effects models were estimated where state-territories were level 3, individuals were level 2, and vignettes were level 1. The random-intercepts for states-territories failed to reach statistical significance. As a result, these terms were excluded from all models in studies 1a and 1b.

Table 5.B.1. Descriptive Statistics for Individual-Level Variables, Studies 1a and 1b

	Study 1a: Car Repair Scenario				Study 1b: Group Project Scenario			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Never married (ref.)	0.59	--	0	1	0.54	--	0	1
Married	0.30	--	0	1	0.34	--	0	1
Separated	0.01	--	0	1	0.02	--	0	1
Divorced	0.08	--	0	1	0.08	--	0	1
Widowed	0.01	--	0	1	0.01	--	0	1
Marital status: PNS	0.01	--	0	1	0.01	--	0	1
No cohabitation (ref.)	0.46	--	0	1	0.44	--	0	1
Yes, currently cohabiting	0.22	--	0	1	0.20	--	0	1
Yes, prior cohabitation	0.30	--	0	1	0.35	--	0	1
Cohabitation: PNS	0.02	--	0	1	0.01	--	0	1
Catholic (ref.)	0.12	--	0	1	0.13	--	0	1
Baptist	0.07	--	0	1	0.06	--	0	1
Buddhist	0.02	--	0	1	0.02	--	0	1
Jewish	0.03	--	0	1	0.02	--	0	1
Latter Day Saint	0.01	--	0	1	0.01	--	0	1
Lutheran	0.03	--	0	1	0.02	--	0	1
Methodist	0.02	--	0	1	0.03	--	0	1
Presbyterian	0.02	--	0	1	0.01	--	0	1

Christian, non-denom.	0.08	--	0	1	0.11	--	0	1
No religion	0.33	--	0	1	0.25	--	0	1
No denom. identification	0.15	--	0	1	0.17	--	0	1
Other religious denom.	0.10	--	0	1	0.15	--	0	1
Denomination: DK	0.02	--	0	1	0.02	--	0	1
Religious services	4.16	1.18	1	5	4.07	1.18	1	5
Evangelical: no (ref.)	0.83	--	0	1	0.79	--	0	1
Evangelical: yes	0.10	--	0	1	0.11	--	0	1
Evangelical: DK/PNS	0.07	--	0	1	0.10	--	0	1
Income: greater than $75,000 (ref.)	0.21	--	0	1	0.22	--	0	1
Income: less than $24,999	0.24	--	0	1	0.25	--	0	1
Income: $25,000-$49,999	0.32	--	0	1	0.27	--	0	1
Income: $50,000-$74,999	0.19	--	0	1	0.19	--	0	1
Income: DK	0.01	--	0	1	0.02	--	0	1
Income: PNS	0.03	--	0	1	0.05	--	0	1
Degree: master's or greater (ref.)	0.10	--	0	1	0.14	--	0	1
Degree: none	0.01	--	0	1	0.01	--	0	1
Degree: GED or alternative	0.05	--	0	1	0.04	--	0	1
Degree: high school diploma	0.32	--	0	1	0.29	--	0	1
Degree: associate's	0.14	--	0	1	0.14	--	0	1
Degree: bachelor's	0.37	--	0	1	0.37	--	0	1
Degree: DK/PNS	0.01	--	0	1	0.01	--	0	1
Non-Hispanic white (ref.)	0.75	--	0	1	0.72	--	0	1
Non-white Hispanic	0.01	--	0	1	0.02	--	0	1
Non-white black	0.05	--	0	1	0.07	--	0	1
Non-white Asian	0.05	--	0	1	0.04	--	0	1
Other race	0.14	--	0	1	0.15	--	0	1
Liberal orientation (ref.)	0.53	--	0	1	0.50	--	0	1
Conservative orientation	0.25	--	0	1	0.23	--	0	1
Moderate orientation	0.17	--	0	1	0.19	--	0	1
Other political orientation	0.01	--	0	1	0.02	--	0	1
Orientation: DK/PNS	0.04	--	0	1	0.06	--	0	1
Native born (ref.)	0.93	--	0	1	0.94	--	0	1
Foreign born, naturalized	0.05	--	0	1	0.03	--	0	1
Non-citizen	0.01	--	0	1	0.02	--	0	1
Citizenship: PNS	0.01	--	0	1	0.01	--	0	1
Volunteerism	1.92	0.96	1	5	2.00	0.99	1	5
Dispositional optimism	6.83	2.51	0	10	6.86	2.56	0	10
Social desirability	4.58	2.25	0	10	4.48	2.12	0	10
ln(Total time)	2.90	0.36	1.59	4.12	2.95	0.40	1.39	5.47
Screener A	0.96	--	0	1	0.95	--	0	1
Screener B	0.98	--	0	1	0.94	--	0	1
Screener C	0.95	--	0	1	0.87	--	0	1

Attentiveness	4.43	.69	1	5	4.30	0.71	2	5
Vignette realism: no (ref.)	0.04	--	0	1	0.03	--	0	1
Vignette realism: yes	0.90	--	0	1	0.91	--	0	1
Vignette realism: DK/PNS	0.06	--	0	1	0.06	--	0	1
Scenario ability	3.95	2.97	0	10	7.97	1.55	0	10
No experience (ref)	0.13	--	0	1	0.07	--	0	1
Satisfactory experience	0.31	--	0	1	0.19	--	0	1
Dissatisfactory experience	0.53	--	0	1	0.69	--	0	1
Experience: DK/PNS	0.03	--	0	1	0.05	--	0	1

Table 5.B.2. Two-Level Mixed Effects Models of Relational Trust with Random Intercepts and Fixed Slopes, Individual- and Vignette-Level Variables for Studies 1a and 1b

	Study 1a		Study 1b	
	b	s.e.	b	s.e.
Individual-level variables				
General social trust scale	0.07**	0.03	0.08***	0.02
Particular social trust scale	0.09**	0.03	0.11***	0.03
Political trust scale	0.01	0.02	0.02	0.02
Egoistic preferences (ref.)				
Social preferences	0.25**	0.07	0.18**	0.07
Unclassified preferences	-0.01	0.14	0.13	0.14
Risk aversion	-0.002	0.01	-0.004	0.01
Inequality aversion	0.001	0.01	0.002	0.01
Betrayal aversion	-0.03*	0.01	-0.02†	0.01
Lend possessions	0.04	0.04	0.01	0.04
Lend money	0.05	0.04	-0.003	0.03
Door unlocked	-0.01	0.03	-0.01	0.02
Age	-0.005	0.003	-0.002	0.004
Male	0.18*	0.07	0.03	0.06
Never married (ref.)				
Married	0.11	0.09	-0.02	0.08
Separated	-0.29	0.38	-0.01	0.24
Divorced	0.16	0.13	0.26*	0.13
Widowed	0.04	0.46	-0.29	0.28
Marital status: PNS	0.32	0.38	-0.20	0.37
No cohabitation (ref.)				
Yes, currently cohabiting	-0.11	0.08	-0.03	0.08
Yes, prior cohabitation	-0.10	0.08	0.11	0.07
Cohabitation: PNS	-0.38	0.32	-0.27	0.35
Catholic (ref.)				
Baptist	-0.36*	0.17	0.10	0.15
Buddhist	-0.53*	0.23	0.45†	0.25
Jewish	-0.22	0.21	0.04	0.20
Latter Day Saint	0.30	0.27	0.21	0.32
Lutheran	-0.01	0.21	-0.02	0.20
Methodist	-0.21	0.24	0.08	0.18
Presbyterian	-0.23	0.22	0.44	0.32
Christian, non-denom.	-0.07	0.15	0.25*	0.13
No religion	-0.06	0.12	0.24*	0.10
No denom. identification	-0.07	0.13	0.28**	0.11
Other religious denom.	-0.15	0.14	0.05	0.11
Denomination: DK	missing data		-0.18	0.21
Religious services	0.04	0.04	0.07*	0.03
Evangelical: no (ref.)				
Evangelical: yes	-0.06	0.13	0.22*	0.11
Evangelical: DK/PNS	0.07	0.14	-0.02	0.11
Income: greater than $75,000 (ref.)				
Income: less than $24,999	-0.16	0.10	-0.15†	0.09
Income: $25,000-$49,999	-0.14	0.09	-0.002	0.08
Income: $50,000-$74,999	-0.05	0.10	-0.08	0.09

Income: DK	-0.37	0.39	0.14	0.24
Income: PNS	0.19	0.20	0.02	0.15
Degree: master's or greater (ref.)				
Degree: none	-0.21	0.37	-0.05	0.26
Degree: GED or alternative	0.06	0.19	0.29†	0.17
Degree: high school diploma	0.06	0.12	0.16	0.10
Degree: associate's	-0.02	0.14	-0.03	0.11
Degree: bachelor's	-0.07	0.12	0.06	0.09
Degree: DK/PNS	0.03	0.61	-0.14	0.48
Non-Hispanic white (ref.)				
Non-white Hispanic	0.14	0.33	0.04	0.24
Non-white black	0.12	0.16	0.12	0.13
Non-white Asian	-0.001	0.15	-0.03	0.14
Other race	-0.08	0.10	-0.08	0.08
Liberal orientation (ref.)				
Conservative orientation	-0.05	0.09	-0.06	0.09
Moderate orientation	-0.11	0.09	-0.01	0.08
Other political orientation	0.19	0.29	0.28	0.22
Orientation: DK/PNS	0.01	0.19	-0.22	0.14
Native born (ref.)				
Foreign born, naturalized	0.14	0.16	0.42*	0.17
Non-citizen	-0.40	0.29	0.35	0.27
Citizenship: PNS	-0.03	0.48	-0.47	0.43
Volunteerism	-0.09*	0.04	0.02	0.03
Dispositional optimism	0.002	0.02	-0.02	0.01
Social desirability	-0.01	0.02	-0.01	0.02
ln(Total time)	0.24*	0.10	0.27***	0.08
Screener A	-0.37*	0.16	0.46**	0.14
Screener B	-0.11	0.28	0.27*	0.12
Screener C	0.19	0.16	-0.03	0.09
Attentiveness	0.05	0.05	0.09*	0.04
Vignette realism: no (ref.)				
Vignette realism: yes	-0.11	0.15	0.06	0.17
Vignette realism: DK/PNS	-0.50*	0.20	-0.22	0.21
Scenario ability	0.02	0.01	0.05**	0.02
No experience (ref)				
Satisfactory experience	-0.02	0.11	0.33*	0.14
Dissatisfactory experience	-0.12	0.11	0.20	0.12
Experience: DK/PNS	0.31	0.22	0.44*	0.18
Constant	3.59***	0.57	4.76	0.32
var(u_{0j})	0.64***	0.04	0.60***	0.04
var(e_{ij})	2.91***	0.04	2.10***	0.03
Observations	10256		10755	
Individuals	1029		1078	
Vignette-level variables	Yes		Yes	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed test)

CHAPTER 5: APPENDIX C

Studies 2a and 2b

In this appendix—like in Appendix B—I explore a number of additional individual-level control variables. I outline these control variables below (see also Appendix C) as well as explore their relative impacts on relational trust, especially in relation to the three measures of social trust (general social trust, particular social trust, and political trust).

Additional Individual-Level Control Variables

Marital status. To assess marital status, I asked respondents the following question: "What is your current marital status?" Possible answers included "never married", "married", "separated because of marital problems", "divorced", "widowed", and "prefer not to say". Because both samples consisted of undergraduate students, neither "separated" nor "widowed" marital statuses were observed. The remaining observed categories were coded as dummy variables with "never married" as the referent category.

Cohabitation status. For cohabitation status, I asked subjects to respond to the following question: "Have you ever lived with a partner when you were not married?" Possible answers included "Yes, I am currently living with a partner", "Yes, I have lived with a partner in the past", "no", and "prefer not to say". Each of these categories were coded as dummy variables with "no" as the referent category.

Religious denomination. I measured religious denomination with responses to the following: "With what religious group, if any, do you most closely identify?" Possible answers included over forty-four religious denominations, including Adventist, African Methodist, Holiness, and Jewish (for a full list of denominations, see Appendix C). I then created the following categories based on observed frequencies: Baptist, Buddhist, Catholic, Jewish, Latter

Day Saints, Lutheran, Methodist, Presbyterian, Christian (non-denominational), no religion (e.g., Agnostic, Atheist, etc.), no denominational identification, other religious denomination, and don't know. Each of these categories were coded as dummy variables with "Catholic" as the referent category.

Religious services. To measure religious behavior, I asked respondents "How often do you attend religious services?", with possible responses including "more than once a week", "once a week", "once or twice a month", "a few times a year", "never", "don't know", and "prefer not to say". This variable was treated as continuous; those who answered "don't know" and "prefer not to say" were excluded from the analysis.

Evangelical identity. For those who identify as evangelical Christians, I asked "Would you describe yourself as an evangelical Christian?" Possible responses were "yes", "no", "don't know", and "prefer not to say". Each of these categories were coded as dummy variables ("don't know" and "prefer not to say" were collapsed into one dummy variable) with "no" as the referent category.

Income. A respondent's income was measured using answers to the following question: "What is your best estimate of your household income last year? Consider income from all sources before taxes." Respondents were shown twenty-one possible categories, including "don't know" and "prefer not to say" (see Appendix C for the income categories). The remaining nineteen categories were collapsed into the following ranges: "less than $24,999", "between $25,000 and $49,999", "between $50,000 and $74,999", and "greater than $75,000". These categories where then coded as dummy variables ("don't know" and "prefer not to say" were treated as separate dummy variables); "greater than $75,000" was the referent category.

Educational degree. To control for education, I asked respondents "What is the highest degree that you have received?", with categories for "none", "GED or alternative credential", "high school diploma (regular 12 year program)", "associate/junior college degree (AA, AS)", "bachelor's degree (BA, BS)", "master's degree (MA, MS, MEng, MBA, MPH, Med, MSW, MPA, etc.)", "professional degree (DDS, LLB, JD, MD, OD, DVM, or other advanced professional degree", "doctorate (PhD, EdD)", "don't know", and "prefer not to say". Each of these categories were treated as dummy variables ("don't know" and "prefer not to say" responses were treated as one variable), with degrees greater than associate's treated as referent categories.

Race and ethnicity. A respondent's race and ethnicity were measured using two questions, one assessing the respondent's Hispanic and Latino/a origins ("Are you of Hispanic, Latino, or Spanish origin?") and another assessing the respondent's self-perceived racial categorization(s) ("Please indicate what race(s) you consider yourself to be") (see Appendix C for a full list of possible responses). From these, I constructed five dummy variables: "non-Hispanic white", "non-white Hispanic", "non-white black", "non-white Asian", and "other race" (the "other race" category included "don't know" and "prefer not to say"). I specified "non-Hispanic white" as the referent category for all models.

Political orientation. To measure political orientation, I asked respondents the following question: "Generally speaking, do you usually think of yourself as politically liberal, conservative, moderate, or something else?" Possible responses included "extremely liberal", "liberal", "slightly liberal", "middle of the road", "slightly conservative", "conservative", "extremely conservative", "other political views", "don't know", and "prefer not to say". The possible responses were then treated as dummy variables, with categories for liberal orientation ("extremely liberal", "liberal", and "slightly liberal"), moderate orientation ("middle of the road”), conservative orientation (“slightly conservative”, “conservative”, and “extremely conservative”), other political orientation (“other political views”), and orientation: DK/PNS (don’t know” and “prefer not to say”). I specified liberal orientation as the referent category.

Citizenship status. Citizenship status was derived from conditional responses to the following questions: “Are you a citizen of the United States?” (“yes”, “no”, and “prefer not to say”), and if “yes” then “Were you born a United States citizen or are you a naturalized U.S. citizen?” (“born a U.S. citizen”, “naturalized U.S. citizen”, and “prefer not to say”). These responses were then transformed into the following dummy variables: native born, foreign born, non-citizen, and citizenship: PNS. Native born was treated as the referent category.

Volunteerism. Respondents were shown the following question to measure volunteerism: “How often do you volunteer for local clubs or social services?” Possible responses included “never”, “seldom”, “at least once a month”, “at least once a week”, “daily”, and “prefer not to say”. I treated this measure as a continuous variable and excluded those who answered “prefer not to say” from the analysis.

Dispositional optimism. To capture dispositional optimism, respondents were asked “Overall, I expect more good things to happen to me than bad” on an 11-point scale. This item ranged from 0 (*strongly disagree*) to 5 (*neutral*) to 10 (*strongly agree*), with a “don’t know” option at the end of the scale. Those who answered “don’t know” were treated as missing.

Social desirability scale. To control for issues of social desirability, I used a short-form version of the Marlowe-Crowne Social Desirability Scale (see Strahan and Gerbasi 1972) in which subjects responded to ten different true-false questions concerned with socially desirable outcomes (of the ten items, five were keyed true and five false), such as “I’m always willing to admit when I make a mistake” and “There have been occasions when I took advantage of someone." Responses to the ten items were summed to create a social desirability scale that ranged from 0 to 10, where larger values indicated greater positive misrepresentations of self (see Appendix C for a full list of the items used).

Total time. The time it took respondent's to complete the study was measured in minutes, natural logged.

Screeners. Three items were used to assess a respondent's ability to comprehend and follow directions. Immediately after reading the cover sheet, respondents were shown two true-false questions about the cover sheet's content. Screener A in the 'car repair' scenario asked "<u>True or False</u>: The scenario is about paying an auto mechanic a large sum of money to repair your car's engine", while screener B in the 'group project' scenario asked "<u>True or False</u>: The auto mechanic could charge you for fraudulent and intentionally deceptive services or for low quality services at an exaggerated price" (see Appendix C for examples of the 'group project' screener A and B questions). A final screener/attention question was asked toward the end of each study in which respondents were shown a question seemingly about their favorite color (see Appendix C). After a brief paragraph, respondents were told not to answer their favorite color but to type the following into a text box instead: "Instructions processed." Answers to this question (coded 1 for answering correctly, 0 for answering incorrectly) were used for the screener C variable.

Attentiveness. Subjects were asked to report their personal level of attentiveness after assessing the 10 vignettes. Respondents were asked "Please tell us how attentive you were in reading and providing answers to the 10 hypothetical situations?" Possible response categories consisted of "not attentive", "somewhat attentive", "attentive", "very attentive", "extremely attentive", "don't know", and "prefer not to say". This item was treated as a continuous variable ranging from 1 to 5 with those who answered “don’t know” and “prefer not to say” as missing.

Vignette realism. To assess whether respondents perceived the vignettes as realistic, they were shown the following question: “Do you agree with the following statement: The situations described in the experiment are likely to happen in the real world”, with “yes”, “no”, “don’t know”, and “prefer not to say” as possible answers. Each of these categories were coded as dummy variables with “no” designated as the referent category. “Don’t know” and “prefer not so say” were combined to form a single dummy variable.

Scenario ability. One item was used to assess whether respondents had experience with the situation outlined in the vignette experiment. This item was phrased as follows: “To what degree do you agree with the following statement: I can judge the quality of car repairs if I can take a close look at them”. This item ranged from 0 (*strongly disagree*) to 5 (*neutral*) to 10 (*strongly agree*), with a “don’t know” option at the end of the scale. Those who answered “don’t know” were treated as missing.

Scenario experience. To determine if respondents had real-world experiences with the hypothetical situation outlined in the vignettes and whether these experiences were satisfactory or unsatisfactory, subjects were shown the following question: “Have you paid an auto mechanic to service or repair a car before?” with “yes”, “no”, and “don’t know” as possible answers. If respondents answered “yes” to this question, then they were shown the following: “Were you ever dissatisfied with the experience?” with “yes, I have been dissatisfied”, “no, I have always been satisfied”, “no opinion”, and “prefer not to say” (see Appendix C for the questions used in the ‘group project’ scenario). These two questions were then decomposed to form four dummy variables—no experience, satisfactory experience, dissatisfactory experience, and experience: DK/PNS. “No experience” was treated as the referent category, while “don’t know” answers from the first question and "no opinion" or "prefer not to say" answers from the second question were collapsed into "experience: DK/PNS".

Geographic location. I also measured geographic location with responses to the following question: "In what U.S. state or territory do you currently reside?" These items included all 50 U.S. states as well as American Samoa, District of Columbia, Guam, Northern Marianas Islands, Puerto Rico, and the Virgin Islands. Although not shown, these items were investigated as a higher-level clustering unit in which vignettes were embedded within individuals and individuals were embedded within states-territories (i.e., states-territories, individuals, vignettes). In other words, three-level mixed effects models were estimated where state-territories were level 3, individuals were level 2, and vignettes were level 1. The random-intercepts for states-territories failed to reach statistical significance. As a result, these terms were excluded from all models in studies 2a and 2b.

Table 5.C.1. Descriptive Statistics for Individual-Level Variables, Studies 2a and 2b

	Study 2a: Car Repair Scenario				Study 2b: Group Project Scenario			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Never married (ref.)	0.95	--	0	1	0.96	--	0	1
Married	0.03	--	0	1	0.02	--	0	1
Separated	missing data				missing data			
Divorced	0.01	--	0	1	0.01	--	0	1
Widowed	missing data				missing data			
Marital status: PNS	0.01	--	0	1	0.01	--	0	1
No cohabitation (ref.)	0.83	--	0	1	0.83	--	0	1
Yes, currently cohabiting	0.09	--	0	1	0.07	--	0	1
Yes, prior cohabitation	0.06	--	0	1	0.08	--	0	1
Cohabitation: PNS	0.02	--	0	1	0.02	--	0	1
Catholic (ref.)	0.11	--	0	1	0.11	--	0	1
Baptist	0.02	--	0	1	0.01	--	0	1
Buddhist	0.04	--	0	1	0.05	--	0	1
Jewish	0.02	--	0	1	0.01	--	0	1
Latter Day Saint	0.01	--	0	1	0.01	--	0	1
Lutheran	0.02	--	0	1	0.02	--	0	1
Methodist	0.01	--	0	1	0.01	--	0	1

Presbyterian	0.02	--	0	1	0.03	--	0	1
Christian, non-denom.	0.11	--	0	1	0.11	--	0	1
No religion	0.28	--	0	1	0.31	--	0	1
No denom. identification	0.21	--	0	1	0.18	--	0	1
Other religious denom.	0.11	--	0	1	0.10	--	0	1
Denomination: DK	0.04	--	0	1	0.05	--	0	1
Religious services	3.92	1.26	1	5	4.02	1.21	1	5
Evangelical: no (ref.)	0.75	--	0	1	0.79	--	0	1
Evangelical: yes	0.11	--	0	1	0.08	--	0	1
Evangelical: DK/PNS	0.14	--	0	1	0.13	--	0	1
Income: greater than $75,000 (ref.)	0.29	--	0	1	0.26	--	0	1
Income: less than $24,999	0.27	--	0	1	0.29	--	0	1
Income: $25,000-$49,999	0.10	--	0	1	0.11	--	0	1
Income: $50,000-$74,999	0.08	--	0	1	0.08	--	0	1
Income: DK	0.16	--	0	1	0.17	--	0	1
Income: PNS	0.10	--	0	1	0.09	--	0	1
Degree: associate's or greater (ref.)	0.26	--	0	1	0.26	--	0	1
Degree: none	0.02	--	0	1	0.01	--	0	1
Degree: GED or alternative	0.01	--	0	1	0.01	--	0	1
Degree: high school diploma	0.70	--	0	1	0.71	--	0	1
Degree: DK/PNS	0.01	--	0	1	0.01	--	0	1
Non-Hispanic white (ref.)	0.50	--	0	1	0.46	--	0	1
Non-white Hispanic	0.03	--	0	1	0.03	--	0	1
Non-white black	0.01	--	0	1	0.01	--	0	1
Non-white Asian	0.25	--	0	1	0.28	--	0	1
Other race	0.21	--	0	1	0.22	--	0	1
Liberal orientation (ref.)	0.54	--	0	1	0.53	--	0	1
Conservative orientation	0.16	--	0	1	0.14	--	0	1
Moderate orientation	0.14	--	0	1	0.15	--	0	1
Other political orientation	0.02	--	0	1	0.02	--	0	1
Orientation: DK/PNS	0.14	--	0	1	0.16	--	0	1
Native born (ref.)	0.79	--	0	1	0.78	--	0	1
Foreign born, naturalized	0.07	--	0	1	0.08	--	0	1
Non-citizen	0.13	--	0	1	0.13	--	0	1
Citizenship: PNS	0.01	--	0	1	0.01	--	0	1
Volunteerism	2.65	1.06	1	5	2.62	1.03	1	5
Dispositional optimism	6.78	2.43	0	10	6.68	2.41	0	10
Social desirability	4.05	2.21	0	10	4.02	2.15	0	10
ln(Total time)	3.04	0.42	1.50	4.71	3.03	0.41	0.53	4.46
Screener A	0.90	--	0	1	0.94	--	0	1
Screener B	0.96	--	0	1	0.93	--	0	1
Screener C	0.63	--	0	1	0.63	--	0	1
Attentiveness	3.48	.85	1	5	3.47	0.83	2	5

Vignette realism: no (ref.)	0.06	--	0	1	0.12	--	0	1
Vignette realism: yes	0.83	--	0	1	0.75	--	0	1
Vignette realism: DK/PNS	0.11	--	0	1	0.13	--	0	1
Scenario ability	3.49	2.92	0	10	7.72	1.64	0	10
No experience (ref)	0.49	--	0	1	0.04	--	0	1
Satisfactory experience	0.21	--	0	1	0.12	--	0	1
Dissatisfactory experience	0.25	--	0	1	0.78	--	0	1
Experience: DK/PNS	0.05	--	0	1	0.06	--	0	1

Table 5.C.2. Two-Level Mixed Effects Models of Relational Trust with Random Intercepts and Fixed Slopes, Individual- and Vignette-Level Variables for Studies 2a and 2b

	Study 2a		Study 2b	
	b	s.e.	b	s.e.
Individual-level variables				
General social trust scale	0.10*	0.04	0.18***	0.04
Particular social trust	0.11*	0.05	0.20***	0.05
Political trust scale	0.06*	0.03	0.03	0.03
Egoistic preferences (ref.)				
Social preferences	0.33**	0.11	0.09	0.11
Unclassified preferences	0.05	0.19	-0.02	0.18
Risk aversion	0.06**	0.02	0.05*	0.02
Inequality aversion	0.04*	0.02	0.04*	0.02
Betrayal aversion	-0.02	0.02	-0.07***	0.02
Lend possessions	0.01	0.06	0.09	0.06
Lend money	0.02	0.05	-0.05	0.06
Door unlocked	-0.003	0.04	-0.01	0.04
Age	-0.01	0.01	0.002	0.01
Male	-0.04	0.10	0.12	0.09
Never married (ref.)				
Married	0.29	0.30	0.02	0.30
Separated	missing data		missing data	
Divorced	-2.10***	0.57	0.82†	0.43
Widowed	missing data		missing data	
Marital status: PNS	-0.85	1.10	0.66	1.09
No cohabitation (ref.)				
Yes, currently cohabiting	0.06	0.16	-0.17	0.17
Yes, prior cohabitation	-0.23	0.20	-0.29†	0.17
Cohabitation: PNS	0.62	0.66	-0.92*	0.39
Catholic (ref.)				
Baptist	0.25	0.35	-0.05	0.41
Buddhist	-0.12	0.28	-0.01	0.25
Jewish	-0.03	0.35	-0.20	0.43
Latter Day Saint	0.65	0.56	-0.52	0.61
Lutheran	0.11	0.36	0.41	0.36
Methodist	0.31	0.43	0.02	0.51
Presbyterian	0.12	0.32	0.28	0.29
Christian, non-denom.	0.07	0.20	0.20	0.20
No religion	0.24	0.18	0.02	0.17
No denom. identification	0.18	0.18	-0.04	0.18
Other religious denom.	0.34†	0.20	-0.02	0.21
Denomination: DK	0.09	0.29	0.19	0.25
Religious services	0.003	0.06	0.05	0.06
Evangelical: no (ref.)				
Evangelical: yes	-0.23	0.18	-0.07	0.21
Evangelical: DK/PNS	-0.18	0.16	-0.01	0.16
Income: greater than $75,000 (ref.)				
Income: less than $24,999	0.08	0.12	-0.11	0.12
Income: $25,000-$49,999	-0.02	0.16	0.02	0.17
Income: $50,000-$74,999	0.11	0.18	-0.07	0.16

Income: DK	0.08	0.14	0.08	0.14
Income: PNS	0.07	0.19	-0.04	0.19
Degree: associate's or greater (ref.)				
Degree: none	-0.44	0.37	-0.60†	0.35
Degree: GED or alternative	0.89	0.78	0.50	0.39
Degree: high school diploma	-0.20	0.12	0.17	0.11
Degree: DK/PNS	0.31	0.52	1.02*	0.48
Non-Hispanic white (ref.)				
Non-white Hispanic	0.07	0.25	-0.07	0.26
Non-white black	0.24	0.46	0.21	0.60
Non-white Asian	0.05	0.14	-0.01	0.13
Other race	0.10	0.12	-0.11	0.12
Liberal orientation (ref.)				
Conservative orientation	-0.19	0.14	-0.07	0.15
Moderate orientation	0.05	0.13	0.17	0.13
Other political orientation	-0.51	0.32	-0.5	0.44
Orientation: DK/PNS	-0.27	0.16	0.16	0.15
Native born (ref.)				
Foreign born, naturalized	-0.14	0.19	0.04	0.18
Non-citizen	0.08	0.17	0.08	0.17
Citizenship: PNS	0.09	0.48	-0.50	0.59
Volunteerism	0.0005	0.04	-0.07	0.04
Dispositional optimism	-0.01	0.02	0.01	0.02
Social desirability	-0.02	0.03	-0.0002	0.02
ln(Total time)	0.24*	0.12	0.36**	0.12
Screener A	0.17	0.16	0.25	0.17
Screener B	-0.20	0.23	0.77***	0.18
Screener C	0.10	0.10	0.04	0.10
Attentiveness	0.02	0.06	0.10	0.06
Vignette realism: no (ref.)				
Vignette realism: yes	0.32†	0.19	0.03	0.14
Vignette realism: DK/PNS	0.17	0.24	-0.07	0.19
Scenario ability	-0.01	0.02	0.05†	0.03
No experience (ref)				
Satisfactory experience	0.05	0.12	0.70*	0.28
Dissatisfactory experience	-0.36	0.22	0.57*	0.25
Experience: DK/PNS	-0.36	0.22	0.91**	0.32
Constant	2.08**	0.74	-0.10	0.73
var(u_{0j})	0.83***	0.06	0.72***	0.05
var(e_{ij})	2.58***	0.05	1.93***	0.04
Observations	6070		5483	
Individuals	613		553	
Vignette-level variables	Yes		Yes	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed test)

CHAPTER 6: ON THE ORIGINS OF RELATIONAL TRUST—PERCEIVED MOTIVATIONS, CAUSAL ATTRIBUTIONS, AND OTHER-PRAISING EMOTIONS

"It's a vice to trust all, and equally a vice to trust none."

- Seneca in *Moral Letters to Lucilius*

"Gratitude is the sign of noble souls."

- Aesop

Social scientists and laypeople all seem to be talking about trust, and about how it is central to democratic political systems, civil society, and economic development, with some scholars even suggesting that "virtually every commercial transaction has within itself an element of trust (Arrow 1972: 357)". Unlike other abstract sociological concepts, such as *habitus* or *isomorphism*, trust is a street-level epistemology embedded in the lexicon and workaday affairs of individuals (Hardin 1993). That is, we are cognizant of and appreciate the importance of trust whenever we encounter the uncertainties and vagaries of social life, from consulting lawyers and doctors, to hiring financial advisers and babysitters, to endorsing friends and family. In these situations, we are acutely aware of how deceit and betrayal are possible outcomes, and when trust emerges to quell these uncertainties, collective endeavors prevail—the backbone of strong communities (Putnam 2000); but when trust fails to take root, suspicion and individual survival runs rampant—the bedrock of "backward" societies (Banfield 1958).

The notion that trust facilitates social and economic exchange is a longstanding assumption in the social sciences (Almond and Verba 1963; Blau 1964; Coleman 1990; Fukuyama 1995; North 1990; Putnam 1993), but less well understood are the forms of trustworthiness necessary to produce trust, with proposed answers conspicuously dependent on one's discipline. Political scientists and economists, for instance, tend to espouse the role of social constraints or the necessity of shared interests in securing trust, while sociologists, philosophers, and administrative scientists traditionally underscore perceived goodwill or virtuous dispositions in the creation of trust. In the social constraint view, social devices external to an exchange relationship that align the interests of two actors, such as binding contracts and legal authorities, are sufficient to produce trust (Dasgupta 1988; Farrell 2009; Grief 2006; North 1990), while prior exchange—or perceived interest in future exchange—is necessary for trust to develop in the encapsulated interest view (Cook, Hardin, and Levi 2005; Hardin 2002). The goodwill view, on the other hand, centers on perceived regard for and concern about the interests of one's exchange partner in the creation of trust (Baier 1986; Jones 1996; Mayer et al. 1995; Molm et al. 2007), while perceived care for and concern about everyone's interests is at the heart of the virtuous disposition view (Potter 2002).

Despite the prevalence of these competing ontological views of trustworthiness in the literature, their relative impacts on trust have not been rigorously tested.[37] In the present chapter, I dissect the relationship between trustworthiness and trust by comparing and contrasting classic

[37] Take the sociological and political science literature on trust, which is largely concerned with social forces indirectly related to commitment—uncertainty, forms of exchange, social embeddedness, and network structure (Buskens 2002; Granovetter 1985; Kollock 1994; Molm et al. 2007; Paxton 2007)—or with the social and political correlates of general social trust and particular social trust (Delhey et al. 2011; Delhey and Newton 2005; Newton and Zmerli 2011; Putnam 2000; Robbins 2012; Rydgren et al. 2013). While this literature has produced important insights, the scholarship up to this point either (a) explores microfoundations indirectly related to trust (Cook et al. 2005; Fehr 2009; Miller and Mitamura 2003; Nannestad 2008), (b) deemphasizes trustworthiness and commitment in favor of classic covariates of sociological interest (e.g., race, religion, social ties, democracy, etc.) (DiPrete et al. 2011; Paxton 2002; Welch et al. 2007; Wilkes 2011), or (c) assumes, rather than estimates, certain types of unobserved commitment with different forms of observed exchange (Kuwabara 2011; Molm et al. 2012; Lawler et al. 2008). Rather than explore if and how different types of commitment impact trust, the other social science disciplines have chosen to assume—or entirely ignore—commitment in favor of investigating the cognitive (Murray et al. 2011), emotional (Dunn and Schweitzer 2005; Lount 2010; Oosterhof and Todorov 2009), biological (Boksem et al. in press; Fehr 2009; Krueger et al. 2007), or behavioral (Berg et al. 1995; Ermisch et al. 2009) bases of trust, where, because of disciplinary trends and a path-dependent focus on organizational efficiency, in-depth explorations of the relationship between commitment and trust are most common in administrative science (Colquitt et al. 2007; Kramer 1999; Mayer and Davis 1999; Mayer et al. 1995; McKnight et al. 2002). The outstanding empirical issue in the organizational sciences, however, concerns the lack of controlled experiments adjudicating between perceived motivations and trust. But, some psychologists (Klapwijk and Van Lange 2009; Righetti and Finkenauer 2011) and behavioral economists (Fehrler and Przepiorka 2013; Gambetta and Przepiorka 2014) have begun to explore this issue in greater detail.

forms of commitment found in the social sciences. That is, instead of assuming the concept of trust as theoretically given, I explore not just *whether* but *how* a trustee is capable and motivated, and adjudicate between the social constraint views, encapsulated interest views, goodwill views, and virtuous disposition views of trust and trustworthiness.

In an effort to synthesize the literature, I argue that these four competing perspectives differ along two analytical dimensions concerned with how motivations are perceived: first, *instrumental* (interest in the benefits received or costs avoided from an exchange partner or exchange relationship) or *expressive* (regard and respect for an exchange partner's interests); and second, *external* (interest in an exchange partner or exchange relationship comes from outside of the exchange relationship) or *internal* (personal interest in an exchange partner or exchange relationship). Based on these analytical distinctions, I expect all four views of commitment to produce trust, with the magnitude of effects conditional on whether a view emphasizes expressive (versus instrumental) motivations and/or internal (versus external) motivations. In other words, goodwill and virtuous dispositions (internal and expressive motivations) should yield greater trust than encapsulated interests (internal and instrumental motivation) which, in turn, should produce greater trust than social constraints (external and instrumental motivation).

To account for these differences in magnitude and to further explore the dynamics of commitment and trust, I derive a number of novel hypotheses concerned with the moderating effect of causal attributions and the mediating effect of other-praising emotions. First, I propose that situational *and* dispositional attributions, specifically misattributions, condition the relationship between social constraints and trust (Gilbert and Malone 1995; Jones and Harris 1967; Ross 1977). That is, the positive effect of social constraints on trust is strongest when actors draw external attributions and perceive other's to be extrinsically motivated and weakest when actors draw internal attributions and perceive other's to be intrinsically motivated. Second, I propose that other-praising emotions such as admiration and gratitude (Algoe and Haidt 2009; Haidt 2003), which are positive emotions experienced by witnessing or directly benefiting from the exemplary actions of others, mediate the relationship between commitment and trust, with indirect effects greater for commitments derived from *expressive* motivations *internal* to an exchange relationship than for *instrumental* motivations either *internal* to or *external* to an exchange relationship.

The results of four web-based experiments of simulated 'car repair' and 'group project' scenarios yielded strong support for my predictions and produced three key findings. First, I show that all four types of commitment foster trust, but that some forms are stronger than others (goodwill = virtuous dispositions > encapsulated interests > social constraints). Second, I reveal how the relationship between social constraints and trust is moderated by causal attributions: social constraints increase trust for those who gravitate toward external attributions but not for those who tend toward internal attributions, while internal attributions produce greater trust than external attributions even in the presence of social constraints. Interestingly, these effects were robust to different types of social constraints, namely monetary regulations, non-monetary regulations, and binding contracts in both scenarios but not for non-binding contracts in either scenario. Third, and finally, I demonstrate the efficacy of other-praising emotions as causal mechanisms connecting commitment to trust. In particular, the results reveal that gratitude and admiration mediate (almost fully) the effect of goodwill and virtuous dispositions on trust, but only partially so for encapsulated interests and inconsequentially so for social constraints. This research is significant as it dissects an important outstanding issue in the social sciences—what forms of commitment produce trust and how—and furthers our understanding of social cohesion and group solidarity.

Theory

If we lived in a world where everyone was capable and motivated to carry out everyone's interests, trust would be unproblematic. In such a world, everyone would be able to, and equally willing to, provide for whatever we desire: I would trust friends and family, and even people I know nothing about, to cut my hair, provide feedback on a book chapter, fly a plane, remove a cancerous tumor, and offer legal advice, all without a conflict of interests. But we do not live in such a world. Instead, our world is one in which we know, at best, fragments of information about some peoples' capabilities and motivations, something of substance for a very few, and nothing at all for most. Under these circumstances, trust is one potential source of mutually beneficial outcomes: if I only know a fraction of who you are as a person but believe that you care for my interests with respect to a particular matter and are competent enough to carry out my wishes, then I have good reason to trust you and act on said trust by cooperating or exchanging with you. Yet, the ultimate source of trust in this situation is not necessarily my personal predisposition to trust, period, but my assessment of your motivation and competence to fulfill my trust—your trustworthiness.

If trustworthiness begets trust, then what forms of trustworthiness are necessary or sufficient to produce trust? Below I propose a number of novel and pre-existent hypotheses concerning the foundations of trust and trustworthiness. I draw on theories and findings in sociology, political science, economics, social psychology, and philosophy with an eye toward the components of trustworthiness that promote trust as well as the processes that moderate and mediate the relationship between trust and trustworthiness.

Perceived Motivations and Trust

To start, I treat trust as a cognitive-relational concept (Cook, Hardin, and Levi 2005; Farrell 2009; Hardin 2002), broadly defined as a belief about another person's trustworthiness with respect to a particular matter at hand that emerges under conditions of unknown outcomes. In prior chapters I referred to this as "relational trust", primarily to distinguish this form of trust from the supposed *varieties of trust*. For the sake of brevity, "trust" will be used as a substitute for "relational trust" throughout remaining chapter. I define trustworthiness as the capacity *and* motivation of a person to fulfill the goals and desires of another person; where capacity refers to ability and competence, and motivation refers to exertion and commitment. According to my conceptualization, A (the truster) trusts B (the trustee) when A believes that B is capable *and* motiated to perform matter Y (what A wants B to do) under conditions of uncertainty.

Within this equation, scholars of trust are particularly divided over the sources of B's commitment to A, which generally fall along two distinct analytical dimensions: (1) the extent to which B's commitment is either instrumentally or expressively motivated; and (2) the extent to which B's commitment is either externally or internally motivated. Commitments based on instrumental motivations are characterized by an actor's interest in the benefits received or costs avoided from an exchange (Emerson 1972ab). The goods, services, or outcomes of an exchange compel B to commit to A. In this regard, B's motivation is instrumental in the sense that A (and the A-B exchange relationship) is a means to achieve B's ends. In contrast, an actor's regard and respect for an exchange partner's interests characterize commitments based on expressive motivations (Parsons 1951). Here, expressive motivations represent B's genuine care and concern for A's interests as well as B's willingness to invest in the continuation of the A-B exchange relationship. Under such conditions, B's motivation is expressive in the sense that A's interests (and the A-B exchange relationship) constitute B's ends, not the goods, services, or outcomes that the A-B exchange relationship can provide B.

An externally motivated commitment refers to the alignment of actors' interests from incentives exogenous to an exchange relationship (Ingram and Clay 2000; North 1990). Binding contracts, legal regulations, and social norms are all examples of extrinsic motivators that compel B to achieve A's interests: the breach of contract, the force of law, and the promise of collective shaming, respectively, motivate individuals to act on the interests of others. B fulfills his or her obligations to avoid these costs or, in some instances, to obtain benefits; thus, B's interest in A and their exchange relationship (and, conversely, A's interest in B) comes from outside of the A-B exchange relationship. An internally motivated commitment, on the other hand, refers to an actor's personal interest in an exchange partner or exchange relationship (Homans 1950, 1961). In this way, B is motivated to achieve A's interests not because of some exogenously imposed incentive, but because B personally desires goods, services, or other social outcomes A has to offer now or in the future, or because B cares for and is concerned about A's interests. With this type of motivation, actors engage in exchange to achieve their interests or the interests of others. In either case, the motivation to do so is internal to A, B, and the A-B exchage relationship.

My distinctions between *instrumental-expressive* motivations and *external-internal* motivations serve as analytical backdrops to the four major views of trust and trustworthiness in the literature. Theoretically, all four perspectives—social constraints, encapsulated interests, goodwill, and virtuous dispositions—differ along these two dimensions. And each perspective has the potential to affect the development of trust to greater or lesser degrees depending on their dimensionality. Drawing on chapter 3, I detail each of these perspectives below.

Perceived Motivations. The first perspective I review—the social constraints view—

underscores commitment based on instrumental motivations external to an exchange relationship. For scholars in this area, commitment can be realized when the interests of A and B are aligned, and, as a result, any social constraint (or incentive) external to an A-B exchange relationship that motivates B to do Y is sufficient for A to trust B (Dasgupta 1988; Farrell 2009). This "deterrence-based" view of trust includes Hobbesian-style situations where preexisting social constraints external to an A-B exchange relationship motivate B to do Y as well as situations where A or B introduce a social constraint to an exchange relationship (Rousseau et al. 1998). Under these conditions, the costs and benefits associated with social constraints align the interests of both actors and compel the trustee, out of self-interest, to commit to the truster. In other words, commitment based on motivating factors external to the trust relationship is sufficient for B to commit to A and, hence, A to trust B. Logically, from this point of view, trust increases linearly with the costs (or rewards) of incentives exogenous to an exchange relationship. Altogether, the arguments above inform my first working hypothesis: *social constraints external to an A-B exchange relationship that align the interests of A and B increase trust* (hypothesis 7).

The encapsulated interest view of trust, on the other hand, suggests that motivations external to an exchange relationship are insufficient for trust, and that trust only emerges when the interests of A and B are "encapsulated"; that is, when A expects B to do Y because A knows that B has a personal interest in performing Y (Cook, Hardin, and Levi 2005; Hardin 1993, 2001, 2002). These conditions are met when B is interested in an ongoing exchange relationship with A, when A has favorable knowledge of B's trustworthiness because A has had direct personal experience with B, or when B is interested in maintaining their reputation for trustworthiness in a network of exchange relations. In each of these situations, B's interest in being trustworthy is instrumental and comes from inside (i.e., internal to) the A-B exchange relationship. As Thomas Schelling observed:

> "Trust is often achieved simply by the continuity of the relation between parties and the recognition by each that what he might gain by cheating in a given instance is outweighed by the value of the tradition of trust that makes possible a long sequence of future agreement (1960: 134-35)."

Although some scholars within the encapsulated interest literature suggest that social constraints can directly foster trust (Farrell 2009), the common consensus is that social constraints produce trust indirectly either by reducing perceived risk or by promoting social exchange that then increases A's direct knowledge of B's trustworthiness (Cook, Hardin, and Levi 2005). In any regard, proponents of encapsulated interest argue that perceived trustworthiness—at the very least—must be internal to an exchange relationship *and* a consequence of a trustee's instrumental motivations to maintain an exchange relationship with a particular truster (Cook, Hardin, and Levi 2005). Thus: *greater interest on the part of a trustee in maintaining a future exchange relationship with a truster increases trust* (hypothesis 8).

Both the social constraint and encapsulated interest views of trust are based on instrumental motivations and risk reduction: A trusts B when A assumes that the probability of a beneficial exchange with B is high because B is interested in an ongoing exchange relationship with A (encapsulated interests view), or because B is motivated by incentives exogenous to the A-B exchange relationship (social constraints view). An alternative view suggests that trust stems not from instrumental desires and risk assessment but from expressive motivations internal to an exchange relationship, or what some scholars refer to as "goodwill" (Baier 1986; Jones 1996). On the goodwill account of trust, if A believes that B cares for or is concerned about A's interests, then A trusts B. But if A believes that B will perform matter Y to achieve B's interests, then this instrumental motivation—which is the basis of the social constraint and encapsulated interest views—is insufficient for trust. To put it differently, B must treat A as an end-in-themselves with dignity and respect for A to trust B. If B does not treat A as an end-in-themselves, but, instead, treats A as a means-to-an-end achieving their personal interests, then the goodwill view of trust predicts that A will not trust B. A will trust B *if and only if* A believes that B will act in a trustworthy manner toward A, where B's commitment is motivated by goodwill and not simply by encapsulated interests or social constraints.

It is important to note that B's trustworthiness and commitment on the goodwill account is not necessarily a character trait that springs from moral dispositions or a willingness to follow moral norms and codes. Take, for instance, person B who is a convicted child rapist. By all accounts, he or she is not a virtuous or moralistic person, but nonetheless could care for his or her sibling's interests on various matters. Under the goodwill view of trust, sibling A could trust convicted child rapist B with respect to matter Y because of B's goodwill toward A. Actor B's trustworthiness, in other words, lies within the scope of his or her relationship with A no matter how disreputable or amoral B might be. This argument, like the social constraint and encapsulated interest views of trust, is a consequentialist argument—people act to achieve particular outcomes and consequences. But unlike the social contract and encapsulated interest views, which are based on instrumental motivations, B exchanges with A to achieve A's interests in Y because A's interests are among B's interests. While Mayer et al. (1995), Offer (1997), and Molm et al. (2007) refer to the goodwill account of trustworthiness as "benevolence", "regard" or "expressive value", respectively, their conceptualizations nonetheless share a commonality: actor B regards, cares for, or is concerned about actor A's interests (see also Clark and Mills 1979). Thus: *greater care for or concern about a truster's interests on the part of a trustee increases trust* (hypothesis 9).

A final view of perceived motivation defines trustworthiness as a virtue. Recall the goodwill view of trust, which centers on expressive motivations internal to an exchange relationship. This view of trust is explicitly reserved for B's goodwill toward A on matter Y, not B's goodwill toward everyone and all matters. The virtuous disposition view of trust, on the other hand, treats trustworthiness as a character trait that virtuous people possess—it is a disposition to be trustworthy regardless of the exchange relationship. To illustrate, the child rapist might show goodwill toward their sibling and be trustworthy within the scope of their relationship, or, as Potter (2002) states, posses "specific trustworthiness": trustworthiness that is particular to certain relationships. But, generally, we would not describe the child rapist as someone with a disposition to be trustworthy toward everyone, or possess "full trustworthiness" (Potter 2002).

According to this view, trustworthiness is a character trait engrained in a trustee—it is a disposition to answer trust appropriately given an actor's capabilities. Or, as Potter (2002) writes, trustworthiness based on Aristotelian conceptions of virtue where a trustworthy person is "…one who can be counted on, as a matter of the sort of person he or she is, to take care of those things that others entrust to one (p. 16)." Thus, commitment is realized when actor A believes that actor B cares for, or is concerned about, every actor's interests with respect to matter Y; that is, B treats everyone as an end-in-themselves with dignity and respect. This line of argumentation produces the following working hypothesis: *greater care for or concern about everyone's interests on the part of a trustee increases trust* (hypothesis 10).

To summarize, all four competing views of trust and trustworthiness differ with respect to two distinct analytical dimensions: *instrumental-expressive* motivations and *external-internal* motivations. Encapsulated interests and social constraints exemplify instrumental motivations, while goodwill and virtuous dispositions typify expressive motivations. And, according to the second dimension, encapsulated interests, goodwill, and virtuous dispositions characterize internal motivations, while social constraints epitomize external motivations.

In an effort to contribute to the literature, I use these dimensions to organize and compare the amounts of trust produced by each. I propose that (a) perceived expressive motivations internal to an exchange relationship generate the greatest trust, (b) perceived instrumental motivations external to an exchange relationship generate the least trust, and (c) perceived instrumental motivations internal to an exchange relationship yield levels of trust somewhere in-between.[38] Thus: *goodwill and virtuous dispositions yield greater trust than encapsulated interests which, in turn, produce greater trust than social constraints* (hypothesis 11).

Moderating and Mediating Effects: Causal Attributions and Other-Praising Emotions

The second goal of the present chapter is to investigate the conditions under which social constraints produce trust as well as the mechanisms connecting commitment to trust. To that end, I explore several novel moderating and mediating effects. Below I outline these effects in greater detail.

Causal Attributions. Recall the social constraints view of trust: incentives exogenous to an A-B exchange relationship that align the interests of A and B are sufficient to increase A's expectation about B's trustworthiness with respect to matter Y. In this regard, factors internal to A, B, or an A-B exchange relationship increase trust to the same extent as factors external to A, B, and an A-B exchange relationship. While this theoretical model has merit, another tradition

[38] The two dimensions are not necessarily orthogonal: perceived expressive motivations external to an exchange relationship do not exist. Although soft incentives such as collective shaming or ostracism might constitute such a combination, their motivating power lies beyond the A-B exchange relationship and produces cooperation not because actor B cares for or is concerned about actor A's interests but because actor B fears or wishes to avoid the soft incentive.

claims that social constraints, such as informal sanctions and legal enforcements, actually undermine trust and cooperation (Diamond 1971; Gellner 1988; Taylor 1987; Titmuss 1970).

The general argument put forth by scholars in this area is as follows: when an actor is intrinsically motivated to perform a given act, and is subject to an external reward or punishment, the actor will attribute their personal motivation, and eventual action, to the extrinsic device rather than to their self-determined intrinsic desires (Deci 1971, 1975; Fehr and Falk 2001; Greene et al. 1976). External motivations in this instance replace, or *crowd out*, internal motivations, and, as a result, an actor's intrinsic desire to perform a given act decreases (Deci at al. 1999). A classic example of this process is one every parent faces: to reward, punish, or ignore a child's behavior. For instance, Deci and Flaste (1995) found that if children were given "gold" stars to practice the violin, the children lost interest in trying hard pieces and, instead, improved their skills only by playing and practicing easy pieces so as to receive the reward. Despite the simplicity of "gold" stars and violin practice, the broader implication of this argument—that extrinsic rewards undermine and crowd-out intrinsic motivations—suggests that intrinsically motivated cooperation dissipates in the presence of social constraints (Bohnet, Frey, and Huck 2001; Bowles 2008; Frey and Jegen 2001; Reeson and Tisdell 2007; Taylor 1987).[39]

The scope of this *crowding-out effect* extends beyond one's own intrinsic motivations to beliefs about the intrinsic motivations of others. Similar to the internal-external divide outlined above, Mulder et al. (2006) and others (Chen, Pillutla, and Yao 2009; Irwin et al., in press; Malhotra and Murnighan 2002; Simpson and Eriksson 2009) have argued that by serving as signals of distrust, social constraints simultaneously *increase* the belief that trusted actors are

[39] For similar ideas, but from different theoretical standpoints, see Fehr and Falk (2001), Frey (1993, 2000), and Tenbrunsel and Messick (2001). Generally, these authors argue that social constraints undermine moral and ethical motives in favor of strategic and calculative motives, which crowds-out spontaneous cooperation.

externally motivated to cooperate but *decrease* the belief that trusted actors are internally motivated to cooperate. To put it differently, social constraints act as countervailing forces promoting and undermining certain forms of trust, with overall trust greatest under conditions of weak external control and lowest under conditions of strong external control.

Breaking from this literature, I argue, instead, that social constraints do, in fact, increase trust but that the size and magnitude of this effect is conditional on whether the trustworthiness of others is perceived as internally or externally motivated. But how can A believe that B's trustworthiness is internally motivated if external motivators, such as binding contracts and monetary regulations, align A's interests and B's interests? I propose that a cognitive bias familiar to social psychologists can reconcile this contradiction: the fundamental attribution error (FAE) and other forms of correspondence bias (CB) (Gilbert and Malone 1995; Jones and Harris 1967; Ross 1977). FAE is the tendency to overestimate the effect of disposition (or internal psychology) and underestimate the effect of the situation (or external factors) in explaining social behavior, while CB is the tendency to draw dispositional inferences from behavior regardless of situational factors. For instance, if you provide me with poor service at a restaurant, I might attribute your poor service to laziness or carelessness—dispositional factors—where, in reality, a death in the family—the situation—influenced your poor service. If I, as a customer, was aware of the death in your family but still attributed your poor service to laziness and carelessness (either automatically or deliberatively), FAE would be at work. If I didn't know about the death in your family and attributed your poor service to laziness and carelessness (either automatically or deliberatively), CB would be at work.

Despite the centrality of perceived behavior for both FAE and CB, I expect causal attributions and attribution biases to influence explanations of observed behavior *and* expectations of future behavior. I make such claims as many of the mechanisms accounting for FAE and CB are also at work when expectations about a person's trustworthiness are formed (Gilbert and Malone 1995). First, a person may *lack awareness* of the causal role a situational force might play in the prior and future behavior of others. Second, a person may be aware of the causal role a situational force might play but hold *unrealistic expectations* about how the situation affects another's prior and future behavior. Thus, *lack of awareness* and *unrealistic expectations* should produce expectations of trustworthiness that underestimate the casual role of situational forces.

Based on the literature above, I expect social constraints external to an A-B exchange relationship to increase trust, with stronger positive effects when another's trustworthiness is perceived as externally motivated and weaker positive effects when another's trustworthiness is perceived as internally motivated. But I also expect greater trust among actors who underestimate the effects of social constraints (and draw dispositional inferences regarding another's trustworthiness) than actors who correctly estimate and attribute the effects of social constraints to the situation. In other words, social constraints do not necessarily undermine or crowd-out trust. Instead, the effect of social constraints on trust varies to the extent that one draws dispositional or situational expectations of another's trustworthiness. Thus: *social constraints and causal attributions interact in their influence on trust* (hypothesis 12).

Other-Praising Emotions. As detailed above, there is little argument in the social sciences about whether trustworthiness begets trust (see Barber 1983; Lewis and Weigert 1985; Luhmann 1979 for exceptions). What remains unresolved, however, are the types of motivations sufficient to produce trust and whether some perceived motivations have stronger effects than others. To address these outstanding issues, I first revisit instrumental and expressive motivations internal to exchange relationships—encapsulated interests, goodwill, and virtuous dispositions—and then pinpoint why each perspective generates different amounts of trust depending on if and how other-praising emotions are triggered.

Russell Hardin suggests that the only reasonable account of trust is one that includes the concept of encapsulation, where "…the trusted encapsulates the interests of the truster and therefore has incentive to be trustworthy in fulfilling the truster's trust (2002: 24)". Hardin proposes that encapsulation is most common under conditions of ongoing exchange relationships (1993, 2001, 2002), as the prospect of future exchange motivates the trusted to consider and take into account the interests of a truster. Besides repeated exchange, a number of other sociologically relevant factors can stimulate encapsulation, including concern for one's reputation (Cook et al. 2005), certain types of institutional and normative constraints (Farrell 2009), and perceptions of goodwill and virtue (Hardin 2001).

In other words, Russell Hardin's encapsulated-interest account of trust characterizes goodwill and virtuous dispositions as forms of trustworthiness that provide people with reasons to trust. For goodwill, the trusted counts the interests of the truster to some extent as their own (i.e., A's utility is partially included in the utility of B), and, hence, A's welfare matters to B and A's interests are thus encapsulated by B. For virtuous dispositions, the trusted counts the interests of everyone to some extent as their own, and fulfills trust placed in them because of who they are as people; thus, everyone's welfare matters to B and, as a consequence, everyone's interests are encapsulated by B. Although goodwill informs many of our relationships with close friends and immediate family and virtuous dispositions establish some of our interactions with religious figures as well as charismatic political leaders, Hardin insists that neither goodwill nor virtuous dispositions form the bulk of our trust relationships. Instead, the myriad interactions we encounter on a daily basis that require trust consist of motivations where the trusted merely treats the truster as a means to an end: as an individual who can actualize the trustee's interests.

What Hardin proposes, then, is an interest-based rational choice model of trust, where a truster might trust a trustee for very different reasons but as long as these reasons solidify the process of encapsulation then trust will follow. In other words, the belief that you care for and are concerned about my interests (i.e., you treat me as an end in itself) should yield trust to the same extent as the belief that you value the future of our exchange relationship or your personal reputation (i.e., you treat me as a means to an end). As Hardin writes:

> "We commonly trust our parents, siblings, close friends, spouses, and others who are close to us…within varying limits. One might wish to call these normative instances of trust. But the actual trusting is not different from purely interested cases under the trust game or iterated exchange. If there is a normative quality to these instances from love and so forth, it is in the fact of the love or friendship and the caring for another that follows from these (p. 24)".

To put it differently, Hardin believes that perceived commitment based on instrumental motivations (means to an end) does not differ in the production of trust from perceived commitment based on expressive motivations (end in itself).

Yet, instrumental and expressive motivations are analytically distinct, and should produce differential levels of trust depending on the mechanisms triggered in their presence or absence. Drawing on the other-praising emotions literature in psychology (Algoe and Haidt 2009; Haidt 2003), I propose two such mechanisms: gratitude and admiration.[40] Other-praising (or

---

[40] The social exchange literature has long suspected a relationship between exchange structure and sentiment (e.g., Blau 1964), with recent research showing how positive feelings toward *and* positive assessments of an exchange partner or group—what social exchange scholars refer to as *affective regard* for dyads (Kuwabara 2011; Molm et al. 2007) and *affective attachment* for networks and groups (Lawler et al. 2008)—depend on how resources are exchanged, either bilaterally (e.g., negotiated exchange) or unilaterally (e.g., reciprocal exchange), and how actors view exchange, either cooperatively or competitively (Kuwabara 2011). This literature, however, has a tendency to (a) treat trust, affective regard, and cohesion as indicators of other concepts, such as sentiment (Molm et al 2007) or solidarity (Molm et al. 2007), without exploring if and how the indicators interrelate, and (b) treat other-praising emotions (e.g., gratitude) merely as outcomes and not as causes (Lawler et al. 2008).

evaluative) emotions are positive emotions individuals experience by witnessing or directly benefiting from the exemplary (and sometimes virtuous) actions of others (Haidt 2003; Algoe and Haidt 2009). Within this family of emotions, gratitude and admiration are the most common. Gratitude is a positive emotional reaction to the benefits received from others (Tsang 2006). It is frequently defined as the state of being grateful—a warm and friendly feeling toward a benefactor—triggered by the perception that another has intentionally and voluntarily done a good deed for the self (Haidt 2003). Admiration, like gratitude, is a positive emotional reaction, but unlike gratitude it is a positive emotional reaction to acts of charity, generosity, and displays of virtue as well as extraordinary displays of skill, talent, and achievement that benefit third parties (Haidt 2003; Immordino-Yang et al. 2009; Ortony et al. 1988). It is, in other words, the "warm", uplifting feelings of awe, elevation, and inspiration people experience when witnessing moral and non-moral excellence (Immordino-Yang et al. 2009). Recent social psychological research has linked other-praising emotions to a number of outcomes, including well-being (Emmons and McCullough 2003), social cohesion (Algoe, Haidt and Gable 2008), generosity (Lambert, Graham and Fincham 2009), and indirect reciprocity (McCullough, Kimeldorf and Cohen 2008). In spite of this, no sociological research to date has explored the types of commitment sufficient to generate other-praising emotions nor investigated if and how other-praising emotions impact trust.

I propose that other-praising emotions—gratitude and admiration in particular—mediate the relationship between perceived motivations and trust, but that some perceived motivations generate stronger feelings of gratitude and admiration than others and, as a result, produce higher levels of trust than others. The plausibility of these hypotheses is based on two lines of research. First, theory suggests that other-praising emotions can be produced by the receipt of positive benefits even if a benefactor's motivations are purely instrumental (Elster 1999, 2007), but that other-praising emotions are strongest when a benefactor's actions are perceived as benevolent and altruistic (Algoe and Haidt 2008; McCullough et al. 2001). As a result, I expect perceived commitments based on instrumental motivations sufficient conditions for gratitude. And since gratitude is a state of gratefulness for the receipt of good deeds—intentionally and voluntarily provided—I also expect perceived commitments based on expressive motivations to yield the highest levels of gratitude. If the actions of a virtuous benefactor directly affect a beneficiary and not merely third-parties, then virtuous dispositions will produce levels of gratitude comparable to goodwill. With respect to admiration, I only expect perceived motivations based on virtuous dispositions to increase admiration: virtuous actors are concerned with and have benefited the interests of third-parties and the truster. Thus: *encapsulated interests increase gratitude* (hypothesis 13)*; goodwill and virtuous dispositions increase gratitude to a greater extent than encapsulated interests* (hypothesis 14)*; and, virtuous dispositions increase admiration* (hypothesis 15).

Second, the study of emotions has a long history in sociology (Scheff 1983; Thoits 1989; Turner and Stets 2006), but it is only recently that social scientists have begun to systematically explore the relationship between emotions and beliefs. The recency of these developments is surprising given countless proverbs and love stories devoted to this issue—from "the moment he falls in love even the wisest man no longer sees anything as it really is" to "we believe easily what we hope and what we fear". With respect to emotions and trust, social scientists have long suspected such a relationship (e.g., Lewis and Weigert 1985; McAllister 1995; Rempel et al. 1985), and have shown that mood, emotions, and hormones can stimulate trust (Baumgartner et al. 2008; Kosfeld et al. 2005; Lount 2010; Dunn and Schweitzer 2005; Rempel et al. 1985).

Although little work to date has explored if and how other-praising emotions impact trust (Dunning and Fetchenhauer 2010), theory suggests that positive emotions associated with exchange should (i) motivate individuals to build their intellectual, social, and material resources for the future, which broadens and changes an actor's cognitions and beliefs (Algoe and Haidt 2008; Fredrickson 1998; Isen 1987), and (ii) compel actors to interpret the ultimate source of their positive feelings as coming from the exchange relationship, which heightens relational attachments (Lawler and Yoon 1993, 1996). Thus, positive emotions increase trust to the extent that relations are perceived as unifying, integrating, and repeating.

From this, I expect gratitude and admiration to increase trust, but for gratitude to exert a stronger effect on trust than admiration as the focal actor for gratitude is the truster, while the focal actors for admiration are third-parties. Altogether, the literature and arguments outlined above yield the following hypotheses*: admiration increases trust* (hypothesis 16), *and gratitude increases trust to a greater extent than admiration* (hypothesis 17).

Present Research

I test the hypotheses outlined above across several studies. In studies 1a and 1b, I conducted web-based experiments of simulated 'car repair' and 'group project' scenarios on Amazon.com's Mechanical Turk, exploring which forms of perceived motivations are sufficient for trust (i.e., hypotheses 7-10) and whether differences in magnitude exist for those forms of perceived motivation that produce trust (i.e., hypothesis 11). Studies 1a and 1b were also employed to investigate the moderating effects of causal attributions, investigating whether internal attributions of social constraints produced greater levels of trust than external attributions (i.e., hypothesis 12). Studies 2a and 2b replicated studies 1a and 1b on a large, random sample of undergraduate students, and investigated what social psychological mechanisms drive the relationship between perceived motivations and trust, testing the possible mediating role of other-praising emotions—gratitude and admiration (i.e., hypotheses 13-17).

Studies 1a and 1b: Perceived Motivations, Causal Attributions, and Trust

The purpose of the first two studies is to demonstrate (a) the differential impact of perceived motivations on trust, (b) the moderating effect of causal attributions on social constraints and trust in a controlled environment, and (c) the robustness of hypotheses 7 through 12 across different situations and samples (Ioannidis 2005; Murayama et al. 2013). To this end, two web-based experiments—one consisting of a simulated 'car repair' scenario (study 1a) and the other of a simulated 'group project' scenario (study 1b)—were conducted on Amazon.com's Mechanical Turk.

Methods

Design and Participants. Each experiment features a 5 (Age: 20, 30, 40, 50, or 60 year old) x 4 (Race: white, black, Hispanic, or Asian) x 2 (Gender: male or female) x 4 (Reputation: no reputation or positive reputation) x 3 (Halo: blank, bad used computer, or good used computer) x 2 (Competence: blank or competent) x 2 (Exertion: blank or hard-working) x 6 (Perceived motivations: uncooperative, no prior interaction, prior interaction, encapsulated interests, goodwill, or virtuous dispositions) x 3 (Contract: blank, non-binding contract, or binding contract) x 3 (Regulation: no regulations, non-monetary regulations, or monetary regulations) multifactorial vignette design, which yields a factorial object universe of 103,680 ($2^3 \times 3^3 \times 4^2 \times 5^1 \times 6^1$) unique vignettes (Jasso 2006; Rossi and Nock 1982).[41] One thousand one

[41] The factorial surveys used in the present chapter are based on vignettes developed by Barrera and Buskens (2012), Buskens (2002), Buskens and Weesie (2000), and Rooks et al. (2000), but differ in a number of important respects. First, Buskens and colleagues often employ vignettes based on buying a "used car" scenario, while "car repair" and "group project" scenarios constitute the two vignettes used in the present chapter. Second, Buskens and colleagues frequently employ *choice-based conjoint analysis* common to marketing research, where participants are presented with two alternative vignettes consisting of randomly varied dimensions (or treatments) and are asked to choose which vignette they most prefer (see Hainmueller, Hopkins, and Yamamoto 2014). In contrast, the multifactorial

hundred and thirty-five Mechanical Turk workers participated in study 1a (597 males, 525 females, 3 other gender, 10 PNS/missing; median age = 29), while one thousand and thirty-six Mechanical Turk workers participated in study 1b (450 males, 570 females, 16 PNS/missing; median age = 29). In both studies, workers were paid $2 for their participation.[42] Each study consisted of a unique Mechanical Turk sample with no redundant workers across samples.

Procedure. Participants were contacted over Amazon.com's Mechanical Turk (MTurk) via a HIT (Human Intelligence Task) advertising $2 payment for participating in a web-based sociology experiment.[43] To be eligible, MTurk participants must have been legal adults residing in the U.S. with approval rates 90% or above on previous MTurk tasks (Berinsky et al. 2012; Mason and Suri 2012). After accepting the HIT and consenting to participate in the study, participants were shown a cover sheet for a hypothetical 'car repair' scenario (see Appendix C for further details about vignette experiment and conventional survey items):

> "You just started a new job that requires you to commute every day to work. A couple of days before the job starts you decide to take your car in to an automotive repair shop called The Autoshop for an oil change. In the middle of the oil change, the auto mechanic tells you about a major issue with your car's engine that will cost about $1,000 to repair, including parts and labor. You would like your car to be in working order, but you want to spend your money wisely since the amount of money required to restore the car's engine is large compared to your budget.

---

vignette format used here is a *rating-based conjoint analysis*, where participants provide a numerical rating for each vignette which represents their degree of preference for the vignette. I argue that this latter method is desirable as it produces more detailed information about the participant's trust and as it permits linear analysis of within- *and* between-person variation in trust, whereas choice-based conjoint analysis is confined to the analysis of between-person variation in trust. Third, and finally, although some overlap in dimensions occurs—particularly the *reputation* dimension—all other dimensions I explore are either more in-depth (i.e., prior motivations dimension) or entirely new (i.e., age, race, gender, competence, etc.).

[42] One thousand two hundred and seventy-six MTurk workers completed study 1a. One hundred and forty-one of these MTurk workers were excluded from the analysis for failing, or providing missing data for, three screener questions (failed = 130, missing = 11) (Berinsky et al. 2014). Likewise, one thousand three hundred and twenty-two MTurk workers completed study 1b. Two hundred and eighty-six of these MTurk workers were excluded from the analysis for failing, or providing missing data for, three screener questions (failed = 272, missing = 14). Results were substantively similar when including 'non-attentive' subjects in both study 1a and study 1b (see the "Chapter 6: Appendix" for results).

[43] Studies 1a and 1b were published on Amazon.com's Mechanical Turk Requester site on October 2nd and October 9th of 2013, respectively. Both studies were completed on the day of their publication.

> Additionally, you have some concern: the auto mechanic might suggest fraudulent (or intentionally deceptive) services that are unnecessary and quite costly to you but beneficial to the auto mechanic. You're also concerned since the auto mechanic might provide low quality services at an exaggerated price that would require additional and costly repairs in the future. Plus, you know people who've paid for needless repairs and have had recurrent car problems because of poor quality auto-mechanic services."

Or a hypothetical 'group project' scenario:

> "You are a college student who is enrolled in a course that requires a group project assignment. Each group project involves two separate tasks, one student to analyze data and one student to write a technical report of the results. For your specific group, you were assigned the task of writing a technical report of the results, while your partner was assigned the task of analyzing the data.
>
> But you have some concern: students receive the same grade regardless of their contribution to the group project. You're also concerned since the group project is difficult to complete alone and your partner's contribution to the group project is unknown and uncertain. In other words, if your partner doesn't complete the data analysis for the group project, you might not finish in time and fail the assignment as you'll have to analyze the data without help and write a technical report of the results alone. But if you manage to analyze the data and write a technical report of the results, your partner will receive the same grade as you without having contributed to the group project. Unfortunately, you know people who have failed group projects in the past because other group members did not complete their assigned tasks."

The 'car repair' and 'group project' scenarios were constructed to maximize differences across a number of theoretically relevant parameters while maintaining congruency of dimensions between scenarios. These differences include the following (with 'car repair' versus 'group project' comparisons): bilateral versus unilateral exchange, market versus non-market exchange, tangible versus intangible resources, mutual dependence versus interdependence, and transferable versus non-transferable goods. As a result, the two scenarios were employed to explore the robustness of the hypotheses outlined above, rather than test hypothesized differences in parameter estimates across scenarios (Guala 2012; Levitt and List 2007).

After this, participants were informed of how they would be assessing a series of hypothetical situations based on the initial scenario, and that each situation would end with two questions: one on trust and one on causal attributions. Participants were then quizzed on the respective scenarios outlined above with two of three screener questions (Berinsky et al. 2014) and then shown ten vignettes randomly drawn with replacement from the vignette object universe of 103,680 unique vignettes. An example vignette from the 'car repair' scenario is as follows:

- The auto mechanic is a 30 year old, white female.
- As far as you know, none of your friends have used the auto mechanic's services before.
- The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic genuinely cares for and is concerned about your interests. You know this since the auto mechanic has repaired your car for free when you couldn't afford the cost of repairs. And, as best you can tell, the auto mechanic is a hard-working, competent machinist.
- The auto mechanic signs a limited warranty outlining how the auto mechanic will be subject to costly professional penalties if the repairs and new engine parts do not last 50,000 miles.
- An automotive agency regulates services at The Autoshop by fining auto mechanics who provide fraudulent services to their customers.
- The auto mechanic sold you a used computer before but you were dissatisfied with the computer.

An example vignette from the 'group project' scenario is as follows:

- The student is a 30 year old, white female.
- As far as you know, none of your friends have worked on a group project with the student before.
- The student has worked on group projects with you before and always completes the assigned data analysis task because the student genuinely cares for and is concerned about your interests. You know this since the student has completed your assigned task when you were too overwhelmed with other obligations and commitments to finish it yourself. And, as best you can tell, the student is a hard-working, competent data analyst.
- The student signs an academic honor pledge outlining how the student will be subject to costly academic penalties if the data analysis for the group project is not completed on time.
- The college does not regulate contributions to group projects.
- The student sold you a used computer before but you were dissatisfied with the computer.

Perceived Motivations. The perceived motivations dimension consists of six levels (or magnitudes). Each level centers on information provided by prior interactions, builds on the previous level, and—in the case of the encapsulated interests, goodwill, and virtuous dispositions levels—imposes beliefs about the motivations of an exchange partner. The prior interactions level is included to disentangle the effect of previous exchange from the beliefs imposed by the encapsulated interest, goodwill, and virtuous dispositions levels. The goodwill and virtuous disposition levels include an additional behavior to signal regard for the truster: an act of 'gift giving' that, according to social exchange theory in sociology and anthropology, represents expressive motivations (Molm et al. 2007). A level for prior unsuccessful exchange, 'uncooperative', is included to explore the spectrum of perceived motivations. Although not hypothesized, I expect the 'uncooperative' level to have the greatest impact on trust since negative stimuli, all else equal, have stronger effects than equally valenced positive stimuli (Baumeister et al. 2001). The levels for the perceived motivation dimension in the 'car repair' scenario are as follows:

- *No prior interaction*: "The auto mechanic has never serviced your car before".
- *Uncooperative*: "The auto mechanic has serviced your car before but provided fraudulent and costly repairs".
- *Prior interaction*: "The auto mechanic has serviced your car before and always provides justifiable repairs".
- *Encapsulated interests*: "The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic is interested in your future business".
- *Goodwill*: "The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic genuinely cares for and is concerned about your interests. You know this since the auto mechanic has repaired your car for free when you couldn't afford the cost of repairs".
- *Virtuous dispositions*: "The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic genuinely cares for and is concerned about the interests of all customers. You know this since the auto mechanic has repaired your car and other customers' cars for free when customers couldn't afford the cost of repairs".

And the levels for the perceived motivation dimension in the 'group project' scenario are as follows:

- *No prior interaction*: “The student has never worked on a group project with you before”.
- *Uncooperative*: “The student has worked on a group project with you before but failed to complete the assigned data analysis task”.
- *Prior interaction*: “The student has worked on group projects with you before and always completes the assigned data analysis task”.
- *Encapsulated interests*: “The student has worked on group projects with you before and always completes the assigned data analysis task because the student is interested in working with you as a partner on future group projects”.
- *Goodwill*: “The student has worked on group projects with you before and always completes the assigned data analysis task because the student genuinely cares for and is concerned about your interests. You know this since the student has completed your assigned task when you were too overwhelmed with other obligations and commitments to finish it yourself”.
- *Virtuous dispositions*: “The student has worked on group projects with you before and always completes the assigned data analysis task because the student genuinely cares for and is concerned about the interests of all group members. You know this since the student has completed your assigned task and tasks assigned to other group members when group members were too overwhelmed with other obligations and commitments to finish it themselves”.

To operationalize social constraints, two separate dimensions (*contract* and *regulation*) consisting of three levels each were included. The levels for the *contract* dimension in the ‘car repair’ scenario are as follows:

- *No contract*: Blank (i.e., participant shown nothing).
- *Non-binding contract*: “The auto mechanic verbally promises you that the repairs and new engine parts will last for at least 50,000 miles”.
- *Binding contract*: “The auto mechanic signs a limited warranty outlining how the auto mechanic will be subject to costly professional penalties if the repairs and new engine parts do not last 50,000 miles”.

The levels for the *contract* dimension in the ‘group project’ scenario are as follows:

- *No contract*: Blank (i.e., participant shown nothing).
- *Non-binding contract*: “The student verbally promises you that the data analysis for the group project will be completed on time”.
- *Binding contract*: “The student signs an academic honor pledge outlining how the student will be subject to costly academic penalties if the data analysis for the group project is not completed on time”.

Conceptually, non-binding contracts, such as handshakes and verbal promises, facilitate exchange sans external enforcement. In spite of this, I employ a level for non-binding contracts to compare and contrast the effects of binding contracts. This is important as the causal attribution hypothesis (hypothesis 12) might not hold for non-binding contracts internal to an A-B exchange relationship but hold for binding contracts external to an A-B exchange relationship. If this is the case, such evidence would further support hypothesis 12.[44] Moreover, binding and non-biding contracts have been shown to produce different amounts of trust and cooperation as a result of attributing another's cooperation to constraints imposed, rather than to a trustee's internal motivations (e.g., Malhotra and Murnighan 2002). This argument, however, assumes error-free causal attributions. As a result, my goal is to see if these arguments hold under misattributions and investigate if and how attribution biases and (non)binding contracts interact in their influence on trust.

Following the recent literature on (non)monetary sanctions and trust (Chen et al. 2009; Mulder et al. 2006), I constructed the *regulation* dimension in the 'car repair' scenario to consist of the following three levels:

- *No regulation*: "An automotive agency does not regulate services at The Autoshop".
- *Non-monetary regulations*: "An automotive agency regulates services at The Autoshop by teaching auto mechanics who provide fraudulent services to their customers about business ethics and professional integrity".
- *Monetary regulations*: "An automotive agency regulates services at The Autoshop by fining auto mechanics who provide fraudulent services to their customers".

And the regulation dimension in the 'group project' scenario is as follows:

- *No regulation*: "The college does not regulate contributions to group projects".
- *Non-monetary regulations*: "The college regulates contributions to group projects by teaching students who don't turn in their assigned tasks about academic ethics and educational integrity".

[44] Contracts vary in the degree to which they can be enforced and are binding. For instance, strong normative pressures arising from community enforcement mechanisms might make some forms of non-binding contracts, such as handshakes, more binding. In spite of this, classic conceptualizations of non-binding contracts consist of agreements between two interacting parties in which offers are made and accepted without legal or community-based enforcement. This is how I operationalize the non-binding contract level used here.

- *Monetary regulations*: “The college regulates contributions to group projects by revoking financial aid and academic scholarships from students who don’t turn in their assigned tasks. And, as far as you know, the student receives financial aid”.

In other words, the regulation dimension operationalizes organizational constraints that control transactions in entire exchange domains (i.e., multiple exchange relationships), whereas the contract dimension operationalizes social constraints that emerge from and apply to specific exchange relationships. I employed monetary and non-monetary regulations to explore the robustness of hypothesis 12.

Measures. At the bottom of each vignette, participants were asked two questions. One question assessed participants’ trust, while the other assessed participants’ casual attributions (see Collett 2011). Both questions were structured as 11-point bipolar scales, with the trust question phrased as follows (‘group project’ elements in parentheses): “*Given the conditions above, to what extent do you trust the auto mechanic (student) to provide justifiable and quality auto repairs (to complete the assigned data analysis task)?*”, ranging from “Complete distrust” (0 value) to “Neither trust nor distrust” (50 value) to “Complete trust” (100 value) with a “Don’t know” option at the end of the scale (study 1a: $M = 6.54$, $SD = 2.69$, min = 0, max = 10; study 1b: $M = 7.56$, $SD = 2.27$, min = 0, max = 10). The causal attributions question followed a similar structure (‘group project’ elements in parentheses): “*Was the value you provided above primarily influenced by characteristics of the situation, primarily influenced by characteristics of the mechanic (student), or influenced by characteristics of both (if you think both contributed equally, mark 50 on the scale)?*”, ranging from “Characteristics of the situation” (0 value) to “Characteristics of both” (50 value) to “Characteristics of the mechanic” (100 value) with a “Don’t know” option at the end of the scale (study 1a: $M = 5.86$, $SD = 2.46$, min = 0, max = 10; study 1b: $M = 6.48$, $SD = 2.38$, min = 0, max = 10). Both scales were then divided by 10 to produce variables ranging from 0 to 10.[45]

After assessing the ten vignettes, participants filled out a demographic questionnaire and a series of survey questions about generalized and particularized trust, voluntary organization memberships, social value orientations, risk aversion, trustworthiness, and a final screener question.[46] Afterwards, participants were shown a debriefing statement, thanked for their participation, and paid $2. The median time to complete study 1a and 1b was 17.67 and 18.60 minutes, respectively.

Analytic Strategy. My factorial research design yields data in which *i* vignettes (*i* = 1,…, 10) are nested within *j* individuals (*j* = 1,…, 1135), resulting in a pooled time-series cross-sectional data set. Because vignettes are dependent within individuals but orthogonal to each other and to individual respondent characteristics, the appropriate model is a two-level mixed-effects random-intercept model (Raudenbush and Bryk 2002) (see equations 5.1 and 5.2 specified in chapter 5). All modeling procedures were executed in Stata 13.1.

Results

Table 6.1 gives results of analyses for the effects of perceived motivations on trust. Models 1 and 2 were two-level mixed-effects random-intercept models predicting trust in the 'car repair' and 'group project' scenarios, respectively. Both models included dummy variables for all dimensions and a fixed slope for vignette number (*vignette*).[47]

---

[45] Responses consisting of "don't know" were excluded from the analysis ('car repair' scenario: trust = 13 responses, causal attributions = 29 responses; 'group project' scenario: trust = 4 responses, causal attributions = 5 responses).

[46] The consensus is that respondents perform well with ten vignettes per person and no more than twelve randomized dimensions per vignette (Auspurg et al. 2009; Sauer et al. 2010, 2011). With this design, the number of vignettes and dimensions is small enough to avoid response biases that might jeopardize validity and reliability, such as cognitive overload and fatigue (Auspurg et al. 2009; Jasso 2006; Sauer et al. 2010, 2011; Wallander 2009), but the number of vignettes is large enough to explore within-person *and* between-person variation in the outcome variables of interest.

[47] Although a statistically significant interaction effect between *vignette* and *uncooperative* was observed for both models, I excluded this higher-order term as it did not substantively alter the results presented here.

Although not shown, null models for the 'car repair' and 'group project' scenarios yielded relatively small intra-class correlation coefficients (model 1 = .09, model 2 = .13), with statistical significance reached for both random intercepts in the 'car repair' ($\sigma^2_{u_{0j}}$ = 0.62, *s.e.* = 0.06, $p < .001$) and 'group project' scenarios ($\sigma^2_{u_{0j}}$ = 0.67, *s.e.* = 0.03, $p < .001$). This suggests that between-person (or individual-level) differences, such as personality traits or genetic predispositions, appear to play a small part in the formation of trust (see Van Lange et al. 2014). Instead, 91% and 87% of the variation in trust is accounted for by contextual and situational characteristics of the 'car repair' and 'group project' scenarios, respectively. This finding, which has yet to be observed in the literature, strongly supports the idea that trust is a relational and situational phenomenon (Cook et al. 2005; Hardin 2002), which counters theories in the social sciences suggesting that trust largely stems from fixed characteristics of actors (e.g., Fukuyama 1995; Mansbridge 1999; Uslaner 2002; Yamagishi and Yamagishi 1994).

Table 6.1. Two-Level Mixed-Effects Models of Relational Trust with Random Intercepts and Fixed Slopes, Studies 1a and 1b

	Model 1	Model 2
	Car Repair	Group Project
No prior interaction (ref.)		
Uncooperative	-2.79*** (.06)	-2.16*** (.05)
Prior interaction	1.21*** (.06)	1.25*** (.05)
Encapsulated interests	1.44*** (.06)	1.37*** (.05)
Goodwill	2.24*** (.06)	1.75*** (.05)
Virtuous disposition	2.21*** (.06)	1.76*** (.05)
No contract (ref.)		
Non-binding contract	-.03 (.04)	.10** (.04)
Binding contract	.64*** (.04)	.37*** (.04)
No regulation (ref.)		
Non-monetary regulation	.56*** (.04)	.22*** (.04)
Monetary regulation	.75*** (.04)	.56*** (.04)
Constant	4.97*** (.09)	6.45*** (.08)
var(u_{0j})	.81*** (.05)	.78*** (.04)

var(e_{ij})	2.85*** (.04)	2.00*** (.03)
Other dimensions	Yes	Yes
Observations	11303	10338
Individuals	1135	1036

*** p < 0.001, ** p < 0.01, * p < 0.05, † p < 0.10 (two-tailed)
Note: (standard errors in parentheses)
Model 1 = Study 1a 'car repair' scenario
Model 2 = Study 1b 'group project' scenario

Interestingly, both models revealed strong support for all four views of commitment—social constraints, encapsulated interests, goodwill, and virtuous dispositions—and the predictions proposed in hypotheses 7 through 11. First, social constraints increased trust regardless of content and form (with the exception of non-binding contracts in the 'car repair' scenario). Second, perceived motivations based on encapsulated interests produced greater trust than either the no prior interactions level, the successful prior interactions level, or the social constraints dimensions. Third, the goodwill and virtuous disposition levels generated statistically equivalent coefficients that were greater in magnitude than either the encapsulated interests level or the social constraints dimensions. Fourth, the uncooperative level reached statistical significance and, as expected, had the greatest impact (negative) on trust than any other perceived motivation.

Table 6.2. Two-Level Mixed-Effects Moderation Models of Relational Trust with Random Intercepts and Fixed Slopes, Studies 1a and 1b

	Model 1	Model 2
	Car Repair	Group Project
No contract (ref.)		
Non-binding contract	-.02 (.11)	.17 (.10)
Binding contract	1.10*** (.10)	.75*** (.10)
No regulation (ref.)		
Non-monetary regulation	1.07*** (.10)	.37** (.11)
Monetary regulation	1.54*** (.10)	1.33*** (.11)
Causal attributions	.19*** (.02)	.14*** (.01)
Non-binding X attributions	.002 (.02)	-.01 (.02)

	Model 1	Model 2
Binding X attributions	-.08*** (.02)	-.06*** (.01)
Non-monetary X attributions	-.09*** (.02)	-.02 (.02)
Monetary X attributions	-.14*** (.02)	-.11*** (.02)
Constant	3.94*** (.12)	5.55*** (.12)
var(u_{0j})	.79*** (.05)	.73*** (.04)
var(e_{ij})	2.79*** (.04)	1.98*** (.03)
Other dimensions	Yes	Yes
Observations	11294	10326
Individuals	1135	1036

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed)
Note: (standard errors in parentheses)
Model 1 = Study 1a 'car repair' scenario
Model 2 = Study 1b 'group project' scenario

Table 6.2 provides results for the moderating effect of causal attributions on social constraints and trust (see hypothesis 12). Although not shown, the unconditional main effect of causal attributions on trust in both the ‘car repair’ and ‘group project’ scenarios (i.e., models 1 and 2 in Table 6.1, respectively) was statistically significant and positive (Model 1: $b = 0.09$, *s.e.* = 0.008, $p < .000$; Model 2: $b = 0.07$, *s.e.* = 0.007, $p < .0000$), which suggests that as internal attributions increase (i.e., attributing one’s trust to characteristics of the mechanic or student) so too does trust (conversely, the results suggest that external attributions decrease trust). With respect to the hypothesized interaction effect between social constraints and causal attributions, Table 6.2 reveals strong support for this claim. As can be seen, with the exception of non-binding contracts, social constraints across both scenarios yielded significant positive effects on trust when external attributions were drawn (i.e., “0” on the causal attributions scale), but that these positive effects declined—to varying degrees depending on the type of social constraint—as causal attributions moved from external to internal (i.e., from “0” to “10” on the causal attributions scale).

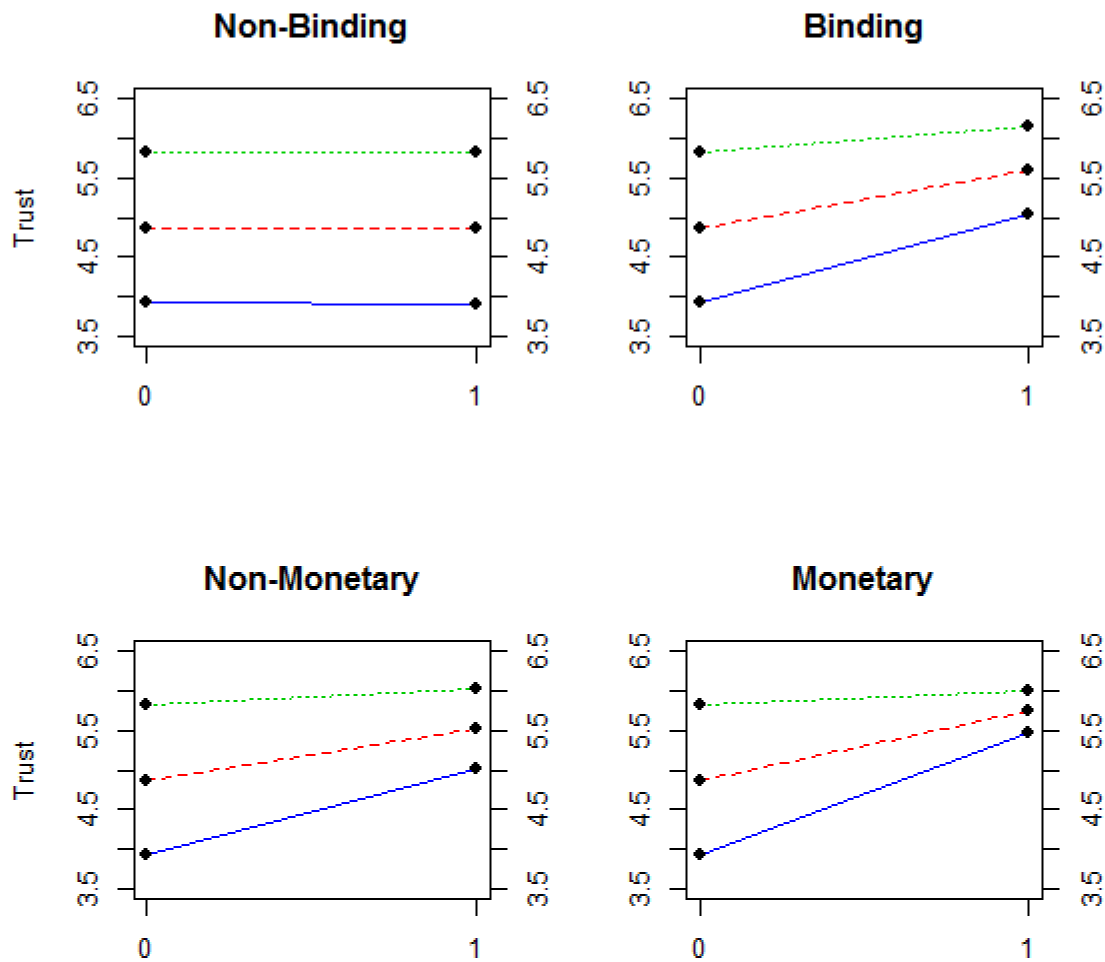

Figure 6.1. Relationship between social constraints and relational rust by causal attributions in the simulated 'car repair' scenario (solid blue line = external attributions, dashed red line = both internal and external attributions, dotted green line = internal attributions).

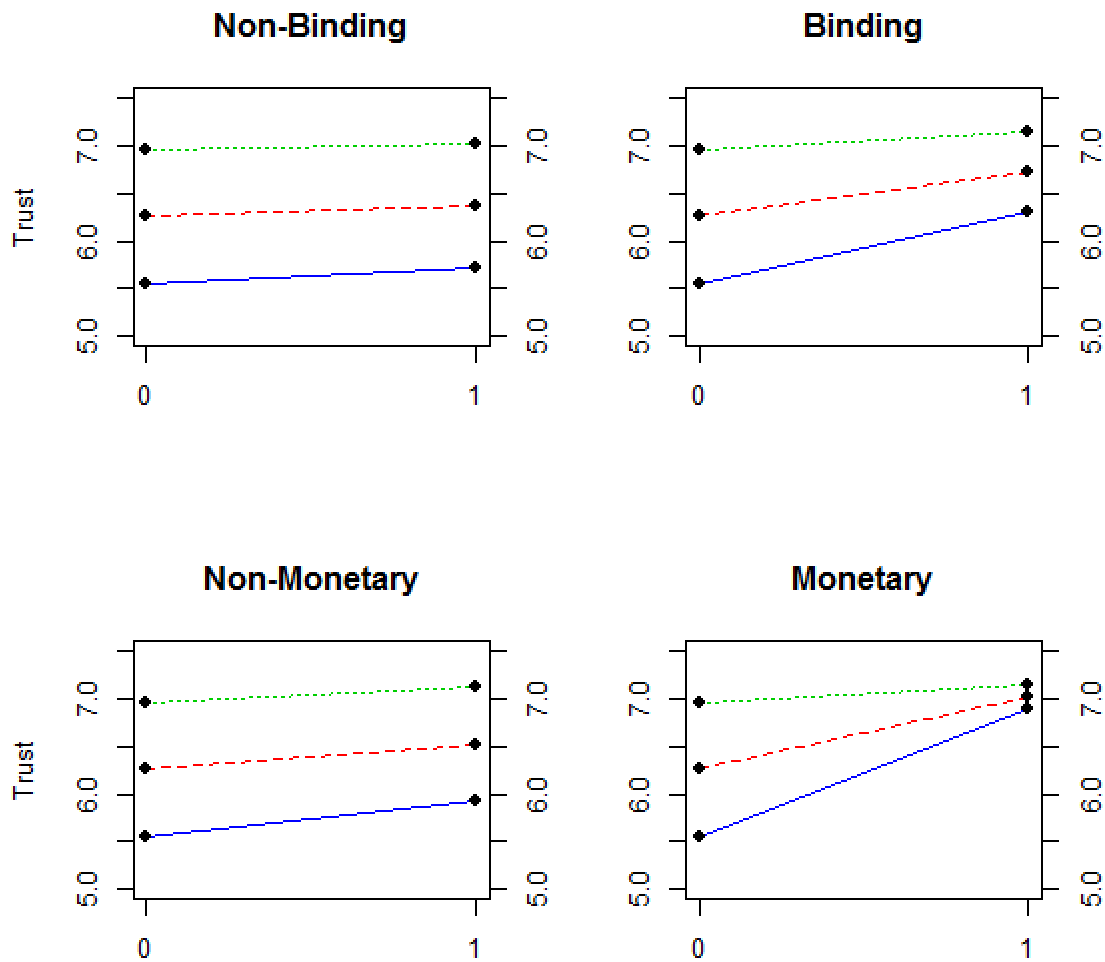

Figure 6.2. Relationship between social constraints and relational rust by causal attributions in the simulated 'group project' scenario (solid blue line = external attributions, dashed red line = both internal and external attributions, dotted green line = internal attributions).

Figures 6.1 and 6.2 illustrate these interaction effects for the 'car repair' and 'group project' scenarios, respectively, showing that the effect of social constraints on trust varied greatly depending on the type of causal attribution a respondent inferred. Take, for instance, monetary regulations in both the 'car repair' and 'group project' scenarios (Figures 6.1 and 6.2, respectively). In both scenarios, the slopes for monetary regulations were relatively steep when causal attributions were at zero (i.e., external attributions), where b = 1.54 in the 'car repair' scenario and *b* = 1.33 in the ‘group project’ scenario. But as causal attributions moved from external to internal, the slopes in both scenarios slowly decreased in size, eventually reaching *b* = 0.18 in the ‘car repair’ scenario and *b* = 0.19 in the ‘group project’ scenario. In other words, monetary regulations attributed to characteristics of the situation resulted in a 14% (‘car repair’ scenario) and 12% (‘group project’ scenario) increase on the 11-point trust scale, while monetary regulations attributed to characteristics of a trustee resulted in a substantively minor 2% increase.

Figures 6.3 and 6.4 further probe these interaction effects by graphically illustrating how the marginal effects of social constraints changed across the observed range of causal attributions. The solid black sloping line in each panel indicates how the marginal effects of social constraints changes with causal attributions. 95% confidence intervals around the solid black line determine the conditions under which social constraints have a statistically significant effect on trust, which occurs when the upper and lower bounds of a confidence interval are both above (or below) the red zero line. As can be seen, Figure 6.3’s marginal effects paralleled the statistical significance of the interaction terms found in model 1, Table 6.2 (the ‘car repair’ scenario); that is, regardless of the value of causal attributions, all social constraints except for non-binding contracts produced coefficients with 95% confidence intervals above the red zero line. Figure 6.4, however, exhibits less congruence between the marginal effects of social constraints and the statistical significance of the interaction terms in the ‘group project’ scenario (see model 2, Table 6.2). First, non-binding contracts have statistically significant effects on trust when attributions were described as both external and internal (i.e., between 3 and 7 on the causal attributions scale), but any values less than 3 (i.e., pure external attribution) or greater than 7 (i.e., pure internal attribution) generated statistical insignificance. Second, it is easy to see that the positive effect of non-monetary regulations on trust decreases as causal attributions increase, and that at no point do the 95% confidence intervals pass the red zero line even though the coefficient on the interaction term was statistically insignificant (see model 2, Table 6.2). While the dampening effect of causal attributions on non-monetary regulations was substantively minor, this exercise nonetheless supports the exploration of marginal effects in the absence of statistically significant interaction terms (Brambor et al. 2006).

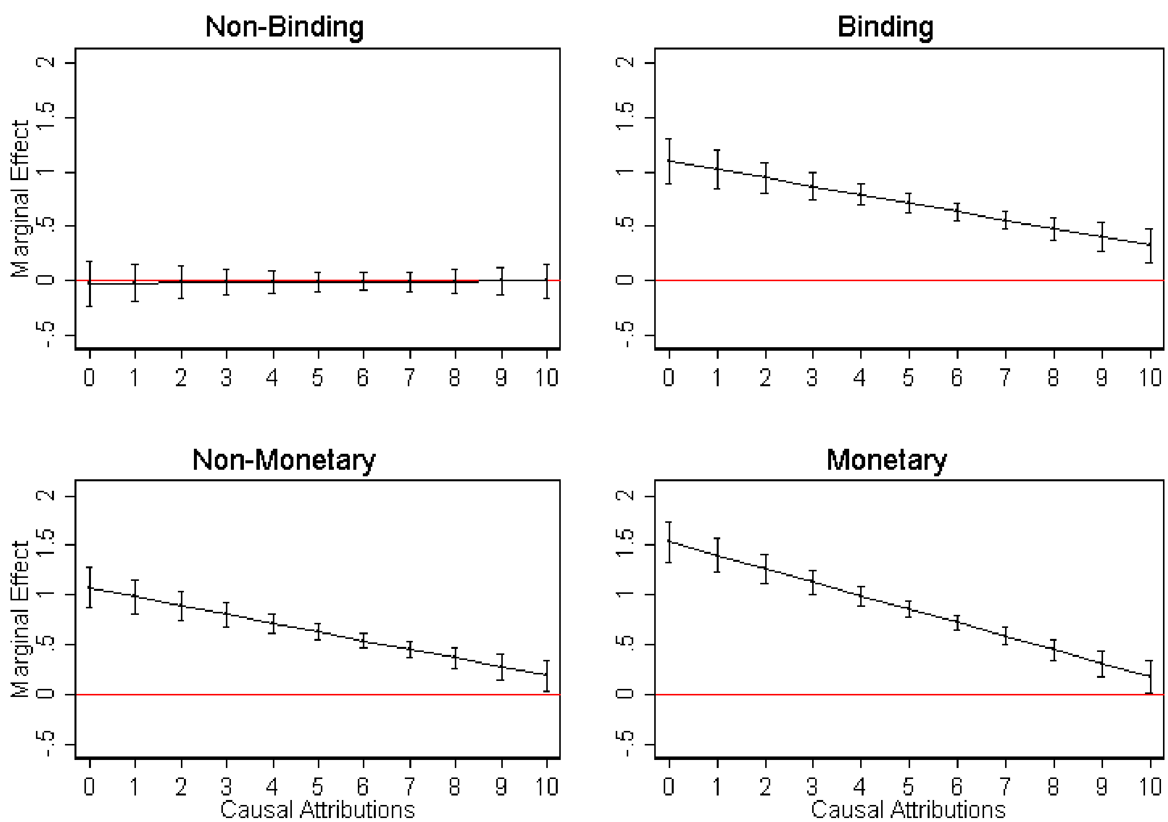

Figure 6.3. Marginal effects of social constraints by causal attributions in the simulated ‘car repair’ scenario. Causal attributions bipolar scale—smaller values equal external attributions, larger values equal internal attributions.

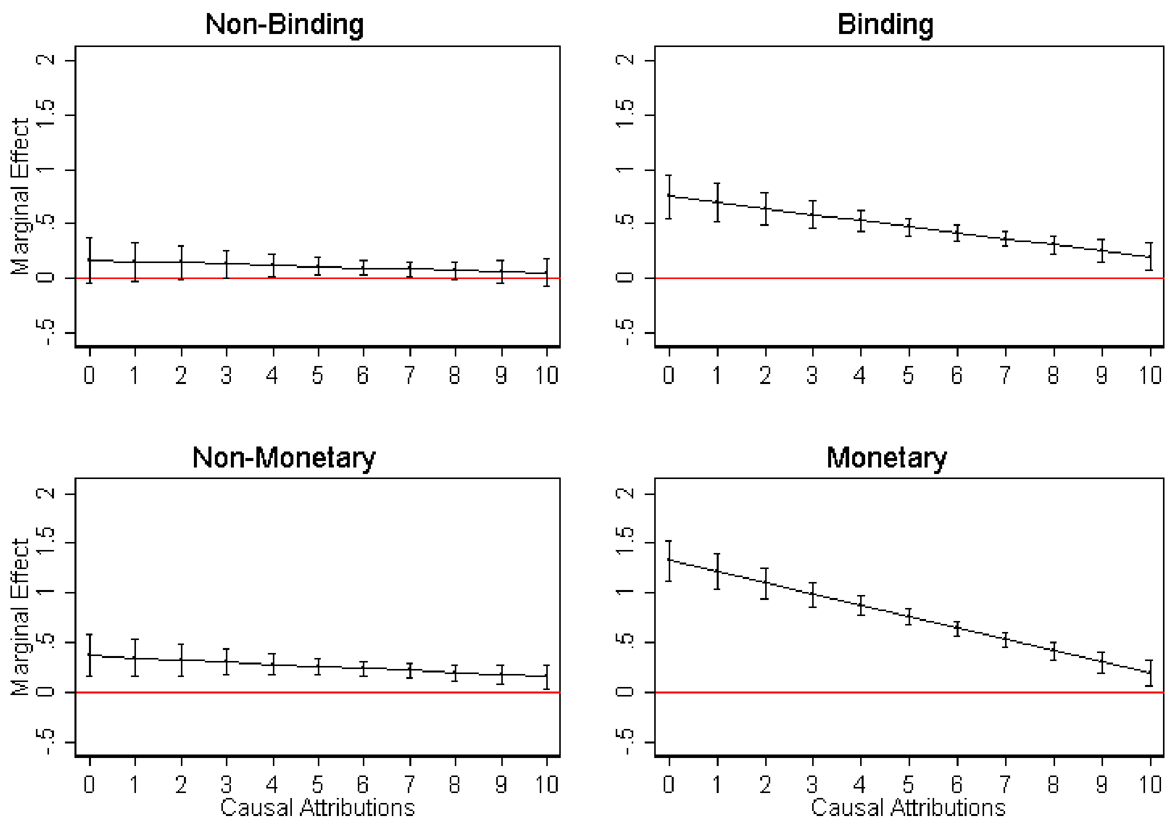

Figure 6.4. Marginal effects of social constraints by causal attributions in the simulated 'group project' scenario. Causal attributions bipolar scale—smaller values equal external attributions, larger values equal internal attributions.

Discussion

The results of studies 1a and 1b provided strong evidence for the role of perceived motivations in the formation of trust, with perceived *expressive* motivations—goodwill and virtuous dispositions—producing equivalent levels of trust that were greater than perceived *instrumental* motivations—encapsulated interests and social constraints. The results also found trustworthiness stemming from processes *internal* to an exchange relationship—goodwill, virtuous dispositions and encapsulated interests—to yield greater trust than trustworthiness stemming from processes *external* to an exchange relationship—social constraints. And, as predicted, social constraints increased trust to the extent that individuals attributed another's trustworthiness to the situation, although trust was greatest—even in the presence of social constraints—when individuals attributed another's trustworthiness to internal motivations.

Interestingly, the size and magnitude of these interaction effects depended on the content of social constraints and the conditions under which social constraints were applied. With respect to contracts, non-binding contracts yielded null conditional effects in the 'car repair' scenario and substantively minor conditional effects in the 'group project' scenario, while binding contracts interacted with causal attributions in both the 'car repair' and 'group project' scenarios. With respect to regulations, non-monetary regulations interacted with causal attributions to a greater extent in the 'car repair' scenario than in the 'group project' scenario, while monetary regulations interacted with causal attributions to the same extent in both scenarios.

The conditional effects of social constraints found here are compelling for a number of reasons. First, although non-binding contracts and causal attributions did not interact in their effects on trust, this is to be expected: classic forms of non-binding agreements, such as promises and handshakes, are generally more ambiguous, more difficult to enforce, and more internal to an A-B exchange relationship than binding contracts written and enforced by centralized authorities. In other words, because non-binding contracts usually emerge from—and are enforced by—social processes internal to an exchange relationship, they are more resilient to FAE and CB than other social constraints. This strengthens the hypothesis that attribution biases do, in fact, moderate the effects of social constraints *external* to exchange relationships on trust. Second, the current findings lend support to the literature on framing effects and trust (Fehr and Falk 2001). This research tradition suggests that framing an exchange in terms of ethical considerations should increase trust, while framing an exchange in terms of economic considerations should decrease trust (Tenbrunsel and Messick 1999). Although I failed to find support for the latter, the statistically significant and positive main effects of non-binding contracts and non-monetary regulations on trust in the 'group project' scenario support the former. That is, verbal promises and social sanctions may invoke ethical and moral considerations of an exchange that increase trust. Yet, these effects only hold under non-market conditions, suggesting the necessity of frame congruence—ethical frames invoked under exchange conditions marked by moral considerations—for the development of trust.

Studies 2a and 2b: Perceived Motivations, Other-Praising Emotions, and Trust

Studies 1a and 1b demonstrate that all four classic views of commitment produce trust, but that some forms of perceived motivation are stronger than others (goodwill = virtuous disposition > encapsulated interest > social constraints) and that social constraints and causal attributions interact in their influence on trust, with findings robust across samples and exchange conditions. These studies, however, do not observe how or why some motivations produce greater trust than others. Past theory and research suggests that other-praising emotions are emotional states triggered upon receipt of a gift from another person (in the case of gratitude) or upon observing a third-party receive a gift from another person (in the case of admiration and elevation) (Algoe and Haidt 2009; Haidt 2003). From this, I expect other-praising emotions—gratitude and admiration in particular—to mediate the relationship between perceived motivations and trust, but that expressive motivations—goodwill and virtuous dispositions—will generate stronger feelings of gratitude and admiration than instrumental motivations (i.e., encapsulated interests and social constraints) and, as a result, produce higher levels of trust. In other words, the mechanisms linking perceived motivations to trust consist of evaluative emotions. Finally, I expect gratitude to exert a stronger effect on trust than admiration as the focal actor for gratitude is the truster, while the focal actor for admiration is a third-party.

Methods

Participants and Design. Four hundred and ninety-three undergraduate students at the University of Washington (Seattle) participated in study 2a (180 males, 301 females, 4 other gender, 8 PNS/missing; median age = 20), while four hundred and seventy-four undergraduate students participated in study 2b (168 males, 295 females, 2 other gender, 9 PNS/missing; median age = 20).[48] In both studies, students who participated were entered into a lottery for the chance to win one of six $50 bills.[49] Studies 2a and 2b featured the same 2^3 x 3^3 x 4^2 x 5^1 x 6^1 multifactorial vignette design as studies 1a and 1b.

Procedure. Studies 2a and 2b were administered in the same way as studies 1a and 1b, respectively, with four exceptions. First, participants were contacted over e-mail advertising lottery payment for participating in a web-based sociology experiment.[50] Second, eligibility was restricted to University of Washington undergraduate students with legal adult status. Third, the median time to complete studies 2a and 2b was 17.36 and 17.50 minutes, respectively. Fourth, two vignette-level dependent variables (gratitude and admiration) preceded the relational trust dependent variable.

[48] Eight hundred and eighty-four students completed study 2a. Three hundred and ninety-one of these students were excluded from the analysis for failing, or providing missing data for, three screener questions (failed = 360, missing = 31). Likewise, eight hundred and forty-one students completed study 2b. Three hundred and sixty-seven these students were excluded from the analysis for failing, or providing missing data for, three screener questions (failed = 339, missing = 28). . Results were substantively similar when including ‘non-attentive’ subjects in both study 2a and study 2b (see the “Chapter 6: Appendix” for results).

[49] Ten thousand undergraduate students at the University of Washington were contacted. All students were randomly selected from a publicly available student directory. Of these ten thousand students, five thousand were randomly selected for each experiment. With respect to response rates, thirteen students did not meet study 2a’s eligibility requirements (e.g., reported not being legal adults), which produced a 17.7% response rate (e.g., 884 completed/4,987 eligible); while sixteen students did not meet study 2b’s eligibility requirements, which produced a 16.9% response rate (e.g., 841 completed/4,984 eligible).

[50] Both study 2a and study 2b were administered to University of Washington undergraduate students on October 29th of 2013. Both studies were completed on January 4th of 2014. Sampled students received no more than eight e-mail invitations to participate in the study over the course of this period.

Measures. At the bottom of each vignette, participants were asked three questions. One question measured trust with the item used in studies 1a and 1b (study 2a: M = 6.87, SD = 2.50, min = 0, max = 10; study 2b: M = 7.71, SD = 2.23, min = 0, max = 10), while two other questions assessed gratitude and admiration. All three questions were structured as 11-point bipolar scales, with the gratitude question phrased as follows (‘group project’ element in parentheses): “*Given the conditions above, to what extent do you feel gratitude towards the auto mechanic (student)?*”, ranging from “Complete ingratitude” (0 value) to “Neutral” (50 value) to “Complete gratitude” (100 value) with a “Don’t know” option at the end of the scale (study 2a: M = 6.31, SD = 2.43, min = 0, max = 10; study 2b: M = 6.58, SD = 2.24, min = 0, max = 10). The admiration question was of a similar structure (‘group project’ element in parentheses): “*Given the conditions above, to what extent do you feel admiration towards the auto mechanic (student)?*”, ranging from “Complete disdain” (0 value) to “Neutral” (50 value) to “Complete admiration” (100 value) with a “Don’t know” option at the end of the scale (study 2a: M = 5.92, SD = 2.34, min = 0, max = 10; study 2b: M = 6.25, SD = 2.13, min = 0, max = 10). All three scales were then divided by 10 to produce variables ranging from 0 to 10.[51]

Analytic Strategy. To explore if and how gratitude and admiration mediate the relationship between perceived motivations and trust, I employed “1 – 1 – 1” multilevel mixed-effects multiple mediator models with random intercepts and fixed slopes in which lower level mediation (i.e., gratitude and admiration) of lower level effects (i.e., perceived motivations and trust) takes place (Bauer et al. 2006; Hayes 2013; Kenny et al. 2003).

The level-1 (or within-level) mediation model of gratitude (M_G) from perceived

[51] Responses consisting of “don’t know” were excluded from the analysis (‘car repair’ scenario: trust = 2 responses, gratitude = 21 responses, admiration = 28 responses; ‘group project’ scenario: trust = 1 response, gratitude = 36 responses, admiration = 48 responses).

motivations (X_G), admiration (M_A) from perceived motivations (X_A), and trust (Y) from gratitude (M_G), admiration (M_A), and perceived motivations (X) was modeled as follows:

$$\begin{aligned} M_{G_{ij}} &= d_{M_{Gj}} + a_G X_{G_{ij}} + e_{M_{Gij}} \\ M_{A_{ij}} &= d_{M_{Aj}} + a_A X_{A_{ij}} + e_{M_{Aij}} \\ Y_{ij} &= d_{Y_j} + b_G M_{G_{ij}} + b_A M_{A_{ij}} + c' X_{ij} + e_{Y_{ij}} \end{aligned} \tag{6.1}$$

where $M_{G_{ij}}$, $M_{A_{ij}}$, and Y_{ij} are gratitude, admiration, and trust, respectively, in the *i*th vignette for the *j*th individual. The terms $e_{M_{Gij}}$, $e_{M_{Aij}}$, and $e_{Y_{ij}}$ are level-1 disturbances for M_G, M_A, and Y, respectively, assumed i.i.d normal. The intercepts for M_G, M_A, and Y are designated $d_{M_{Gj}}$, $d_{M_{Aj}}$, and d_{Y_j}, respectively, the effect of X on M_G and M_A is designated a_G and a_A, respectively, the effects of M_G and M_A on Y are designated b_G and b_A, and the direct effect of X on Y is designated c'.

I specify a level-2 equation to model the random intercepts $d_{M_{Gj}}$, $d_{M_{Aj}}$, and d_{Y_j} (from equation 6.1) according to the following:

$$\begin{aligned} d_{M_{Gj}} &= d_{M_G} + u_{d_{MGj}} \\ d_{M_{Aj}} &= d_{M_A} + u_{d_{MAj}} \\ d_{Y_j} &= d_Y + u_{d_{Yj}} \end{aligned} \tag{6.2}$$

where d_{M_G}, d_{M_A}, and d_Y are population intercepts for M_G, M_A, and Y, respectively, and $u_{d_{MGj}}$, $u_{d_{MAj}}$, and $u_{d_{Yj}}$ are random disturbances assumed normally distributed for d_{M_G}, d_{M_A}, and d_Y, respectively. According to equation 6.2, I have fixed the slopes for all level-1 effects as models failed to converge when all lower level slopes were allowed to vary randomly between individuals around a common average.

All modeling procedures were implemented in Stata 13.1 with the generalized structural equation model estimation package. See Figure 6.5 for a conceptual path diagram of the model specified above.

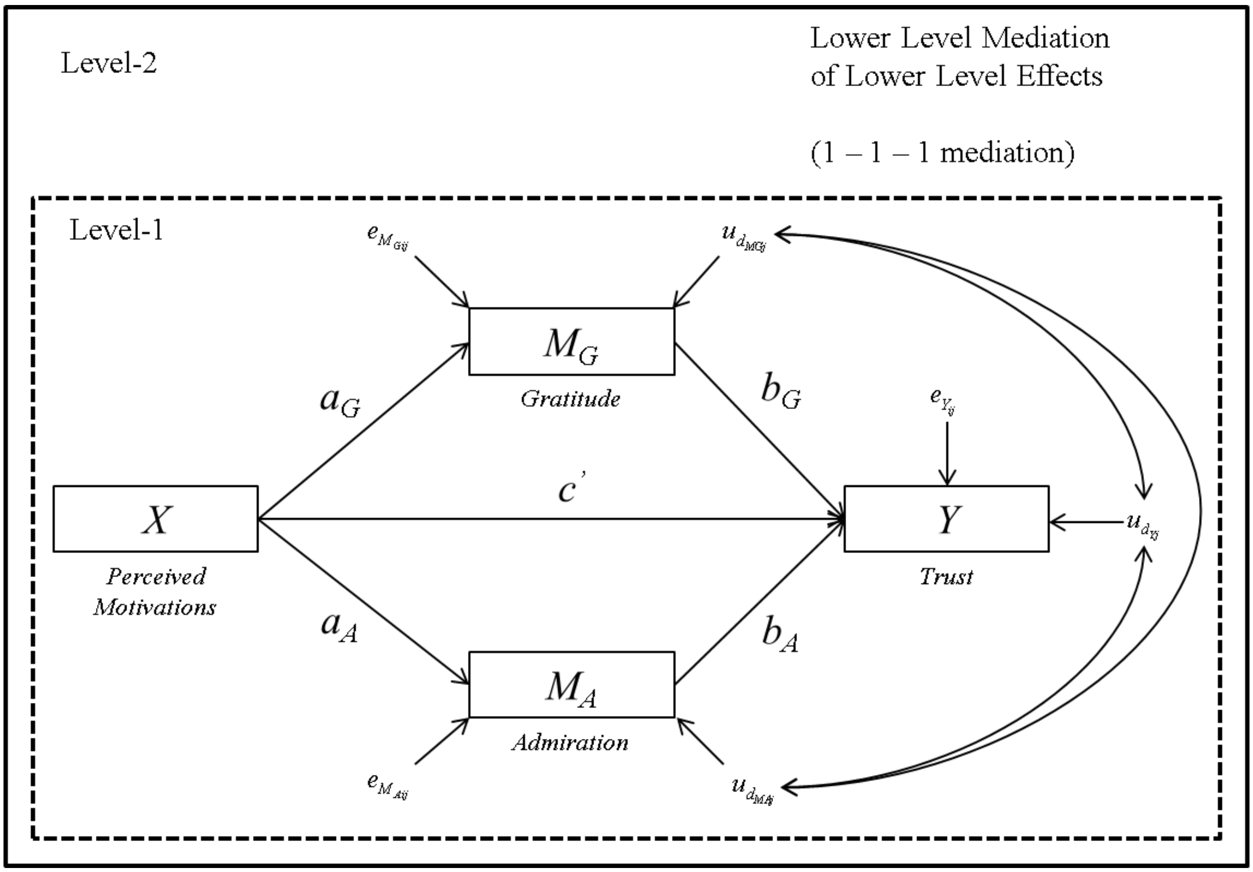

Figure 6.5. Path diagram for two-level mixed-effects multiple mediator model with correlated random intercepts and fixed slopes. Other exogenous dimensions are included but not shown.

Results

Table 6.3 replicates models from studies 1a and 1b investigating the main effects of perceived motivations on trust (i.e., hypotheses 7-11). As expected, results of studies 2a and 2b paralleled many of the main effects detected in studies 1a and 1b with a few exceptions: first, slightly larger intra-class correlation coefficients (study 2a = .16, study 2b = .21) and random intercepts (study 2a = 0.98, study 2b =1.04) were observed in a null model (not shown); second, statistically insignificant coefficients for the non-binding contract level for both study 2a (*b* = -

0.03, *s.e.* = 0.06, $p > .10$) and study 2b ($b = 0.04$, *s.e.* = 0.05, $p > .10$) were found; and, third, a statistically insignificant difference between the prior interaction level and the encapsulated interests level for study 2a ($p > .10$) but not for study 2b ($p < .02$) was discovered.

Table 6.3. Two-Level Mixed-Effects Models of Relational Trust with Random Intercepts and Fixed Slopes, Studies 2a and 2b

	Model 1	Model 2
	Car Repair	Group Project
No prior interaction (ref.)		
Uncooperative	-2.38*** (.08)	-2.24*** (.07)
Prior interaction	1.23*** (.08)	1.08*** (.07)
Encapsulated interests	1.30*** (.08)	1.26*** (.07)
Goodwill	2.06*** (.08)	1.62*** (.07)
Virtuous disposition	1.87*** (.08)	1.61*** (.07)
No contract (ref.)		
Non-binding contract	-.03 (.06)	.04 (.05)
Binding contract	.65*** (.06)	.32*** (.05)
No regulation (ref.)		
Non-monetary regulation	.57*** (.06)	.19*** (.05)
Monetary regulation	.74*** (.06)	.43*** (.05)
Constant	5.15*** (.13)	6.83*** (.11)
var(u_{0j})	1.10*** (.09)	.97*** (.08)
var(e_{ij})	2.31*** (.09)	1.77*** (.04)
Other dimensions	Yes	Yes
Observations	4887	4678
Individuals	493	474

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (two-tailed)
Note: (standard errors in parentheses)
Model 1 = Study 2a 'car repair' scenario
Model 2 = Study 2b 'group project' scenario

Table 6.4 shows results for "1 – 1 – 1" multilevel mixed-effects multiple mediator models with random intercepts and fixed slopes outlined in the *Analytic Strategy* section and Figure 6.5, where gratitude (M_G) and admiration (M_A) mediate the effects of perceived motivation (X) on trust (Y). Following studies 1a and 1b, both models included dummy variables for all dimensions and a fixed slope for vignette number (*vignette*). Model 1 provides results of the multilevel mediation analysis for study 2a. Statistical significance was achieved for all random intercepts as well as their respective covariances. Regarding the latter, the random intercepts for M_G and M_A positively covaried ($\mathrm{Cov}(u_{d_{MGj}}, u_{d_{MAj}}) = 1.45$, $p < .001$), meaning that individuals with high intercepts for gratitude also had high intercepts for admiration. Conversely, the random intercepts for M_G and M_A both negatively covaried with the random intercept for Y ($\mathrm{Cov}(u_{d_{MGj}}, u_{d_{Yj}}) = -.10$, $p < .05$; $\mathrm{Cov}(u_{d_{MAj}}, u_{d_{Yj}}) = -0.21$, $p < .001$, respectively). That is, individuals with high intercepts for trust had lower intercepts for gratitude and admiration.

When predicting gratitude, any intentional and voluntary act that benefited a respondent increased the participant's experienced gratitude toward the beneficiary (see the statistically significant and positive effects for prior interaction, encapsulated interests, goodwill, and virtuous dispositions on gratitude). But the effect of motivations perceived as benevolent (goodwill level) and altruistic (virtuous dispositions level) on gratitude were stronger than motivations perceived as instrumental (encapsulated interests level). These results support the prediction that encapsulated interests increase gratitude (hypothesis 13), and that goodwill and virtuous dispositions increase gratitude to a greater extent than encapsulated interests (hypothesis 14). Unexpectedly, the coefficient for goodwill was statistically larger than the virtuous dispositions coefficient ($p < .001$), and the various operationalizations of social constraints generated roughly similar—albeit substantively minor—amounts of gratitude.

Table 6.4. Two-Level Mixed-Effects "1-1-1" Multiple Mediator Models of Relational Trust with Random Intercepts and Fixed Slopes, Studies 2a and 2b

	Model 1			Model 2		
	Gratitude	Admiration	Trust	Gratitude	Admiration	Trust
Gratitude			.53*** (.02)			.40*** (.02)
Admiration			.25*** (.02)			.22*** (.02)
No prior interaction (ref.)						
Uncooperative	-2.15*** (.08)	-1.97*** (.08)	-.76*** (.06)	-1.43*** (.07)	-1.32*** (.07)	-1.37*** (.06)
Prior interaction	.84*** (.08)	.70*** (.08)	.62*** (.06)	.75*** (.07)	.70*** (.07)	.62*** (.06)
Encapsulated interests	.93*** (.08)	.77*** (.08)	.63*** (.06)	.99*** (.08)	.91*** (.07)	.65*** (.06)
Goodwill	2.18*** (.08)	1.77*** (.08)	.48*** (.06)	2.05*** (.08)	1.62*** (.07)	.43*** (.06)
Virtuous disposition	1.90*** (.08)	1.78*** (.08)	.43*** (.06)	1.74*** (.07)	1.55*** (.07)	.55*** (.06)
No contract (ref.)						
Non-binding contract	.02 (.05)	-.03 (.05)	-.03 (.04)	.05 (.05)	.03 (.05)	.01 (.04)
Binding contract	.30*** (.05)	.24*** (.05)	.43*** (.04)	.14** (.05)	.16** (.05)	.23*** (.04)
No regulation (ref.)						
Non-monetary regulation	.31*** (.05)	.34*** (.05)	.32*** (.04)	.13* (.05)	.13** (.05)	.11** (.04)
Monetary regulation	.35*** (.05)	.36*** (.05)	.47*** (.04)	.17** (.05)	.18*** (.05)	.32*** (.04)
Constant	5.13*** (.13)	4.80*** (.13)	1.24*** (.11)	5.89*** (.12)	5.52*** (.12)	3.22*** (.12)
var($u_{d_{MGj}}$)	1.45*** (.11)			1.23*** (.09)		
var($e_{M_{Gij}}$)	2.20*** (.05)			2.00*** (.04)		
var($u_{d_{MAj}}$)		1.51*** (.11)			1.37*** (.10)	
var($e_{M_{Aij}}$)		2.16*** (.05)			1.74*** (.04)	
var($u_{d_{Yj}}$)			.48*** (.04)			.65*** (.05)
var($e_{Y_{ij}}$)			1.12*** (.02)			1.13*** (.02)
cov($u_{d_{MGj}}$, $u_{d_{MAj}}$)		1.45*** (.10)			1.25*** (.09)	
cov($u_{d_{MGj}}$, $u_{d_{Yj}}$)		-.10* (.05)			-.09† (.05)	

cov($u_{d_{MAj}}$, $u_{d_{Yj}}$)	-.21*** (.05)	-.18** (.05)
Other dimensions	Yes	Yes
Observations	4887	4680
Individuals	493	474

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed)

Note: (standard errors in parentheses)

Model 1 = Study 2a 'car repair' scenario

Model 2 = Study 2b 'group project' scenario

With respect to admiration, comparable effects were observed except for a similarity between the effects of goodwill and virtuous dispositions. According to hypothesis 9 and the other-praising emotions literature, displays of virtue should elicit greater feelings of awe and admiration than simple displays of goodwill (Immordino-Yang et al. 2009), but this is not what was observed. With respect to trust, gratitude and admiration yielded statistically significant and positive effects (see hypothesis 16), and, as hypothesis 17 predicted, the effect of gratitude (b = 0.53) was greater than the effect of admiration (b = 0.25). Applying these results to the theoretical path model we can see, then, that gratitude (M_G) and admiration (M_A) partially mediate the effects of perceived motivations (X) on trust (Y).[52]

Observed coefficients for the indirect effects (i.e., ab) and normal theory standard errors are presented in Table 6.5.[53] Model 1 provides indirect effects by gratitude and admiration for study 2a (see model 1, Table 6.3). As can be seen, the indirect effects for all types of perceived motivations (X) on trust (Y) through gratitude (M_G) and admiration (M_A) were statistically different from zero except for non-binding contracts. As expected, gratitude and admiration mediated expressive motivations to a greater extent than either instrumental or external motivations. Take, for instance, the indirect and total effects of goodwill ($a_G b_G$ = 1.15, $a_A b_A$ = 0.44, total effect = 2.06), encapsulated interests ($a_G b_G$ = 0.49, $a_A b_A$ = 0.19, total effect = 1.30), and monetary regulations ($a_G b_G$ = 0.18, $a_A b_A$ = 0.09, total effect = 0.74). The indirect effects for goodwill were greater than—and accounted for more of the total effect than—encapsulated interests, which, in turn, were greater than monetary regulations.

[52] To further support the mediating effect of gratitude and admiration, the individual-level control variables outlined in chapter 5 (and the chapter 5 appendices) did not confound the observed relationships between other-praising emotions (i.e., gratitude and admiration) and relational trust when included in equation 6.1 as individual-covariates for Y_{ij}, M_{Gij}, and M_{Aij}.
[53] I also explored bias-corrected bootstrap confidence intervals based on 100 bootstrap samples (Hayes 2013). The results indicated that the choice between the normal theory approach and bootstrap confidence intervals was inconsequential in terms of the conclusions reached. This is to be expected given the sample sizes at both levels.

Although coefficient sizes differed to some extent in study 2b (i.e., 'group project' scenario), all substantive findings were the same as study 2a, the 'car repair' scenario (see model 2 in Tables 6.3, 6.4, and 6.5). In other words, the hypothesized links between perceived motivations, other-praising emotions, and trust were robust to alternative exchange conditions and out-of-sample tests.

Table 6.5. Inferences for the Indirect Effects of Perceived Motivations on Relational Trust through Gratitude and Admiration

	Model 1	Model 2
	ab	*ab*
Gratitude		
Uncooperative	-1.13*** (.06)	-.58*** (.04)
Prior interaction	.44*** (.04)	.30*** (.03)
Encapsulated interests	.49*** (.04)	.40*** (.04)
Goodwill	1.15*** (.06)	.83*** (.05)
Virtuous disposition	1.01*** (.05)	.70*** (.04)
Non-binding contract	.01 (.03)	.02 (.02)
Binding contract	.16*** (.03)	.06** (.02)
Non-monetary regulation	.16*** (.03)	.05* (.02)
Monetary regulation	.18*** (.03)	.07** (.02)
Admiration		
Uncooperative	-.49*** (.04)	-.30*** (.03)
Prior interaction	.17*** (.02)	.16*** (.02)
Encapsulated interests	.19*** (.03)	.20*** (.02)
Goodwill	.44*** (.04)	.36*** (.03)
Virtuous disposition	.44*** (.04)	.35*** (.03)
Non-binding contract	-.01 (.01)	.01 (.01)
Binding contract	.06*** (.01)	.04** (.01)
Non-monetary regulation	.08*** (.01)	.03** (.01)
Monetary regulation	.09*** (.02)	.04*** (.01)

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (two-tailed)

Note: (normal theory approach standard errors in parentheses), *ab* = indirect effect.

Discussion

The findings from studies 2a and 2b support the idea that perceived expressive motivations produce greater trust than perceived instrumental motivations and do so by triggering other-praising emotions in the form of gratitude and admiration. In general, I found that other-praising emotions resulted from all types of perceived motivation (with the exception of non-binding contracts), but that some forms of commitment were stronger in their effects than others: social constraints produced the least gratitude and admiration, goodwill and virtuous dispositions produced the most, and encapsulated interests fell somewhere in-between. In turn, feeling both gratitude and admiration increased trust toward the trustee, but I found the positive effect of gratitude to be greater than that of admiration. Identification of other-praising emotions as a mechanism helps clarify, beyond rational choice arguments of risk reduction or principles of maximization, why trust is greatest when perceived motivations are expressive in nature.

Interestingly, there was an observed difference between the positive effects of goodwill and virtuous dispositions on gratitude (but not admiration) in both scenarios, with the effect of goodwill greater than the effect of virtuous dispositions. One explanation for this finding concerns the relational *and* dyadic nature of goodwill and gratitude: goodwill is the extent to which a trustee cares for and is concerned about the interests of a truster, while gratitude is a positive emotional reaction to the benefits received from others. In both instances, the truster is the sole beneficiary of another’s actions. Virtuous dispositions, on the other hand, are the extent to which a trustee cares for and is concerned about the interests of everyone. This subtle distinction—commitment only to A as opposed to commitment to A,…, Z—appears to trigger what I call a *self-serving beneficiary effect*, where gratitude—an other-praising emotion concerned with the self—is greatest when one is the sole recipient of another’s benevolence and generosity. Any extension of this generosity beyond the self, denigrates the gratitude one experiences. This self-serving beneficiary effect and its relationship to trust warrant future investigations and research.

General Discussion

Trust is a vital component of social life in the same way that carbon is an essential element of biological life. Like carbon, trust is a basis for the chemistry of groups, organizations, and networks: it preserves interpersonal relationships, facilitates collective action, spurs economic growth, and stabilizes political institutions. Unlike carbon, trust can grow and develop through time given the right conditions. What these conditions are and how they manufacture trust, however, remain empirically unresolved. In this chapter, I analyze which forms of trustworthiness promote the emergence of trust, explore what conditions moderate these effects, and investigate whether affect-based mechanisms link trustworthiness to trust.

My results provide convincing evidence that trust can originate from alternative forms of trustworthiness that are ontologically different, but that some types of trustworthiness are more potent than others and that other-praising emotions as well as causal attributions account for these differences. Studies 1a and 1b confirmed these effects in two web-based experiments of a simulated ‘car repair’ and ‘group project’ scenario, respectively, showing how perceived *expressive* motivations of a trustee—goodwill and virtuous dispositions—produced equivalent levels of trust that were greater than perceived *instrumental* motivations—encapsulated interests and social constraints. Furthermore, trustworthiness stemming from factors *internal* to an exchange relationship—goodwill, virtuous dispositions and encapsulated interests—produced greater trust than trustworthiness stemming from factors *external* to an exchange relationship—social constraints. Studies 1a and 1b also demonstrated that social constraints, such as binding contracts and monetary regulations, increased trust to the extent that individuals attributed another’s trustworthiness to the situation, although trust was greatest when individuals attributed another’s trustworthiness to internal motivations. Studies 2a and 2b replicated these findings and investigated whether affect-based mechanisms account for the observed causal relationships. In particular, I found that (a) other-praising emotions—gratitude and admiration—partially mediated the relationship between perceived motivations and trust, (b) that these mediating effects were stronger for perceived *expressive* motivations than for perceived *instrumental* motivations, and (c) that the direct effect of gratitude on trust was greater than the direct effect of admiration.

Beyond contributing to our understanding of how trustworthiness produces trust, the results also offer insight into the operation of trust in modern society. Here I found evidence for the trust enhancing effects of expressive and instrumental motivations, where expressive motivations, on average, produced greater trust than instrumental motivations. In spite of these differences, instrumental motivations should not be interpreted as inconsequential for the development of trust. In fact, instrumental forms of commitment undergird the myriad truster-trustee relationships we experience in modern society (Hardin 2002; Farrell 2009): our day-to-day lives might consist of a hundred interactions with people for whom we know nothing about beyond publicly imposed social constraints, a handful of exchanges with people whose interests encapsulate our own, and a few relations where genuine care and concern are at the heart of the relationship. Additionally, research and theory suggests that transactions with instrumental value founded on mutual dependence and power balance can evolve into exchange relationships with expressive value established on mutual goodwill and benevolence (Lawler and Yoon 1993). In short, the utilitarian value of benefits is critical for the maintenance of interpersonal relations across communities and societies, and, under some conditions, can result in a relation becoming a valued object in itself that elicits great amounts of trust (Lawler et al. 2008). Although instrumental motivations ultimately produce less trust than expressive motivations, the present research shows how and why this is the case: by triggering weaker feelings of gratitude and admiration.

The current study also addresses issues of conceptualization found in the trust literature. Some scholars conceptualize trust as a fixed and moralistic characteristic of individuals based on intrinsic motivations to treat everyone as if they were trustworthy as well as optimistic expectations about the benevolence and goodwill of strangers (Seligman 1997; Mansbridge 1999; Uslaner 2002). At the same time, other scholars have been quite skeptical of this approach (Cook et al. 2005; Farrell 2009; Hardin 2002), promoting trust as a cognitive-relational concept centered on prior interactions, perceived motivations, and expectations of future behavior.

As Seneca wrote in his *Moral Letters to Lucilius*, “It’s a vice to trust all, and equally a vice to trust none.” This classic statement about the perils of trust—which frames trust not as moralistic and unconditional but as cognitive and relational—exemplifies the crux of my findings. Across all four experiments, average levels of trust hovered nearby or slightly above the middle value of “neither trust nor distrust”, with some between-person variation around this mean, producing a few “high trusters” and a few “low trusters” (Yamagishi and Yamagishi 1994). Overall, however, the majority of observed variation in trust occurred within individuals, or as characteristics of the situation and conditions of the exchange relationship evolved from vignette to vignette. In spite of this, anywhere from nine to twenty-one percent of the variation in trust—depending on the experiment—was a product of person-level characteristics, with some of this variation accounted for by general social trust, particular social trust, and social preferences (see Chapter 5). Regardless, my findings support the notion that trust is a cognitive-relational structure largely influenced by features of the situation and the exchange relationship as well as characteristics of a trustee.

The present chapter is also significant as many of the findings were highly robust, emerging across studies with varying participant samples (MTurk workers and undergraduate students), sampling methods (purposive and random sampling), experimental contexts (car repair and group project scenarios), and moderating and mediating variables (causal attributions and other-praising emotions). Such empirical consistency is important in light of current trends in social psychology. Recent publications in the social sciences (Murayama, Pekrun, and Fiedler 2013) and medical sciences (Ioannidis 2005) have called for the collection of large (random) samples and the replication of studies within a single manuscript to reduce false-positive findings (see also Begley and Ellis 2012; Simmons, Nelson and Simonsohn 2011). By creating two distinct vignette experiments and fielding these experiments in two separate populations, possible false-positive relationships between perceived motivations, causal attributions, and other-praising emotions were significantly—if not entirely—nullified.

Despite the complementary findings and consistency of results across samples and simulated scenarios, the current research is not without limitations. An outstanding criticism concerns the simulated nature of the dimensions and their impact on experienced emotion. According to the other-praising emotions literature, displays of virtue should incite feelings of awe and admiration (Immordino-Yang et al. 2009), which is what I observed. But I did not observe a difference between acts of goodwill and acts of virtue, where a difference was expected to emerge. It could be that simulated and hypothetical acts of virtue are unable to generate the awe and elevation found with real-life acts of generalized altruism (Collett and Childs 2011), which might account for the similar effects goodwill and virtuous dispositions exert on trust where, in reality, virtuous dispositions may have a greater effect than goodwill. In spite of these issues, relational theories of trust (e.g., Hardin 2002; Cook et al. 2005) suggest that goodwill should, in fact, produce greater trust than virtuous dispositions:

> "If A's trustworthiness is grounded in a fixed moral commitment or psychological disposition, why should A rightly be trusted by some and distrusted by others? We can make easy sense of such differences only if we assume that *trust is relational: trust turns on specific interactions within specific relationships*. A is trustworthy to us because she has an ongoing relationship with us that grounds her trustworthiness toward us. She is untrustworthy to you because she does not have such a relationship with you or because she has other interests that trump her maintenance of a cooperative relationship with you (Cook et al. 2005: 193)."

Moreover, as with any research based on simulations and hypothetical situations, complementary studies should be conducted where tangible behavioral causes and consequences are manipulated, controlled, and observed. Yet, humans are surprisingly adept at experiencing emotional reactions though imagination and simulation (Phelps 2006), and I would expect a similar effect with the simulated dimensions administered here. Taken together, it is likely that the other-praising emotions observed, and the trust produced by said emotions, are valid, although more neural and behavioral research is obviously required.

Finally, multilevel mediation models revealed other-praising emotions as plausible mechanisms connecting perceived motivations to trust. In spite of this novel finding, the statistical models—much like other mediation models published in the social sciences—are biased in one key respect: the proposed mechanisms (gratitude and admiration) are endogenous to each other and to the outcome variable (trust). For instance, I theoretically expected gratitude to mediate the relationship between goodwill and trust. But since gratitude was neither randomly assigned nor experimentally manipulated, it is impossible to determine the true causal direction between gratitude and trust or to identify whether an unobserved variable might have partially or fully accounted for their observed relationship with the present design. As a result, future research should explore instrumental variables capable of identifying the causal relationship between other-praising emotions and trust. Although difficult, such an endeavor is not impossible. Research suggests that oxytocin—a neuropeptide known for its effects on pro-social behavior—is central to the development of both gratitude (Algoe and Way 2014) and trust (Kosfeld et al. 2005). By treating oxytocin as an instrument for gratitude (i.e., manipulating levels of oxytocin in a person's body with nasal injections), future researchers would be able to disentangle the true causal effect of gratitude on trust.

Conclusion

The present research adjudicates between classic views of trust and trustworthiness, and shows how different types of commitment—moderated by causal attributions and mediated by other-praising emotions—produce different levels of trust. These findings have important implications for trust research and theory. If the sources of trust are largely relational and situational, then future research should move away from measures of social trust found in the General Social Survey and the World Values Survey concerned with generalized others or ambiguous matters for which trust is placed. At the same time, it would serve future sociological theory to broaden its scope and include alternative sources of trust, including expressive *and* instrumental motivations as well as factors external to *and* internal to exchange relationships. In terms of practical implications, perhaps the most successful way to improve trust is to foster exchanges of mutual dependence marked by prolonged 'shadows of the future'. In this case, the basic conditions for encapsulated interests are met, which sets the stage for other-praising emotions, trust, and future exchange relationships based on goodwill and benevolence to develop.

CHAPTER 6: APPENDIX

Table 6.A.1. Two-Level Mixed-Effects Models of Relational Trust with Random Intercepts and Fixed Slopes, Studies 1a and 1b

	Model 1	Model 2
	Car Repair	Group Project
No prior interaction (ref.)		
Uncooperative	-2.73*** (.05)	-2.11*** (.05)
Prior interaction	1.17*** (.05)	1.20*** (.05)
Encapsulated interests	1.40*** (.05)	1.35*** (.05)
Goodwill	2.18*** (.05)	1.69*** (.05)
Virtuous disposition	2.11*** (.05)	1.72*** (.05)
No contract (ref.)		
Non-binding contract	-.03 (.04)	.09** (.03)
Binding contract	.61*** (.04)	.38*** (.03)
No regulation (ref.)		
Non-monetary regulation	.56*** (.04)	.24*** (.03)
Monetary regulation	.74*** (.04)	.54*** (.03)
Constant	4.99*** (.08)	6.45*** (.07)
var(u_{0j})	.84*** (.05)	.80*** (.04)
var(e_{ij})	2.94*** (.04)	2.13*** (.03)
Other dimensions	Yes	Yes
Observations	12794	13177
Individuals	1276	1322

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed)

Note: includes failed screeners (standard errors in parentheses)

Model 1 = Study 1a 'car repair' scenario

Model 2 = Study 1b 'group project' scenario

Table 6.A.2. Two-Level Mixed-Effects Moderation Models of Relational Trust with Random Intercepts and Fixed Slopes, Studies 1a and 1b

	Model 1	Model 2
	Car Repair	Group Project
No contract (ref.)		
Non-binding contract	-.04 (.10)	.16† (.10)
Binding contract	1.04*** (.10)	.81*** (.09)
No regulation (ref.)		
Non-monetary regulation	1.01*** (.10)	.39*** (.10)
Monetary regulation	1.48*** (.10)	1.18*** (.09)
Causal attributions	.19*** (.02)	.15*** (.01)
Non-binding X attributions	.01 (.02)	-.01 (.01)
Binding X attributions	-.07*** (.02)	-.06*** (.01)
Non-monetary X attributions	-.08*** (.02)	-.01 (.01)
Monetary X attributions	-.13*** (.02)	-.09*** (.01)
Constant	3.94*** (.12)	5.55*** (.12)
var(u_{0j})	.81*** (.04)	.73*** (.04)
var(e_{ij})	2.89*** (.04)	1.98*** (.03)
Other dimensions	Yes	Yes
Observations	12691	13158
Individuals	1276	1322

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed)

Note: includes failed screeners (standard errors in parentheses)

Model 1 = Study 1a 'car repair' scenario

Model 2 = Study 1b 'group project' scenario

Table 6.A.3. Two-Level Mixed-Effects Models of Relational Trust with Random Intercepts and Fixed Slopes, Studies 2a and 2b

	Model 1	Model 2
	Car Repair	Group Project
No prior interaction (ref.)		
Uncooperative	-2.17*** (.06)	-1.95*** (.06)
Prior interaction	1.05*** (.06)	.95*** (.06)
Encapsulated interests	1.12*** (.06)	1.11*** (.06)
Goodwill	1.80*** (.06)	1.49*** (.06)
Virtuous disposition	1.66*** (.06)	1.43*** (.06)
No contract (ref.)		
Non-binding contract	-.04 (.05)	.05 (.04)
Binding contract	.62*** (.05)	.30*** (.04)
No regulation (ref.)		
Non-monetary regulation	.56*** (.05)	.19*** (.04)
Monetary regulation	.73*** (.05)	.42*** (.04)
Constant	5.21*** (.10)	6.69*** (.09)
var(u_{0j})	1.17*** (.07)	1.27*** (.07)
var(e_{ij})	2.65*** (.04)	2.01*** (.03)
Other dimensions	Yes	Yes
Observations	8742	8306
Individuals	884	841

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (two-tailed)

Note: includes failed screeners (standard errors in parentheses)

Model 1 = Study 2a 'car repair' scenario

Model 2 = Study 2b 'group project' scenario

Table 6.A.4. Two-Level Mixed-Effects "1-1-1" Multiple Mediator Models of Relational Trust with Random Intercepts and Fixed Slopes, Studies 2a and 2b

	Model 1			Model 2		
	Gratitude	Admiration	Trust	Gratitude	Admiration	Trust
Gratitude			.49*** (.01)			.44*** (.01)
Admiration			.32*** (.01)			.26*** (.01)
No prior interaction (ref.)						
Uncooperative	-1.94*** (.06)	-1.85*** (.06)	-.61*** (.04)	-1.26*** (.06)	-1.18*** (.06)	-1.09*** (.04)
Prior interaction	.74*** (.06)	.62*** (.06)	.49*** (.04)	.64*** (.06)	.61*** (.05)	.51*** (.04)
Encapsulated interests	.84*** (.06)	.70*** (.06)	.48*** (.04)	.87*** (.06)	.80*** (.05)	.52*** (.04)
Goodwill	1.93*** (.06)	1.63*** (.06)	.32*** (.04)	1.81*** (.06)	1.44*** (.06)	.32*** (.05)
Virtuous disposition	1.72*** (.06)	1.58*** (.06)	.30*** (.04)	1.49*** (.06)	1.33*** (.05)	.43*** (.05)
No contract (ref.)						
Non-binding contract	-.02 (.04)	-.01 (.04)	-.02 (.03)	.04 (.04)	.05 (.04)	.03 (.03)
Binding contract	.31*** (.04)	.28*** (.04)	.38*** (.03)	.08* (.04)	.15*** (.04)	.23*** (.03)
No regulation (ref.)						
Non-monetary regulation	.32*** (.04)	.34*** (.04)	.30*** (.03)	.08* (.04)	.09* (.04)	.13*** (.03)
Monetary regulation	.35*** (.04)	.37*** (.04)	.43*** (.03)	.16*** (.04)	.19*** (.04)	.30*** (.03)
Constant	5.20*** (.10)	4.87*** (.10)	1.07*** (.08)	5.88*** (.09)	5.54*** (.09)	2.69*** (.09)
var($u_{d_{MGj}}$)	1.38*** (.08)			1.43*** (.08)		
var($e_{M_{Gij}}$)	2.51*** (.04)			2.13*** (.03)		
var($u_{d_{MAj}}$)		1.44*** (.08)			1.53*** (.08)	
var($e_{M_{Aij}}$)		2.47*** (.04)			1.92*** (.03)	
var($u_{d_{Yj}}$)			.67*** (.07)			.78*** (.04)
var($e_{Y_{ij}}$)			1.17*** (.02)			1.14*** (.02)

cov($u_{d_{MGj}}$, $u_{d_{MAj}}$)	Constrained to zero	1.43*** (.08)
cov($u_{d_{MGj}}$, $u_{d_{Yj}}$)	.33*** (.07)	-.10* (.04)
cov($u_{d_{MAj}}$, $u_{d_{Yj}}$)	-.50*** (.07)	-.19*** (.05)
Other dimensions	Yes	Yes
Observations	8742	8306
Individuals	884	841

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed)

Note: includes failed screeners (standard errors in parentheses). To aid convergence, the covariance between ($u_{d_{MGj}}$, $u_{d_{MAj}}$) was constrained to zero.

Model 1 = Study 2a 'car repair' scenario

Model 2 = Study 2b 'group project' scenario

CHAPTER 7 – STATUS CHARACTERISTICS, SOCIAL IDENTITIES, HALO EFFECTS, AND OTHER QUESTIONS OF SOCIOLOGICAL INTEREST

In previous chapters, I investigated the institutional origins of general social trust (Chapter 4), I explored the impact of social trust on relational trust (Chapter 5), and I dissected how perceived motivations, causal attributions, and other-praising emotions produce relational trust (Chapter 6). In the present chapter, I test the remaining hypotheses outlined in Chapter 3 but also compare and contrast the effect sizes of all hypothesized vignette dimensions and individual-level covariates on relational trust. In doing so, my hope is to paint a broad picture concerning the origins of trust and to determine which origins have the greatest impact. To accomplish this task, I will first revisit many of the hypotheses outlined in Chapter 3.

The proposed origins of trust found in the literature generally fall within four major areas: (i) those concerned with characteristics of A, the truster; (ii) those concerned with characteristics of B, the trustee; (iii) those concerned with the characteristics of the A-B exchange relationship; and (iv) those concerned with characteristics of social forces beyond, or external to, the A-B exchange relationship.

Characteristics of the Truster. The social sciences are rife with theories proposing how trust—broadly defined—stems in part from the characteristics of a truster. For instance, general social trust—the most widely studied form of trust in the literature—is said to spring from a person's immigrant or foreign born status (Leigh 2006), race (Smith 2010), gender (Alesina and La Ferrara 2002), socioeconomic status (Paxton 2007), or personality traits (Bauer and Freitag 2013) to name a few. Central to this literature is the notion that trust can emerge without any reference to a trustee *and* can exist in the absence of knowledge about a trustee. While these ideas were central to analyses conducted in Chapter 5, their effects on relational trust will not be evaluated in the present chapter. I will, however, assess their effect sizes in relation to other variables and dimensions of interest.

Characteristics of the Trustee. Several models in the literature argue that trust is not only a function of a truster's characteristics, but also a trustee's. Although such models are numerous, the present chapter concentrates only on four. These four models were chosen as a result of their general theoretical importance and empirical support across the social sciences.

The first of these models is the status characteristics model common to sociology (Berger and Conner 1969; Berger, Cohen, and Zelditch 1972). Central to this theory is the concept of a *status characteristic*: a characteristic or attribute of an actor that has two or more states that are differentially evaluated in terms of prestige, esteem, or worth. Each state is associated with distinct performance expectations (i.e., beliefs about how an individual will perform or behave given their state of the status characteristics) that range from the *specific* (i.e., expectations about how an individual will act in a clearly defined situation) to the *general* (i.e., expectations about how an individual will act in any given situation). Diffuse status characteristics such as gender are said to invoke general expectation states, while specific status characteristics such as mathematical ability are said to invoke specific expectation states.

Recall that trust partly consists of performance expectations about a trustee's abilities and competencies (in addition to exertion and commitment), which a trustee's diffuse status characteristics should influence. To illustrate, Berger and colleagues propose that because gender—a diffuse status characteristic that activates general *and* specific expectations about performance—is traditionally correlated with prestige and status differences in a society, differential expectations exist concerning the abilities of men and women.   Although status characteristics theory is usually restricted to task-oriented groups, I expect diffuse status characteristics, like gender, to differentially impact performance expectations about B (the trustee) when B's competence with respect to matter Y produces differential rewards for A (the truster). I thus expect (i) diffuse status characteristics to yield differential levels of trust and (ii) these effects to vary by "task-relevant cues", or cues perceived to be related to B's ability to perform Y (Dovidio et al. 1988). Thus: *diffuse status characteristics yield differential levels of trust, especially when diffuse status characteristics are perceived to be task relevant* (hypothesis 22).

The second of these models builds from both status characteristics theory and my conceptualization of trust and trustworthiness. Following Mayer et al. (1995) as well as Elsbach and Elofson (2000), I explore other components of trustworthiness, namely those of competence and exertion (Deutsch 1960; Kee and Knox 1970). I argue that each of these elements informs A's beliefs about B's trustworthiness with respect to matter Y *and* that a more holistic analysis of trust should explore each of these elements instead of restricting analyses to motivations and commitments (see Hardin 2002). From this, I expect hard-work and diligence on the part of a trustee to increase trust. I also expect a trustee's specific status characteristics, such as their actual ability to perform matter Y, to increase trust. Thus: *exertion on the part of a trustee increases trust* (hypothesis 18) and *competence on the part of a trustee increases trust* (hypothesis 19).

The third of these models deals with a classic cognitive bias familiar to social psychologists. The halo effect, or halo error, is a cognitive bias in which one's beliefs, expectations, or judgments about another person's character (or behavior) with respect to a particular matter are influenced by positive impressions of that person's character (or behavior) with respect to an entirely unrelated matter or domain (Thorndike 1920). This cognitive bias occurs in numerous situations and contexts, including politics, marketing, education, and the legal system (e.g., Abikoff et al. 1993; Sigall and Ostrove 1975). For instance, seminal works on the subject have shown that individuals judge attractive people as happier and more successful in their lives than less attractive people (Dion et al. 1972), but also that individuals are more likely to be persuaded by likeable and attractive people than unlikeable and unattractive people (Chaiken 1980). It is not difficult to imagine how the attractiveness of a political candidate might trump their actual politics and directly influence voting behavior (e.g., Ronald Reagan).

In relation to trust, I expect A's positive evaluation of B with respect to matter Z to influence A's trust in B with respect to unrelated matter Y. This would suggest that a successful exchange with you in a separate exchange domain, such as successful computer repairs, would influence my trust in you with respect to a different exchange domain, such as car repairs. But, following prior work on negativity bias and the positive-negative asymmetry effect (Baumeister et al. 2001; Koenig and Jaswal 2011; Vaish et al. 2008), I expect A's negative evaluations about B with respect to matter Z to carry more weight than equally valenced positive evaluations about B with respect to matter Z when forming trust in B with respect to unrelated matter Y. In other words, the pitchfork effect on trust should be much greater than the halo effect. Thus: *positive evaluations of a trustee's trustworthiness in one exchange domain increases trust in a different exchange domain* (hypothesis 24); *negative evaluations of a trustee's trustworthiness in one exchange domain decreases trust in a different exchange domain* (hypothesis 25); and *the effect of negative evaluations on trust is greater than the effect of positive evaluations* (hypothesis 26).

The fourth and final model addresses reputational effects. Although not hypothesized in Chapter 3, reputational effects constitute a core focus of study in the trust literature and, as a result, I included a dimension for reputation in the 'car repair' and 'group project' scenarios. A *reputation* concerns a summarized history—either perfect or imperfect and biased or unbiased—of another person's transactions with respect to a specific matter or general matters. As such, a reputation can impact trust in two important respects: (i) via A's beliefs about B's interest in his or her future reputation (Hardin 2002), and or (ii) via A's beliefs about B's reputation with respect to matter Y (Buskens 1998; Buskens and Weesie 2000). The latter is at the center of the present dissertation chapter. I expect individuals to use reputational information in their assessment of another's trustworthiness. That is, information regarding successful exchanges between B (the possible trustee) and D (A's network relation) with respect to matter Y should increase A's trust in B with respect to matter Y. Thus: *a trustee's reputation increases trust* (reputation hypothesis).

Characteristics of the Truster-Trustee Relationship. The four previous models—status characteristic effects, competence and exertion effects, halo effects, and reputational effects—are primarily concerned with characteristics of a trustee. Of course elements of a truster are central to these four models. It is difficult to imagine B's diffuse status characteristic (i.e., gender) influencing trust without A's general performance expectation about gender. In other words, A's beliefs about status characteristics, A's cognitive biases, and A's knowledge about B's reputation are central to these four models. But what differentiates models concerned with characteristics of the A-B exchange relationship from all other models are the unique sociological properties that emerge from an interaction between the characteristics of A *and* the characteristics of B. Below I review one such model that has emerged as a dominant theoretical force within sociology: social identity theory.

Social identity theory is premised on the idea that individuals evaluate themselves in terms of social categories *and* distinguish themselves from other groups, collectivities, or people

(Abrams and Hogg 1990). According to this tradition, categories and groups can be (a) general (as in “American” or “Catholic”) or, as Tajfel has shown (Tajfel 1970, 1981, 1982), specific and “minimal” (as in preferences for Klee or Kandinsky paintings); (b) nested (as in “Seattleite” and “Washingtonian”); and (c) crosscutting (as in “female” and “student”). The commonality between these dimensions is that they all represent peoples’ “place in a society” (see Klandermans 2014). In other words, a person’s self-concept partially derives from their knowledge of and experiences with “places in society”. Once individuals come to identify with a salient social category (i.e., a “place in society”), they have a tendency to think in terms of similarities for in-group members and differences for out-group members (Deaux 1996). From this, individuals treat in-group members (i.e., those with whom they identify) more favorably than out-group members (Brewer and Miller 1996; Stets and Burke 2000). The implication is that (i) exchange decisions will be biased toward in-group members (Brewer and Kramer 1986; Simpson and Macy 2004), and (ii) A’s trust in B will form along salient social categories like race and gender (Brewer 1999; Brewer and Campbell 1976; Orbell, Dawes, and Schwartz-Shea 1994). Social identity theory predicts that shared membership in a salient social category, rather than status characteristics of a trustee, should bias belief formation about the trustworthiness of in-group and out-group members. Thus: *a truster and a trustee’s common membership in a salient social category increases trust to a greater extent than when a truster and a trustee belong to different social categories* (hypothesis 23).

Forces External to the Truster-Trustee Relationship. Models within this tradition highlight those forces external to A (the truster) and B (the trustee) that motivate B to take into account or care about the interests of A. Classic examples include formal institutions—such as property rights protection and constitutional law—and informal institutions—such as gender norms and fairness norms. While these ideas were central to analyses conducted in Chapters 4 and 6, their effects on relational trust will not be evaluated in the present chapter. I will, however, assess their effect sizes in relation to other variables and dimensions of interest.

Drawing on the two vignette experiments administered to Amazon.com Mechanical Turk workers and University of Washington undergraduate students in Chapters 5 and 6, I found the following. First, characteristics of a truster (i.e., general social trust and particular social trust), characteristics of a trustee (i.e., reputational effects, halo effects, and perceived competence, exertion, and commitment), and forces external to a truster-trustee exchange relationship (i.e., social constraints) fostered the development of relational trust regardless of the experiment. Second, specific status characteristics consistently produced relational trust, while diffuse status characteristics such as age and race (but not gender) impacted relational trust under certain conditions (i.e., conditions of task relevance). Third, shared membership in a diffuse category such as age, race, and gender did not consistently promote relational trust across the four experiments nor did dissasortative categorical membership (e.g., male truster and female trustee) undermine relational trust across the four experiments. Fourth, perceived motivations such as goodwill and virtuous dispositions had a greater positive impact on relational trust than any other factor. In short, the present chapter provides the first set of results comparing and contrasting the relative causal effect sizes of trust that span the individual and the situation.

Studies 1a and 1b

Method

Design and Participants. Each experiment features a 5 (Age: 20, 30, 40, 50, or 60 year old) x 4 (Race: white, black, Hispanic, or Asian) x 2 (Gender: male or female) x 4 (Reputation: no reputation or positive reputation) x 3 (Halo: blank, bad used computer, or good used computer) x 2 (Competence: blank or competent) x 2 (Exertion: blank or hard-working) x 6 (Perceived motivations: uncooperative, no prior interaction, prior interaction, encapsulated interests, goodwill, or virtuous dispositions) x 3 (Contract: blank, non-binding contract, or binding contract) x 3 (Regulation: no regulations, non-monetary regulations, or monetary regulations) multifactorial vignette design, which yields a factorial object universe of 103,680 ($2^3 \times 3^3 \times 4^2 \times 5^1 \times 6^1$) unique vignettes (Jasso 2006; Rossi and Nock 1982). One thousand two hundred and seventy-six Mechanical Turk workers completed study 1a (665 males, 593 females, 4 other gender, 14 PNS/missing; median age = 29), while one thousand three hundred and twenty-two Mechanical Turk workers completed study 1b (577 males, 722 females, 1 other gender, 22 PNS/missing; median age = 29). In both studies, workers were paid $2 for their participation. Each study consisted of a unique Mechanical Turk sample with no redundant workers across samples. Mechanical Turk workers that completed a single study from the same IP address were excluded from the analysis to minimize demand effects. Including these workers did not substantively alter the results presented in studies 1a and 1b. Overall sample size was determined by a power analysis, and my data collection stopping rule for each study consisted of reaching a target sample size of one thousand three hundred and fifty respondents.

Procedure. Participants were contacted over Amazon.com’s Mechanical Turk (MTurk) via a HIT (Human Intelligence Task) advertising $2 payment for participating in a web-based experiment. To be eligible, MTurk participants must have been legal adults residing in the U.S. with approval rates 90% or above on previous MTurk tasks. After accepting the HIT and consenting to participate in the study, participants were shown a cover sheet for a hypothetical ‘car repair’ scenario:

“You just started a new job that requires you to commute every day to work. A couple of

> days before the job starts you decide to take your car in to an automotive repair shop called The Autoshop for an oil change. In the middle of the oil change, the auto mechanic tells you about a major issue with your car's engine that will cost about $1,000 to repair, including parts and labor. You would like your car to be in working order, but you want to spend your money wisely since the amount of money required to restore the car's engine is large compared to your budget.
>
> Additionally, you have some concern: the auto mechanic might suggest fraudulent (or intentionally deceptive) services that are unnecessary and quite costly to you but beneficial to the auto mechanic. You're also concerned since the auto mechanic might provide low quality services at an exaggerated price that would require additional and costly repairs in the future. Plus, you know people who've paid for needless repairs and have had recurrent car problems because of poor quality auto-mechanic services."

Or a hypothetical 'group project' scenario:

> "You are a college student who is enrolled in a course that requires a group project assignment. Each group project involves two separate tasks, one student to analyze data and one student to write a technical report of the results. For your specific group, you were assigned the task of writing a technical report of the results, while your partner was assigned the task of analyzing the data.
>
> But you have some concern: students receive the same grade regardless of their contribution to the group project. You're also concerned since the group project is difficult to complete alone and your partner's contribution to the group project is unknown and uncertain. In other words, if your partner doesn't complete the data analysis for the group project, you might not finish in time and fail the assignment as you'll have to analyze the data without help and write a technical report of the results alone. But if you manage to analyze the data and write a technical report of the results, your partner will receive the same grade as you without having contributed to the group project. Unfortunately, you know people who have failed group projects in the past because other group members did not complete their assigned tasks."

The 'car repair' and 'group project' scenarios were constructed to maximize differences across a number of theoretically relevant parameters while maintaining congruency of dimensions between scenarios. These differences include the following (with 'car repair' versus 'group project' comparisons): bilateral versus unilateral exchange, market versus non-market exchange, tangible versus intangible resources, mutual dependence versus interdependence, and transferable versus non-transferable goods.

After this, participants were informed of how they would be assessing a series of hypothetical situations based on the initial scenario, and that each situation would end with two questions: one on relational trust and one on causal attributions. Participants were then quizzed on the respective scenarios outlined above with two of three screener questions and then shown ten vignettes randomly drawn with replacement from the vignette object universe of 103,680 unique vignettes.

After assessing the ten vignettes, participants filled out a demographic questionnaire and a series of survey questions, which included measures of general social trust, particular social trust, political trust, inequality aversion, betrayal aversion, risk aversion, trusting behavior, social value orientations, and a final screener question. Afterwards, participants were shown a debriefing statement, thanked for their participation, and paid $2. The median time to complete study 1a and 1b was 18.12 and 18.92 minutes, respectively. See Appendix C for further details about the vignettes, dimensions, and measures. Unless otherwise specified, see Chapter 5 for descriptive statistics on missing data, “don’t know”, and “prefer not to say” responses.

Vignette-Level Dependent Variables

Relational Trust and Causal Attributions. At the bottom of each vignette, participants were asked two questions. One question assessed participants’ relational trust, while the other assessed participants’ casual attributions. Both questions were structured as 11-point bipolar scales, with the relational trust question phrased as follows (‘group project’ elements in parentheses): “Given the conditions above, to what extent do you trust the auto mechanic (student) to provide justifiable and quality auto repairs (to complete the assigned data analysis task)?”, ranging from “complete distrust” (0 value) to “neither trust nor distrust” (50 value) to “complete trust” (100 value) with a “Don’t know” option at the end of the scale (study 1a: M = 6.53, SD = 2.78, min = 0, max = 10; study 1b: M = 7.51, SD = 2.28, min = 0, max = 10).

Although not investigated in the present chapter, the causal attributions question followed a similar structure (see Appendix C for further details about this question). Both scales were then divided by 10 to produce variables ranging from 0 to 10. And “don’t know” responses were treated as missing. The causes and effects of causal attribution will be explored in later chapters.

Vignette-Level Independent Variables (i.e., Dimensions)

Age, Race, and Gender. The first set of dimensions consider the Age, Race, and Gender of the hypothetical auto mechanic (‘car repair’ scenario) or student (‘group project’ scenario). For age, my goal was to not include every age possible, but plausible age ranges: nothing younger than 18 years of age and nothing older than 65 years of age. As a result, I restricted the Age dimension between 20 and 60 years of age with 10 year intervals. For Race, white, black, Hispanic, and Asian were included as these are the four most common racial categories in the U.S. For Gender, only male and female levels were included as transgender and other gender-based categories are uncommon in the U.S. These three dimensions were included to investigate whether status characteristics, social identities, or both impacted trust.

For status characteristics, I expect (i) males to produce greater trust than females, (ii) increases in age to produce increases in trust, and (iii) Asians to produce greater trust than all other races. I derive these expectations from stereotypes in American society about the association of diffuse status characteristics such as age, race, and gender with competence in general and competence in relation to specific mechanical skills such as auto maintenance and data analysis. That is, men are viewed as more competent than women with respect to mechanical skills (Nosek et al. 2009); older adults are viewed as more competent than younger adults—but this effect reverses for the elderly—with respect to mechanical skills (Cuddy, Norton, and Fiske 2005); and Asians are generally more respected for their competence in multiple domains but also for their specific competencies with respect to mechanical skills (Jackson et al. 1996). For social identity, I expect common memberships in age, race, and gender to increase trust to a greater extent than uncommon memberships. For instance, a male auto mechanic should produce greater trust for a male respondent than a female auto mechanic in the ‘car repair’ scenario. Likewise, a white student should produce greater trust for a white respondent than all other racial categories in the ‘group project’ scenario.

Reputation. The next dimension—Reputation—is drawn from Buskens (1998) and Buskens and Weesie (2000). This dimension is intended to investigate informational effects on trust and relative effect sizes. That is: Does information regarding a prior successful exchange between B (the possible trustee) and D (A’s network relation) with respect to matter Y increase A’s trust in B with respect to matter Y? And is the size of this effect greater than other dimensions of theoretical importance? To capture reputation, I follow Buskens (1998) and operationalize the Reputation dimension as ‘positive’ and ‘no’ reputation. For positive reputation in the ‘car repair’ and ‘group project’ scenarios, respectively: “Some of your friends have used the auto mechanic’s services before and they were satisfied with the work” and “Some of your friends have worked on a group project with the student before and they were satisfied with the student’s contribution”. For no reputation in the ‘car repair’ and ‘group project’ scenarios, respectively: “As far as you know, none of your friends have used the auto mechanic’s services before” and “As far as you know, none of your friends have worked on a group project with the student before”.

Halo. If you recall, the halo effect is a cognitive bias in which one’s beliefs, expectations, or judgments about another person’s character (or behavior) with respect to a particular matter are influenced by positive impressions of that person’s character (or behavior) with respect to an entirely unrelated matter or domain (Thorndike 1920). With respect to trust, I expect A's trust in B with respect to matter Y to be influenced by A's successful exchange with B in regards to a different matter Z. Thus, I operationalize the Halo effect using a dimension with three levels ('group project' scenario is parentheses): a Blank level where the respondent is shown nothing, a level for the pitchfork effect (e.g., "The auto mechanic (student) sold you a used computer before but you were dissatisfied with the computer"), and a level for the halo effect (e.g., "The auto mechanic (student) sold you a used computer before and you were satisfied with the computer"). This dimension is also intended to investigate the effects of negativity bias in the formation of trust by comparing the effect sizes of a positive stimulus (i.e., halo effect) with an equally valenced negative stimulus (i.e., pitchfork effect) (see Baumeister et al. 2001; Koenig and Jaswal 2011; Vaish et al. 2008).

Competence and Exertion. A goal of the present dissertation is to also investigate whether competence and exertion (elements of capacity and motivation, respectively) impact trust and to determine which components of trustworthiness—competence, exertion, or commitment—have the greatest impact on trust. To operationalize Competence, I use the following levels ('group project' scenario in parentheses): a Blank level where the respondent shown nothing and "[And or but], as best you can tell, is a competent machinist (data analyst)". "And" is used for the following levels in the Perceived motivations dimension: uncooperative, prior interaction, encapsulated interests, goodwill, and virtuous dispositions; "but" is used in combination with the no prior interaction level. To operationalize Exertion, I used the following levels ('group project' scenario in parentheses): a Blank level where the respondent shown nothing and "[And or but], as best you can tell, is a hard-working machinist (data analyst)". "And" is used for the following levels in the Perceived motivations dimension: uncooperative, prior interaction, encapsulated interests, goodwill, and virtuous dispositions; “but” is used in combination with the no prior interaction level. When the auto mechanic or student are both competent and hard-working, I combine the sentences: “[And or but], as best you can tell, the auto mechanic is a hard-working, competent machinist”.

Perceived Motivations. Understanding the types of motivations necessary to produce trust is central to the present dissertation. My goal is to adjudicate between social constraint views, encapsulated interest views, goodwill views, and virtuous disposition views of trust and trustworthiness. To operationalize each of these perspectives, I use a Perceived motivations dimension that consists of six levels. Each level within this dimension centers on information provided by prior interactions, builds on the previous level, and—in the case of the encapsulated interests, goodwill, and virtuous dispositions levels—imposes beliefs about the motivations of an exchange partner. The prior interactions level is included to disentangle the effect of previous exchange from the beliefs imposed by the encapsulated interest, goodwill, and virtuous dispositions levels. The goodwill and virtuous disposition levels include an additional behavior to signal regard for the truster: an act of ‘gift giving’ that, according to social exchange theory in sociology and anthropology, represents expressive motivations (Molm et al. 2007). A level for prior unsuccessful exchange, ‘uncooperative’, is included to explore the spectrum of perceived motivations. Although not hypothesized, I expect the ‘uncooperative’ level to have the greatest impact on trust since negative stimuli, all else equal, have stronger effects than equally valenced positive stimuli (Baumeister et al. 2001). The levels for the Perceived motivation dimension in the ‘car repair’ scenario are as follows:

- *No prior interaction*: “The auto mechanic has never serviced your car before”.
- *Uncooperative*: “The auto mechanic has serviced your car before but provided fraudulent and costly repairs”.

- *Prior interaction*: “The auto mechanic has serviced your car before and always provides justifiable repairs”.
- *Encapsulated interests*: “The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic is interested in your future business”.
- *Goodwill*: “The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic genuinely cares for and is concerned about your interests. You know this since the auto mechanic has repaired your car for free when you couldn’t afford the cost of repairs”.
- *Virtuous dispositions*: “The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic genuinely cares for and is concerned about the interests of all customers. You know this since the auto mechanic has repaired your car and other customers’ cars for free when customers couldn’t afford the cost of repairs”.

And the levels for the Perceived motivation dimension in the ‘group project’ scenario are as follows:

- *No prior interaction*: “The student has never worked on a group project with you before”.
- *Uncooperative*: “The student has worked on a group project with you before but failed to complete the assigned data analysis task”.
- *Prior interaction*: “The student has worked on group projects with you before and always completes the assigned data analysis task”.
- *Encapsulated interests*: “The student has worked on group projects with you before and always completes the assigned data analysis task because the student is interested in working with you as a partner on future group projects”.
- *Goodwill*: “The student has worked on group projects with you before and always completes the assigned data analysis task because the student genuinely cares for and is concerned about your interests. You know this since the student has completed your assigned task when you were too overwhelmed with other obligations and commitments to finish it yourself”.
- *Virtuous dispositions*: “The student has worked on group projects with you before and always completes the assigned data analysis task because the student genuinely cares for and is concerned about the interests of all group members. You know this since the student has completed your assigned task and tasks assigned to other group members when group members were too overwhelmed with other obligations and commitments to finish it themselves”.

Contract and Regulation. To operationalize social constraints, two separate dimensions—Contract and Regulation—consisting of three levels each were included. The levels for the Contract dimension in the ‘car repair’ scenario are as follows:

- *No contract*: Blank (i.e., participant shown nothing).
- *Non-binding contract*: “The auto mechanic verbally promises you that the repairs and new engine parts will last for at least 50,000 miles”.
- *Binding contract*: “The auto mechanic signs a limited warranty outlining how the auto mechanic will be subject to costly professional penalties if the repairs and new engine parts do not last 50,000 miles”.

The levels for the Contract dimension in the ‘group project’ scenario are as follows:

- *No contract*: Blank (i.e., participant shown nothing).
- *Non-binding contract*: “The student verbally promises you that the data analysis for the group project will be completed on time”.
- *Binding contract*: “The student signs an academic honor pledge outlining how the student will be subject to costly academic penalties if the data analysis for the group project is not completed on time”.

Conceptually, non-binding contracts, such as handshakes and verbal promises, facilitate exchange sans external enforcement. In spite of this, I employ a level for non-binding contracts to compare and contrast the effects of binding contracts. Following the recent literature on (non)monetary sanctions and trust (Chen et al. 2009; Mulder et al. 2006), I constructed the Regulation dimension in the ‘car repair’ scenario to consist of the following three levels:

- *No regulation*: “An automotive agency does not regulate services at The Autoshop”.
- *Non-monetary regulations*: “An automotive agency regulates services at The Autoshop by teaching auto mechanics who provide fraudulent services to their customers about business ethics and professional integrity”.
- *Monetary regulations*: “An automotive agency regulates services at The Autoshop by fining auto mechanics who provide fraudulent services to their customers”.

And the Regulation dimension in the ‘group project’ scenario is as follows:

- *No regulation*: “The college does not regulate contributions to group projects”.
- *Non-monetary regulations*: “The college regulates contributions to group projects by teaching students who don’t turn in their assigned tasks about academic ethics and educational integrity”.
- *Monetary regulations*: “The college regulates contributions to group projects by revoking financial aid and academic scholarships from students who don’t turn in their assigned tasks. And, as far as you know, the student receives financial aid”.

In other words, the Regulation dimension operationalizes organizational constraints that control transactions in entire exchange domains (i.e., multiple exchange relationships), whereas the Contract dimension operationalizes social constraints that emerge from and apply to specific exchange relationships. Thus, I treat the two operationalizations of social constraints—Contract and Regulation—as distinct dimensions separate from Perceived Motivations as internal motivations, such as encapsulated interests, can occur in the presence or absence of social constraints.

Individual-Level Independent Variables

Following prior research (Newton and Zmerli 2011), I used a number of survey items to measure indicators of social trust, which included dimensions for general social trust, particular social trust, and political trust.

General Social Trust. General social trust was measured using five items. The first item consisted of the classic binary trust question from the General Social Survey: “Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?” Responses included “most people can be trusted”, “need to be very careful”, and “don’t know.” The remaining four items were responses to the following question: “We'd like to ask you how much you trust people from various groups. Could you tell us for each whether you trust people from this group completely, distrust people from this group completely, or neither trust nor distrust people from this group?” Participants answered this question for “people you meet for the first time”, “strangers”, “people of another nationality”, and “people of another religion.” Responses were made on an 11-point scale ranging from 0 (*complete distrust*) to 50 (*neither trust nor distrust*) to 100 (*complete trust*), with a “don’t know” option at the end of each scale (each item was divided by 10 to produce variables ranging from 0 to 10). These four items were summed and divided by four to form the general social trust scale (study 1a: $\alpha = .85$;

study 1b: α = .84). Those who answered "don't know" were treated as missing.

Particular Social Trust. Four items measured particular social trust. Embedded within the same matrix grid as items for the general social trust scale were "your family", "your friends", "your neighbors", and "people you know personally" (each item was divided by 10 to produce variables ranging from 0 to 10). These four items were summed and divided by four to form the particular social trust scale (study 1a: α = .78; study 1b: α = .77). Those who answered "don't know" were treated as missing.

Political Trust. I measured political trust using a matrix grid consisting of four items, which were responses to the following question: "Now we'd like to ask you how much you trust certain organizations and institutions. Could you tell us for each whether you trust these organizations and institutions completely, distrust these organizations and institutions completely, or neither trust nor distrust these organizations and institutions?" These four items included "Congress and the Senate", "Public authorities", "Courts", and "Police." Responses were made on an 11-point scale ranging from 0 (*complete distrust*) to 50 (*neither trust nor distrust*) to 100 (*complete trust*), with a "don't know" option at the end of each scale (each item was divided by 10 to produce variables ranging from 0 to 10). The items were summed and divided by four to form the political trust scale (study 1a and 1b: α = .84). Those who answered "don't know" were treated as missing.

Individual-Level Control Variables

Social Value Orientations. Participants were provided with and completed the triple dominance measure of social values (Van Lange, Otten, De Bruin, and Joireman 1997; Van Lange 1999), which I used to gauge other-regarding preferences. This measure consisted of nine hypothetical decision scenarios, where participants decided for each scenario how to divide resources between themselves and a hypothetical stranger, or “other”. Each scenario included three options corresponding to one of three social values: a *cooperative* choice, which maximized joint gain; an *individualist* choice, which maximized personal gain without regard to the other’s outcome; and a *competitive* choice, which maximized the difference between gains to self and other. Participants were classified as cooperative, individualist, or competitive if they made six or more choices corresponding to one of the social value orientations. From this, I constructed three dummy variables: social preferences (consisting of the cooperative orientation), egoistic preferences (consisting of the individualist and competitive orientations), and unclassified preferences (consisting of those not classified as either cooperative, individualist, or competitive). This scale was included to control for possible false consensus effects whereby the trust that A forms in B is partly a function of A’s own trustworthiness (see Butler, Giuliano, and Guiso 2013).

Preference Aversions. I measured risk aversion with one item: “Are you, generally speaking, a person who avoids taking risks, or a person who is fully prepared to take risks?” Responses were made on a scale from 0 (*avoid taking risks*) to 10 (*fully prepared to take risks*), with a “don’t know” option at the end of the scale (those who answered “don’t know” were treated as missing). Inequality aversion and betrayal aversion were measured in response to “To what degree do you agree with the following statements?” using the following statements, respectively: “Wages and incomes should be made more equal” and “If someone offends me, I will also offend him or her.” Each item ranged from 0 (*strongly disagree*) to 5 (*neutral*) to 10 (*strongly agree*), with a “don’t know” option at the end of the scale (those who answered “don’t know” were treated as missing). These items were included since various measures of preference aversions have been shown to confound the relationship between social trust and behavioral trust (see Fehr 2009).

Trusting Behavior. Three items—lend possessions, lend money, and unlocked door—were used to capture prior trusting behavior: (i) "How often do you lend personal possessions to your friends (tools, books, your car or bicycle, etc.)?", (ii) "How often do you lend money to your friends?", and (iii) "How often do you leave your door unlocked?" Each item was treated as a continuous variable (1 = never, 2 = infrequently, 3 = sometimes, 4 = often, and 5 = very often). Those who answered "prefer not to say" were treated as missing. These variables were included as prior trusting behaviors might confound the relationship between social trust and relational trust (see Glaeser et al. 2000; Naef and Schupp 2009).

Demographic Variables. I treated age as a continuous variable. Gender was coded 0 for female (and other gender) and 1 for male. Race and ethnicity were measured using two questions, one assessing the respondent's Hispanic and Latino/a origins ("Are you of Hispanic, Latino, or Spanish origin?") and another assessing the respondent's self-perceived racial categorization(s) ("Please indicate what race(s) you consider yourself to be") (see Appendix C for a full list of possible responses). From these, I constructed five dummy variables: "non-Hispanic white", "non-white Hispanic", "non-white black", "non-white Asian", and "other race" (the "other race" category included "don't know" and "prefer not to say"). I specified "non-Hispanic white" as the referent category for all models.

Results

Intra-class correlations for relational trust were small to moderate (study 1a = .09; study 1b = .13), demonstrating variance between individuals. I employed two-level means-as-outcomes mixed-effects models to simultaneously estimate the sources of relational trust at the between-person level (i.e., at the individual level) and at the within-person level (i.e., at the vignette level) (Raudenbush and Bryk 2002). The level-1 (or within-person level) model of relational trust (Y_{ij}) from vignette number (X_{VN}) and vignette dimensions (X_{VD}) was modeled as follows:

$$Y_{ij} = \beta_{0j} + \beta_{1j} X_{VN_{ij}} + \sum_{q=1}^{Q} \beta_{qj} X_{VD_{qij}} + e_{ij} \tag{7.1}$$

where Y_{ij} is relational trust in the ith vignette for the jth individual. The term e_{ij} is the level-1 disturbance for Y assumed i.i.d normal. The intercept for Y in the jth individual is designated β_{0j}, the effect of X_{VN} on Y is designated β_{1j}, and the direct effect of X_{VD} for the qth dimension in the ith vignette for the jth individual on Y is designated β_{qj}.

A level-2 (or between-person level) equation was specified to model the random intercept β_{0j} from individual-level variables (W) according to the following:

$$\beta_{0j} = \gamma_{00} + \sum_{q=1}^{Q} \gamma_{0q} W_{qj} + u_{0j} \tag{7.2}$$

where γ_{00} is the population intercept for Y_{ij}, γ_{0q} is a qth individual-level regression coefficient for W_{qj}, and u_{0j} is the random disturbance assumed normally distributed for γ_{00}. According to equation 7.2, the slopes for all level-1 (or vignette level) effects are fixed. Model parameters were estimated in Stata 13.1.

To explore the effects of social identity on relational trust (i.e., hypothesis 23), I employed two-level means-as-outcomes mixed-effects models (Raudenbush and Bryk 2002). The level-1 (or within-person level) model of relational trust (Y) from vignette number (X_{VN}), Age dimension (X_{Age30}, X_{Age40}, X_{Age50}, and X_{Age60}), Race dimension (X_{Black}, $X_{Hispanic}$, and X_{Asian}), Gender dimension (X_{Male}), and other vignette dimensions (X_{VD}) was modeled as follows:

$$Y_{ij} = \beta_{0j} + \beta_{1j} X_{VN_{ij}} + \beta_{2j} X_{Age30_{ij}} + \beta_{3j} X_{Age40_{ij}} + \beta_{4j} X_{Age50_{ij}} + \beta_{5j} X_{Age60_{ij}} \tag{7.3}$$

$$+\beta_{6j}X_{Black_{ij}}+\beta_{7j}X_{Hispanic_{ij}}+\beta_{8j}X_{Asian_{ij}}+\beta_{9j}X_{Male_{ij}}+\sum_{q=1}^{Q}\beta_{qj}X_{VD_{qij}}+e_{ij}$$

where Y_{ij} is relational trust in the *i*th vignette for the *j*th individual. The term e_{ij} is the level-1 disturbance for Y assumed i.i.d normal. The intercept for Y in the *j*th individual is designated β_{0j}, the effect of X_{VN} on Y is designated β_{1j}, the direct effects of X_{Age30}, X_{Age40}, X_{Age50}, X_{Age60}, X_{Black}, $X_{Hispanic}$, X_{Asian}, and X_{Male} is designated β_{2j}, β_{3j}, β_{4j}, β_{5j}, β_{6j}, β_{7j}, β_{8j}, and β_{9j}, respectively, and the direct effect of X_{VD} for the *q*th dimension in the *i*th vignette for the *j*th individual on Y is designated β_{qj}.

A level-2 (or between-person level) equation was specified to model the random intercept β_{0j} and fixed slopes β_{2j}, β_{3j}, β_{4j}, β_{5j}, β_{6j}, β_{7j}, β_{8j}, and β_{9j} from individual-level variables (W) according to the following:

$$\beta_{0j}=\gamma_{00}+\sum_{q=1}^{Q}\gamma_{0q}W_{qj}+\gamma_{02}W_{Age_j}+\gamma_{03}W_{Non-WhiteHispanic_j}+\gamma_{04}W_{Non-WhiteBlack_j}$$
$$+\gamma_{05}W_{Non-WhiteAsian_j}+\gamma_{06}W_{OtherRace_j}+\gamma_{07}W_{Male_j}+u_{0j}$$

$$\begin{aligned}
\beta_{2j}&=\gamma_{20}+\gamma_{21}W_{Age_j}\\
\beta_{3j}&=\gamma_{30}+\gamma_{31}W_{Age_j}\\
\beta_{4j}&=\gamma_{40}+\gamma_{41}W_{Age_j}\\
\beta_{5j}&=\gamma_{50}+\gamma_{51}W_{Age_j}\\
\beta_{6j}&=\gamma_{60}+\gamma_{61}W_{Non-WhiteHispanic_j}+\gamma_{62}W_{Non-WhiteBlack_j}+\gamma_{63}W_{Non-WhiteAsian_j}+\gamma_{64}W_{OtherRace_j}\\
\beta_{7j}&=\gamma_{70}+\gamma_{71}W_{Non-WhiteHispanic_j}+\gamma_{72}W_{Non-WhiteBlack_j}+\gamma_{73}W_{Non-WhiteAsian_j}+\gamma_{74}W_{OtherRace_j}\\
\beta_{8j}&=\gamma_{80}+\gamma_{81}W_{Non-WhiteHispanic_j}+\gamma_{82}W_{Non-WhiteBlack_j}+\gamma_{83}W_{Non-WhiteAsian_j}+\gamma_{84}W_{OtherRace_j}\\
\beta_{9j}&=\gamma_{90}+\gamma_{91}W_{Male_j}
\end{aligned} \tag{7.4}$$

where γ_{00} is the population intercept for Y_{ij}, γ_{0q} is a *q*th individual-level regression coefficient for W_{qj}; γ_{02}, γ_{03}, γ_{04}, γ_{05}, γ_{06},and γ_{07} are individual-level regression coefficients for W_{Age}, $W_{Non-WhiteHispanic}$, $W_{Non-WhiteBlack}$, $W_{NoneWhiteAsian}$, $W_{OtherRace}$, and W_{Male}, respectively; and u_{0j} is the random disturbance assumed normally distributed for γ_{00}. According to equation 7.4, the slopes for β_{2j} through β_{9j} are treated as fixed variables where W_{Age}, $W_{Non\text{-}WhiteHispanic}$, $W_{Non\text{-}WhiteBlack}$, $W_{NoneWhiteAsian}$, $W_{OtherRace}$, and W_{Male} are treated as cross-level moderators of their respective Xs. All other vignette-level dimensions are treated as fixed variables. β_{2j} through β_{9j} are treated as fixed variables since (i) models found in equations 7.1 and 7.2 failed to converge when β_{2j} through β_{9j} were treated as random, or (ii) models found in equations 7.1 and 7.2 converged when β_{2j} through β_{9j} were treated as random but generated statistically insignificant random slopes (except for $X_{Blackij}$ in Study 1a). Model parameters were estimated in Stata 13.1.

I estimated my models as follows: (a) vignette-level dimensions *and* between-person level variables (general social trust, particular social trust, political trust, social preferences, unclassified preferences, risk aversion, inequality aversion, betrayal aversion, lend possessions, lend money, unlocked door, age, gender and race) (i.e., equations 7.1 and 7.2), and (b) plus cross-level interaction effects (i.e., equations 7.3 and 7.4). For (a) and (b), I have standardized Y and W (all vignette-level dimensions, X, were treated as categorical dummy variables and remained unstandardized). Table 7.1 reveals the full set of models for (a) from studies 1a and 1b.

Table 7.1. Two-Level Mixed Effects Models of Relational Trust with Random Intercepts and Fixed Slopes and Standardized Coefficients, Individual- and Vignette-Level Variables for Studies 1a and 1b

	Study 1a		Study 1b	
	β	s.e.	β	s.e.
Individual-level variables				
General social trust scale	0.036**	0.01	0.05**	0.01
Particular social trust scale	0.037**	0.01	0.07***	0.02
Political trust scale	0.02†	0.01	0.01	0.01
Egoistic preferences (ref.)				
Social preferences	0.08**	0.03	0.09**	0.03
Unclassified preferences	-0.05	0.05	-0.04	0.06
Risk aversion	-0.001	0.01	-0.001	0.01
Inequality aversion	0.01	0.01	0.01	0.01
Betrayal aversion	-0.03**	0.01	-0.02	0.01
Lend possessions	0.01	0.01	0.01	0.02
Lend money	0.02	0.01	-0.004	0.01

Door unlocked	-0.004	0.01	0.0002	0.01
Age	-0.03*	0.01	0.002	0.01
Male	0.03	0.06	0.02	0.03
Non-Hispanic white (ref.)				
Non-white Hispanic	0.05	0.11	0.02	0.10
Non-white black	0.02	0.05	-0.002	0.05
Non-white Asian	-0.04	0.05	0.01	0.06
Other race	-0.01	0.03	-0.03	0.03
Vignette-level variables				
Vignette number	-0.02***	0.002	-0.02***	0.002
Causal attributions	0.17***	0.01	0.16***	0.01
Age: 20 years (ref.)				
Age: 30 years	0.08***	0.02	0.01	0.02
Age: 40 years	0.08***	0.02	0.02	0.02
Age: 50 years	0.11***	0.02	0.01	0.02
Age: 60 years	0.08***	0.02	0.01	0.02
Race: white (ref.)				
Race: black	0.03	0.02	0.03†	0.02
Race: Hispanic	0.01	0.02	-0.003	0.02
Race: Asian	0.02	0.02	0.04*	0.02
Gender: female (ref.)				
Gender: male	-0.002	0.01	-0.01	0.01
Reputation: blank (ref.)				
Reputation: positive rep.	0.19***	0.01	0.18***	0.01
Halo: blank (ref.)				
Halo: bad computer	-0.38***	0.02	-0.37***	0.02
Halo: good computer	0.16***	0.02	0.15***	0.02
Competence: blank (ref.)				
Competence: competent	0.07***	0.01	0.07***	0.01
Exertion: blank (ref.)				
Exertion: hard-working	0.10***	0.01	0.11***	0.01
Per. Motives: no prior interaction (ref.)				
Per. Motives: uncooperative	-1.08***	0.02	-0.94***	0.02
Per. Motives: prior interaction	0.41***	0.02	0.49***	0.02
Per. Motives: encapsulated interests	0.49***	0.02	0.55***	0.02
Per. Motives: goodwill	0.75***	0.02	0.68***	0.02
Per. Motives: virtuous dispositions	0.72***	0.02	0.70***	0.02
Contract: blank (ref.)				
Contract: non-binding contract	0.001	0.02	0.04*	0.02
Contract: binding contract	0.23***	0.02	0.17***	0.02
Regulation: no regulations (ref.)				
Regulation: non-monetary regulations	0.21***	0.01	0.12***	0.02
Regulation: monetary regulations	0.28***	0.02	0.26***	0.02
Non-binding X attributions	0.01	0.02	-0.01	0.02
Binding X attributions	-0.06***	0.02	-0.06***	0.02
Non-monetary X attributions	-0.08***	0.02	-0.04*	0.02
Monetary X attributions	-0.13***	0.02	-0.10***	0.02
Constant	-0.61***	0.04	-0.51***	0.04
var(u_{0j})	0.09***	0.006	0.12***	0.01
var(e_{ij})	0.40***	0.006	0.40***	0.01

Observations	11309	11744
Individuals	1136	1179

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed test)
Note: All continuous- and ordinal-level variables are standardized (except for vignette number).

Starting at the individual level, Table 7.1 shows that general social trust and particular social trust are consistent predictors of relational trust across both studies. In support of the results presented in Chapter 5, the standardized effects for both general and particular social trust across studies 1a and 1b are small to moderate. For instance, the standardized γ for general social trust in study 1b suggests that a 1 *SD* increase in general social trust yields a 0.05 *SD* increase in a persons' mean-level of relational trust. Amongst the individual-level variables, general social trust and particular social trust exert the greatest impact on relational trust. Importantly, these results were robust to the exclusion of respondents who failed three screener questions (see the "Chapter 7: Appendix" for results).

Next, I investigate the remaining hypotheses at the vignette level. First, I address those hypotheses concerned with the main effects of Age, Race, and Gender (i.e., hypothesis 22). To reiterate: from status characteristics theory, I expect (a) increases in age to produce increases in trust, (b) Asians to produce greater trust than all other races, and (c) males to produce greater trust than females. With respect to (a), I find support for the effect of a hypothetical auto mechanic's age in study 1a but not a hypothetical student's age in study 1b; that is, auto mechanics 30 years of age or older generated greater relational trust than those who were reported to be 20 years of age. With respect to (b), I find weak support for the effect of race on relational trust; that is, hypothetical black, Hispanic, or Asian auto mechanics in study 1a did not yield significantly higher or lower levels of relational trust than white auto mechanics. Although positive effects for hypothetical black and Asian students were observed in study 1b, these effects are marginally significant and might constitute false-positive results when considering the overall sample size at the vignette level (*N* = 11,744). With respect to (c), I find no support for the effect of gender on relational trust—hypothetical males in studies 1a and 1b did not produce greater relational trust than hypothetical females. Finally, models (not shown) in which Competence is interacted with Age, Race, and Gender of the trustee only yielded statistically significant results for Competence X Asian in study 1a (no statistically significant interactions were observed in study 2a). These interactions were explored as diffuse status characteristics—Age, Race, and Gender—might impact relational trust to a greater degree when expectation states about the specific abilities and competencies of a trustee are unknown.

Second, I investigate the reputation hypothesis: Does information regarding a prior successful exchange between B (the possible trustee) and D (A's network relation) with respect to matter Y increase A's trust in B with respect to matter Y? I find this to be the case in study 1a and study 1b. That is, a respondent's hypothetical friends who reported prior successful exchange with either a hypothetical auto mechanic or a hypothetical student increased relational trust to a great extent. In studies 1a and 1b, this resulted in approximately a 0.19 *SD* increase in relational trust.

Third, I investigate the impact of the halo effect and the pitchfork effect on relational trust as well as evidence for negativity bias (i.e., hypotheses 24-26). In studies 1a and 1b, hypothetical auto mechanics and hypothetical students who sold respondents a used computer with satisfactory results yielded greater relational trust than the control condition (i.e., blank level) or the pitchfork condition (i.e., a used computer with unsatisfactory results). Interestingly, the absolute value of the pitchfork effect yielded a much greater impact on relational than the halo effect (0.38 versus 0.16, respectively, in study 1a; 0.37 versus 0.15, respectively, in study 1b). Taken together, the results provide strong evidence for the halo effect, the pitchfork effect, and negativity bias (see the “Chapter 7: Appendix” for results concerning the robustness of these findings). Further evidence for negativity bias can be found with an analysis of the levels for Perceived Motivations: the level that exerts the greatest absolute effect on relational trust is not goodwill or virtuous dispositions but prior uncooperative transactions.

Fourth, I explore the role of perceived competence and perceived exertion in forming relational trust (i.e., hypotheses 18 and 19). In studies 1a and 1b, vignettes in which hypothetical auto mechanics and hypothetical students were perceived as competent and hard-working yielded greater relational trust than vignettes with a blank level (these results were robust to the exclusion of respondents who failed three screener questions—see the “Chapter 7: Appendix”). When coupled with the results from Chapter 6, the findings show that trustworthiness is largely a function of capacity (i.e., competence) and motivation (i.e., exertion and commitment).

Fifth, in terms of relative effect sizes, a trustee’s perceived motivations appear to have the greatest (positive) impact on relational trust (goodwill = virtuous dispositions > encapsulated interests > prior interaction > uncooperative), with social constraints yielding great levels of relational trust conditional on causal attributions. For instance, in study 1a, monetary regulations increase relational trust by 0.59 *SD* when causal attributions are at their lowest value (-2.4 on the standardized scale) (i.e., external attribution), but only increase relational trust by 0.06 *SD* when causal attributions are at their greatest value (1.7 on the standardized scale) (i.e., internal attribution). This suggests that some social constraints increase relational trust to a greater extent than prior interactions or encapsulated interests when respondents draw external attributions. Yet, perceived goodwill and virtuous dispositions produce the greatest amounts of relational trust regardless of how social constraints are attributed to the hypothetical situation or the hypothetical trustee. Interestingly, the impact of externally attributed social constraints (be it binding contracts, non-monetary regulations, and monetary regulations) are not greater than any level of perceived motivations in the 'group project' scenario (i.e., study 1b). Reputational effects and halo effects appear to exert the next greatest (positive) impact on relational trust in studies 1a and 1b, followed by exertion, competence, and some status characteristics of the trustee (e.g., Age in study 1a).

With respect to individual-level variables that yield consistent effects across studies 1a and 1b, (a) social preferences appear to exert a similar effect on relational trust than a trustee's perceived competence or exertion, (b) general social trust increases mean-levels of relational trust by a maximum of 0.23 *SD* in study 1a and 0.33 *SD* in study 1b (lowest value versus highest value), and (c) particular social trust increases mean-levels of relational trust by a maximum of 0.26 *SD* in study 1a and 0.48 *SD* in study 1b (lowest value versus highest value). This suggests that "high" social trusters—be it general or particular—exert a similar effect on relational trust than perceptions of encapsulated interests or some social constraints depending on the study.

I now shift to the analysis of social identity (i.e., hypothesis 23). Table 7.2 consists of models specified in equations 7.3 and 7.4. All individual- and vignette-level variables found in Table 7.1 have been included. Only those variables directly related to the analysis of social identity are shown in Table 7.2. Recall the basic argument proposed by social identity theory: shared membership in a salient social category, rather than status characteristics of a trustee, should bias belief formation about the trustworthiness of in-group and out-group members. Thus, I expect common memberships in age, race, and gender to increase trust to a greater extent than uncommon memberships. For instance, a male auto mechanic should produce greater trust for a male respondent than a female auto mechanic in the 'car repair' scenario. Likewise, a white student should produce greater trust for a white respondent than all other racial categories in the ‘group project’ scenario.

Table 7.2. Two-Level Mixed-Effects Cross-Level Moderation Models of Relational Trust with Random Intercepts and Fixed Slopes and Standardized Coefficients, Studies 1a and 1b

	Study 1a		Study 1b	
	β	s.e.	β	s.e.
Individual-level variables				
Age	-0.03	0.02	-0.01	0.02
Male	0.06*	0.03	0.01	0.03
Non-Hispanic white (ref.)				
Non-white Hispanic	0.16	0.15	-0.11	0.13
Non-white black	-0.10	0.07	-0.03	0.07
Non-white Asian	-0.09	0.07	0.03	0.07
Other race	-0.08†	0.05	-0.04	0.05
Vignette-level variables				
Age: 20 years (ref.)				
Age: 30 years	0.08***	0.02	0.01	0.02
Age: 40 years	0.08***	0.02	0.02	0.02
Age: 50 years	0.11***	0.02	0.01	0.02
Age: 60 years	0.08***	0.02	0.01	0.02
Gender: female (ref.)				
Gender: male	-0.01	0.02	-0.02	0.02
Race: white (ref.)				
Race: black	-0.02	0.02	0.04†	0.02
Race: Hispanic	0.01	0.02	-0.02	0.02
Race: Asian	-0.01	0.02	0.03	0.02
Cross-level interactions				
Age X Age: 30 years	0.02	0.02	0.001	0.02
Age X Age: 40 years	-0.003	0.02	-0.01	0.02
Age X Age: 50 years	-0.01	0.02	0.05*	0.02
Age X Age: 60 years	-0.0003	0.02	0.01	0.02
Male X male	0.01	0.03	0.01	0.02
Non-white Hispanic X black	-0.23	0.17	0.06	0.14
Non-white Hispanic X Hispanic	-0.02	0.18	0.33*	0.14
Non-white Hispanic X Asian	-0.17	0.18	0.13	0.15
Non-white black X black	0.21*	0.09	0.07	0.07
Non-white black X Hispanic	0.22**	0.08	0.04	0.07
Non-white black X Asian	0.05	0.08	0.01	0.07
Non-white Asian X black	0.03	0.08	-0.08	0.08
Non-white Asian X Hispanic	0.09	0.08	0.02	0.08
Non-white Asian X Asian	0.09	0.08	-0.03	0.08
Other race X black	0.14**	0.05	-0.06	0.05
Other race X Hispanic	0.07	0.05	0.05	0.05
Other race X Asian	0.05	0.05	0.05	0.05
Constant	-0.59***	0.04	-0.51***	0.04
var(u_{0j})	0.09***	0.01	0.13***	0.01
var(e_{ij})	0.39***	0.01	0.39***	0.01
Other variables	Yes		Yes	
Observations	11309		11744	

Individuals	1136	1179

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed test)

Note: All continuous- and ordinal-level variables are standardized (except for vignette number).

Table 7.2 provides weak evidence for the role of social identity in producing relational trust. Although interactions were observed between race of the respondent and race of the hypothetical trustee (as well as age of the respondent and age of the trustee), these results were inconsistent across both studies. Moreover, in many instances, the positive effect of shared membership on relational trust was only relevant for one set of social categories and not another. Take, for instance, the statistically significant interaction between non-white black respondents and hypothetical black auto mechanics in study 1a ($\beta = 0.21$, $SE = 0.09$, $p < .05$). As Figure 7.1 shows, hypothetical black auto mechanics increased relational trust for non-white black respondents and increased relational trust for non-Hispanic white respondents to a statistically insignificant trivial degree ($\beta = 0.03$, $SE = 0.02$, $p > .10$); moreover, I did not observe a statistically significant difference between non-white black respondents and non-Hispanic white respondents who were shown vignettes with hypothetical white auto mechanics (according to social identity theory, non-Hispanic whites should have reported greater relational trust than non-white blacks under such conditions). Although not shown, a similar effect was observed for non-white black respondents and hypothetical Hispanic auto mechanics. Finally, I also altered the referent categories for both the race of the respondent and the race of the hypothetical trustee (e.g., non-white black respondents and hypothetical black trustees). While a number of other interesting interaction effects that supported social identity were observed (e.g., non-white Asian respondents were much more likely to trust hypothetical Asian auto mechanics than black auto mechanics), none were consistent across studies 1a and 1b.

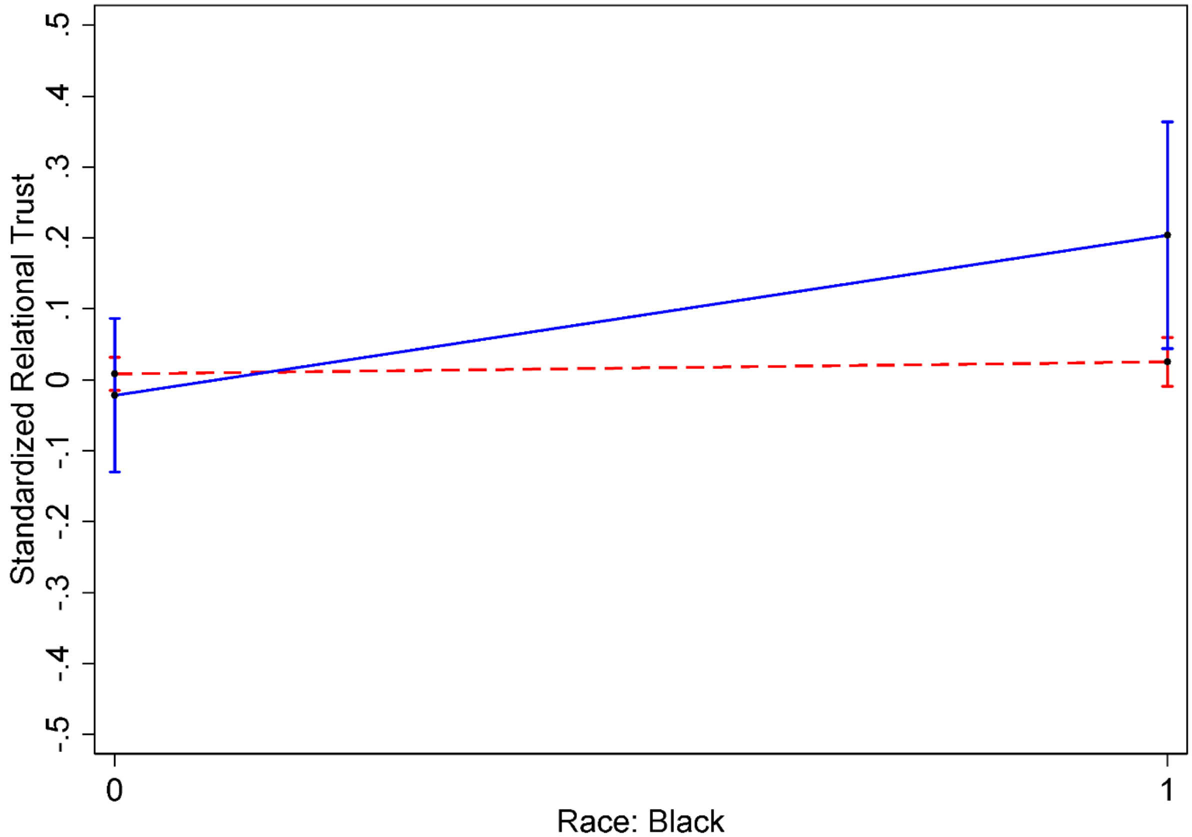

Figure 7.1. Relationship between race of hypothetical auto mechanic (black = 1, white = 0) and relational trust by race of respondent in the simulated 'car repair' scenario (dashed red line = non-Hispanic white respondents, solid blue line = non-white black respondents).

Studies 2a and 2b

Method

Participants and Design. Ten thousand undergraduate students at the University of Washington were contacted. All students were randomly selected from a publicly available student directory. Of these ten thousand students, five thousand were randomly selected for each experiment. Eight hundred and eighty-four undergraduate students at the University of Washington (Seattle) completed study 2a (334 males, 527 females, 5 other gender, 18 PNS/missing; median age = 20), while eight hundred and forty-one undergraduate students completed study 2b (298 males, 519 females, 4 other gender, 20 PNS/missing; median age = 20).

With respect to response rates, thirteen students did not meet study 2a's eligibility requirements (e.g., reported not being legal adults), which produced a 17.7% response rate (e.g., 884 completed/4,987 eligible); while sixteen students did not meet study 2b's eligibility requirements, which produced a 16.9% response rate (e.g., 841 completed/4,984 eligible). In both studies, students who participated were entered into a lottery for the chance to win one of six $50 bills. Studies 2a and 2b featured the same $2^3 \times 3^3 \times 4^2 \times 5^1 \times 6^1$ multifactorial vignette design as studies 1a and 1b. Overall sample size was determined by a power analysis, and my data collection stopping rule consisted of one full academic quarter of recruitment with at least ten recruitment e-mails sent in total.

Procedure. Studies 2a and 2b were administered in the same way as studies 1a and 1b, respectively, with four exceptions. First, participants were contacted over e-mail advertising lottery payment for participating in a web-based sociology experiment. Second, eligibility was restricted to University of Washington undergraduate students with legal adult status. Third, the median time to complete studies 2a and 2b was 20.26 and 20.24 minutes, respectively. Fourth, two vignette-level dependent variables (gratitude and admiration) preceded the relational trust dependent variable.

Vignette-Level Dependent Variables

Relational Trust and Other-Praising Emotions. One question measured trust (drawn from studies 1a and 1b) (study 2a: M = 6.73, SD = 2.47, min = 0, max = 10; study 2b: M = 7.53, SD = 2.24, min = 0, max = 10), while two other questions assessed gratitude and admiration.[54]

[54] Study 2a: 24 responses (or 0.27% of all responses) to the trust question, 64 responses (or 0.72% of all responses) to the gratitude question, and 80 responses (or 0.90% of all responses) to the admiration question consisted of "Don't know"; study 2b: 16 responses (or 0.19% of all responses) to the trust question, 59 responses (or 0.70% of all responses) to the gratitude question, and 66 responses (or 0.78% of all responses) to the admiration question consisted of "Don't know".

All three questions were structured as 11-point bipolar scales. Although not investigated in the present chapter, the gratitude and admiration questions followed a similar structure (see Appendix C for further details about these questions). All three scales were then divided by 10 to produce variables ranging from 0 to 10. And "don't know" responses were treated as missing. The causes and effects of gratitude and admiration were explored in Chapter 6.

Individual-Level Independent Variables

All individual-level independent variables used in studies 1a and 1b were employed in studies 2a and 2b. The primary differences concerned α-levels, which are as follows: general social trust scale (study 1a: $\alpha = .85$; study 1b: $\alpha = .83$), particular social trust scale (study 1a: $\alpha = .71$; study 1b: $\alpha = .72$), and political trust scale (study 1a and 1b: $\alpha = .86$).

Individual-Level Control Variables

All individual-level control variables used in studies 1a and 1b were employed in studies 2a and 2b.

Results

To analyze the relations, I employed the two-level means-as-outcomes mixed-effects models specified in equations 7.1 through 7.4. Again, β_{2j} through β_{9j} found in equation 4 are treated as fixed variables since (i) models found in equations 7.1 and 7.2 failed to converge when β_{2j} through β_{9j} were treated as random, or (ii) models found in equations 7.1 and 7.2 converged when β_{2j} through β_{9j} were treated as random but generated statistically insignificant random slopes (except for $X_{Blackij}$, $X_{Hispanicij}$, $X_{Asianij}$ in study 2a and $X_{Blackij}$ in Study 2b). Model parameters were estimated in Stata 13.1.

Table 7.3. Two-Level Mixed Effects Models of Relational Trust with Random Intercepts and Fixed Slopes and Standardized Coefficients, Individual- and Vignette-Level Variables for Studies 2a and 2b

	Study 2a		Study 2b	
	β	s.e.	β	s.e.

Individual-level variables				
General social trust scale	0.04*	0.02	0.08***	0.02
Particular social trust scale	0.06**	0.02	0.13***	0.02
Political trust scale	0.06**	0.02	0.03	0.02
Egoistic preferences (ref.)				
Social preferences	0.13**	0.04	0.03	0.04
Unclassified preferences	-0.01	0.07	-0.16*	0.07
Risk aversion	0.05**	0.02	0.03	0.02
Inequality aversion	0.06***	0.02	0.04*	0.02
Betrayal aversion	-0.03	0.02	-0.06**	0.02
Lend possessions	-0.01	0.02	0.04	0.02
Lend money	0.01	0.02	-0.003	0.02
Door unlocked	-0.01	0.02	-0.01	0.02
Age	-0.02	0.02	0.02	0.02
Male	-0.03	0.03	0.03	0.04
Non-Hispanic white (ref.)				
Non-white Hispanic	0.02	0.09	-0.02	0.11
Non-white black	0.16	0.17	-0.21	0.24
Non-white Asian	-0.02	0.04	-0.05	0.05
Other race	0.07	0.04	-0.09†	0.05
Vignette-level variables				
Vignette number	-0.02***	0.003	-0.01***	0.003
Age: 20 years (ref.)				
Age: 30 years	0.02	0.03	-0.02	0.03
Age: 40 years	0.02	0.03	-0.04	0.03
Age: 50 years	0.06*	0.03	-0.04	0.02
Age: 60 years	0.04	0.03	-0.06*	0.03
Race: white (ref.)				
Race: black	0.05*	0.02	0.09***	0.02
Race: Hispanic	0.04†	0.02	0.05*	0.02
Race: Asian	0.03	0.02	0.07**	0.02
Gender: female (ref.)				
Gender: male	0.04*	0.02	-0.03*	0.02
Reputation: blank (ref.)				
Reputation: positive rep.	0.23***	0.02	0.16***	0.02
Halo: blank (ref.)				
Halo: bad computer	-0.31***	0.02	-0.34***	0.02
Halo: good computer	0.17***	0.02	0.12***	0.02
Competence: blank (ref.)				
Competence: competent	0.07***	0.02	0.04*	0.02
Exertion: blank (ref.)				
Exertion: hard-working	0.07***	0.02	0.09***	0.02
Per. Motives: no prior interaction (ref.)				
Per. Motives: uncooperative	-0.90***	0.03	-0.83***	0.03
Per. Motives: prior interaction	0.41***	0.03	0.43***	0.03
Per. Motives: encapsulated interests	0.44***	0.03	0.50***	0.03
Per. Motives: goodwill	0.71***	0.03	0.68***	0.03
Per. Motives: virtuous dispositions	0.67***	0.03	0.66***	0.03
Contract: blank (ref.)				
Contract: non-binding contract	-0.01	0.02	0.02	0.02

Contract: binding contract	0.25***	0.02	0.14***	0.02
Regulation: no regulations (ref.)				
Regulation: non-monetary regulations	0.24***	0.02	0.09***	0.02
Regulation: monetary regulations	0.29***	0.02	0.18***	0.02
Constant	-0.67***	0.06	-0.38	0.06
var(u_{0j})	0.15***	0.01	0.19***	0.01
var(e_{ij})	0.43***	0.01	0.38***	0.01
Observations	7314		6716	
Individuals	739		679	

*** p < 0.001, ** p < 0.01, * p < 0.05, † p < 0.10 (two-tailed test)

Note: All continuous- and ordinal-level variables are standardized (except for vignette number).

Starting at the individual level, Table 7.3 reveals how many of the effects observed in Table 7.1 hold for studies 2a and 2b: (a) general social trust and particular social trust are consistent predictors of relational trust across both studies, and (b) amongst the individual-level variables both general social trust and particular social trust exert the greatest impact on relational trust. The effects of general social trust and particular social trust on relational trust were more sensative to the exclusion of respondents who failed three screener questions in studies 2a and 2b than in studies 1a and 1b (see the “Chapter 7: Appendix” for results).

At the vignette level, some effects for Age of the hypothetical auto mechanic or student were observed, but they were inconsistent across study 2a and 2b. Yet, Age appears to have a positive effect on relational trust in studies 1a and 2a—the ‘car repair’ scenarios. This suggests that status characteristics for Age might matter for some tasks and not others. Interestingly, hypothetical Asian students exert greater positive effects on relational trust than hypothetical white students; a finding that was inconsistent between scenarios in studies 2a and 2b but consistent across studies 1b and 2b—the ‘group project’ scenarios. In fact, a hypothetical trustee’s race other than white exerts a positive effect on relational trust, which was also robust to the exclusion of three screener questions. Table 7.3 also reveals gender effects of the hypothetical trustees. These effects, however, are inconsistent across studies: hypothetical male auto mechanics yield greater relational trust than hypothetical female auto mechanics, while this effect is reversed for hypothetical students (females > males). Finally, models (not shown) in which Competence is interacted with Age, Race, and Gender of the trustee yielded statistically insignificant results.

With respect to reputation, studies 2a and 2b show that a respondent's hypothetical friends who reported prior successful exchange with either a hypothetical auto mechanic or a hypothetical student increased relational trust to a great extent. In studies 2a and 2b, this resulted in approximately a 0.23 *SD* and 0.16 *SD* increase in relational trust, respectively.

Concerning the halo effect and the pitchfork effect, studies 2a and 2b provide strong evidence for the halo effect (study 2a: $\beta = 0.17$, $SE = 0.02$, $p < .001$; study 2b: $\beta = 0.12$, $SE = 0.02$, $p < .001$), the pitchfork effect (study 2a: $\beta = -0.31$, $SE = 0.02$, $p < .001$; study 2b: $\beta = -0.34$, $SE = 0.02$, $p < .001$), and negativity bias (study 2a: 0.17 versus -0.31; study 2b: 0.12 versus -0.34). And like studies 1a and 1b, further evidence for negativity bias can be found with an analysis of the levels for Perceived Motivations: the level that exerts the greatest absolute effect on relational trust is not goodwill or virtuous dispositions but prior uncooperative transactions.

With respect to perceived competence and perceived exertion, Table 7.3 shows that hypothetical auto mechanics and hypothetical students perceived as competent and hard-working yielded greater relational trust than vignettes with a blank level. Once again showing that trustworthiness is largely a function of capacity and motivation.

In terms of relative effect sizes, Table 7.3 shows a trustee's perceived motivations appear to have the greatest (positive) impact on relational trust (goodwill = virtuous dispositions > encapsulated interests > prior interaction > uncooperative). These results parallel those found in Table 7.1. The effect that appears to exert the next greatest impact on relational trust is the pitchfork effect (see Halo: bad computer) followed by the various levels of social constraints, the reputation of the hypothetical trustee, and some status characteristics of the trustee (e.g., Race in both studies).

In relation to the individual-level variables that yield consistent effects across studies 2a and 2b, (a) general social trust increases mean-levels of relational trust by a maximum of 0.29 *SD* in study 2a and 0.61 *SD* in study 2b (lowest value versus highest value), (b) particular social trust increases mean-levels of relational trust by a maximum of 0.46 *SD* in study 2a and 0.92 *SD* in study 2b (lowest value versus highest value), and (c) inequality aversion increases mean-level of relational trust by a maximum of 0.21 *SD* in study 2a and 0.15 *SD* in study 2b (lowest value versus highest value). Similar to studies 1a and 1b, these results suggest that "high" social trusters—be it general or particular—exert a similar effect on relational trust as perceptions of encapsulated interests or as some social constraints. In fact, the individual-level covariate in study 2b that yields the greatest impact on relational trust is particular social trust.

Table 7.4. Two-Level Mixed-Effects Cross-Level Moderation Models of Relational Trust with Random Intercepts and Fixed Slopes and Standardized Coefficients, Studies 2a and 2b

	Study 2a		Study 2b	
	β	s.e.	β	s.e.
Individual-level variables				
Age	-0.02	0.02	0.01	0.02
Male	-0.03	0.04	0.02	0.04
Non-Hispanic white (ref.)				
Non-white Hispanic	-0.12	0.11	-0.20	0.14
Non-white black	0.15	0.21	-0.23	0.31
Non-white Asian	-0.08	0.05	-0.02	0.06
Other race	0.01	0.06	-0.18**	0.06
Vignette-level variables				
Age: 20 years (ref.)				
Age: 30 years	0.02	0.03	-0.02	0.03
Age: 40 years	0.02	0.03	-0.04	0.03
Age: 50 years	0.06*	0.03	-0.04	0.03
Age: 60 years	0.02	0.03	-0.06*	0.03
Gender: female (ref.)				
Gender: male	0.03	0.02	-0.05*	0.02
Race: white (ref.)				
Race: black	0.02	0.03	0.09**	0.03
Race: Hispanic	0.002	0.03	0.03	0.03
Race: Asian	-0.04	0.03	0.03	0.03

Cross-level interactions				
Age X Age: 30 years	0.001	0.03	0.02	0.02
Age X Age: 40 years	-0.03	0.03	0.02	0.02
Age X Age: 50 years	0.003	0.03	0.01	0.02
Age X Age: 60 years	-0.02	0.03	-0.01	0.02
Male X male	0.01	0.03	0.04	0.03
Non-white Hispanic X black	0.17	0.12	0.22	0.13
Non-white Hispanic X Hispanic	0.26*	0.12	0.23†	0.13
Non-white Hispanic X Asian	0.13	0.12	0.27*	0.13
Non-white black X black	0.05	0.21	0.16	0.28
Non-white black X Hispanic	0.38	0.27	-0.31	0.33
Non-white black X Asian	-0.19	0.21	0.21	0.34
Non-white Asian X black	0.02	0.06	-0.10†	0.05
Non-white Asian X Hispanic	0.04	0.06	-0.04	0.05
Non-white Asian X Asian	0.18**	0.06	0.01	0.05
Other race X black	0.09	0.06	0.10†	0.06
Other race X Hispanic	0.08	0.06	0.10†	0.06
Other race X Asian	0.07	0.06	0.13*	0.06
Constant	-0.64***	0.06	-0.36***	0.06
var(u_{0j})	0.15***	0.01	0.19***	0.01
var(e_{ij})	0.43***	.01	0.38***	0.01
Other variables	Yes		Yes	
Observations	7314		6716	
Individuals	739		679	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed test)

Note: All continuous- and ordinal-level variables are standardized (except for vignette number).

I now shift to the analysis of social identity. Table 7.4 consists of models specified in equations 7.3 and 7.4. All individual- and vignette-level variables found in Table 7.3 have been included. Only those variables directly related to the analysis of social identity are shown in Table 7.4. Similar to studies 1a and 1b, Table 7.4 provides weak evidence for the role of social identity in producing relational trust. Although interactions were observed between race of the respondent and race of the hypothetical trustee, these results were inconsistent across both studies (I also found no evidence for interactions between age of the respondent and age of the hypothetical trustee nor gender of the respondent and gender of the hypothetical trustee). Finally, altering the referent categories for both the race of the respondent and the race of the hypothetical trustee (e.g., non-white black respondents and hypothetical black trustees) yielded interaction effects inconsistent with social identity theory where none of the effects were consistent across studies 2a and 2b.

Discussion and Conclusion

The current chapter produced five key findings.

First, my vignette experiments provided mixed results for status characteristics theory. Although specific status characteristics of a trustee—measured with the Competence dimension—impacted relational trust across the two vignette experiments and populations, classic diffuse status characteristics—measured as the Age, Race, and Gender of a trustee—yielded inconsistent findings. Those results that did support the effect of diffuse status characteristics on relational trust were as follows: (i) hypothetical older auto mechanics yielded greater relational trust than hypothetical younger auto mechanics in studies 1a and 2a, and (ii) hypothetical Asian students yielded greater relational trust than hypothetical white students in studies 1b and 2b. In other words, age of a hypothetical trustee did not impact relational trust in the ‘group project’ scenarios, race of a hypothetical trustee did not impact relational trust in the ‘car repair’ scenarios, and gender of a hypothetical trustee did not consistently impact relational trust in either the ‘group project’ or ‘car repair’ scenarios. And, more importantly, I failed to observe evidence for interactions between dimensions of diffuse status characteristics *and* specific status characteristics. Overall, then, specific status characteristics appear to play a larger part in the formation of relational trust than diffuse status characteristics, which were limited to task-relevant cues (Dovidio et al. 1988).

Second, I found strong support for reputational effects and halo effects. For the former, a respondent whose hypothetical friends reported prior successful exchange (regarding the matter at hand) with either a hypothetical auto mechanic or a hypothetical student exhibited greater relational trust than a respondent who was provided with no such information. For the latter, simulated trustees (either auto mechanics or students) who sold respondents a used computer with satisfactory results yielded greater relational trust than a control condition. Also embedded within this finding was evidence for the pitchfork effect and negativity bias. Taken together, the findings suggest that individuals rely on multiple sources of information when forming trust-based beliefs, including information about their own *and* others' prior interactions with a trustee (be it matters related or unrelated to the task at hand), with negative outcomes having a greater absolute effect on relational trust than equally valenced positive outcomes.

Third, I observed that competence, exertion, and commitment all impacted the formation of relational trust regardless of the scenario. That is, simulated trustees who were perceived as hard-working, capable and committed to the interests of a truster generated much greater relational trust than those who were not. These results are important in light of prior research (Mayer et al. 1995; Campos-Castillo and Ewoodzie 2014), which has yet to explore the impact of capability *and* motivation (i.e., dimensions of trustworthiness) on relational trust under controlled conditions found in an experiment. By doing so, I was able to determine that perceived motivations—especially expressive *and* internal motivations—generated much greater relational trust than perceived capabilities, and that these results were not sensitive to the sampled population (MTurk works versus undergraduate students), the sampling methods (purposive versus random sample), or the experimental context ('car repair' versus 'group project' scenario). In other words, if one desires the trust of another, my findings suggest that character-building efforts are more beneficial to one's trustworthiness than competence-building efforts since trustworthiness is largely—although not solely—a function of commitment and motivation.

Fourth, the present chapter provides weak evidence for the role of social identity in producing relational trust. That is, shared membership in a general and diffuse social category—be it age, race, or gender—did not impact the relational trust a respondent formed about a hypothetical trustee. Instead, the findings suggest that the status characteristic of a trustee is much more important than the shared categorical membership of a truster and a trustee. These results are important given prior research (Foddy et al. 2009) and the growing interest in social identity as a source cooperation and conflict (Buchan et al. 2011).

My null findings, however, could result from a number of issues. Issue one: age, race, and gender may not (or no longer) serve as salient categories that spark perceived shared membership. Other general categories such as religion or finer-grained categories like "member of the Automotive Service Association of America" might spark social identity processes. But if social identity is only relevant for specific forms of categorical membership (e.g., both parties are fans of Arsenal football), then the scope of social identity as a trust-enhancing or trust-undermining process is of little analytical interest for general theories of trust. Issue two: measurement error is present for the race dimension. To explain, there is much variation within Asian and Hispanic racial categories. With finer-grained levels of race including Chinese, Vietnamese, and Japanese instead of "Asian" (or, conversely, Mexican, Puerto Rican, and Colombian instead of "Hispanic") I might have observed social identity effects. At the very least, however, I should have observed trust-enhancing effects of shared racial membership for white respondents when paired with simulated white trustees, but this was not case. Issue three: those few statistically significant interactions between race of the respondent and race of the simulated trustee might have resulted from norms about the trustworthiness of other races and not necessarily social identity processes. For instance, in study 1a, hypothetical black (and

Hispanic) auto mechanics yielded greater relational trust than hypothetical white auto mechanics for non-white black respondents. Yet, for non-Hispanic white respondents, hypothetical black (or Hispanic) auto mechanics neither increased nor decreased relational trust when compared to hypothetical white auto mechanics (see Figure 7.1). These results could easily be explained by norms of trustworthiness; that is, the African-American community might share norms about the untrustworthiness of whites. This type of interaction, however, was only found in study 1a, suggesting that—like social identity—such norms have limited purchase in terms of understanding trust.

Fifth, and finally, vignette experiments allow a researcher to investigate a large number of theoretical dimensions, something that is difficult to do with traditional laboratory experiments (Hainmueller et al. 2014; Jasso 2006). When this is the case, users of vignette experiments are able to compare and contrast the effect sizes of all theoretical dimensions of interest. The current chapter explored relative effect sizes at the individual- and vignette-level. Across both studies and populations (with some minor variations), perceived motivations yielded the greatest (positive) impact on relational trust (goodwill = virtuous dispositions > encapsulated interests > prior interaction > uncooperative), followed by social constraints, reputational effects, halo effects, perceived competence, perceived exertion, and some diffuse status characteristics. Interestingly, in terms of absolute effect sizes, (i) prior uncooperative transactions had the greatest overall impact on relational trust, (ii) the pitchfork effect impacted relational trust roughly the same extent as prior successful exchange, and (iii) general and particular social trust increased relational trust to the same extent as perceptions of encapsulated interests. In short, characteristics of the truster (i.e., general and particular social trust), characteristics of the trustee (i.e., goodwill and virtuous dispositions), and forces external to the truster-trustee relationship (i.e., binding contracts and monetary regulations) appear to drive trust formation.

To conclude, the sources of trust—as expected—are varied but produce differential amounts of trust depending on their origins. Although social constraints, reputational effects, perceived competence, and general social trust all produce relational trust, perceived motivations in the form of goodwill and virtuous dispositions impact relational trust to the greatest extent. All of which has yet to be tested in the literature.

CHAPTER 7: APPENDIX

This appendix includes models found in tables 7.1 - 7.4 where respondents who failed three screener questions were excluded from the analysis.

Table 7.A.1. Two-Level Mixed Effects Models of Relational Trust with Random Intercepts and Fixed Slopes and Standardized Coefficients, Individual- and Vignette-Level Variables without Failed Screeners for Studies 1a and 1b

	Study 1a		Study 1b	
	β	s.e.	β	s.e.
Individual-level variables				
General social trust scale	0.035*	0.01	0.05**	0.02
Particular social trust scale	0.031*	0.01	0.07***	0.02
Political trust scale	0.03*	0.01	0.01	0.02
Egoistic preferences (ref.)				
Social preferences	0.09**	0.03	0.12***	0.03
Unclassified preferences	-0.07	0.05	0.01	0.06
Risk aversion	0.0001	0.01	-0.002	0.01
Inequality aversion	0.01	0.01	0.01	0.01
Betrayal aversion	-0.02	0.01	-0.004	0.01
Lend possessions	0.02	0.02	0.01	0.02
Lend money	0.01	0.01	-0.01	0.02
Door unlocked	-0.004	0.01	0.01	0.01
Age	-0.03*	0.01	0.01	0.01
Male	0.07**	0.02	0.01	0.03
Non-Hispanic white (ref.)				
Non-white Hispanic	0.04	0.12	-0.05	0.11
Non-white black	0.01	0.06	-0.01	0.06
Non-white Asian	-0.0002	0.05	0.03	0.06
Other race	-0.01	0.03	-0.003	0.04
Vignette-level variables				
Vignette number	-0.02***	0.002	-0.02***	0.002
Causal attributions	0.17***	0.01	0.15***	0.02
Age: 20 years (ref.)				
Age: 30 years	0.08***	0.02	-0.002	0.02
Age: 40 years	0.09***	0.02	0.02	0.02
Age: 50 years	0.11***	0.02	0.02	0.02
Age: 60 years	0.09***	0.02	0.01	0.02
Race: white (ref.)				
Race: black	0.02	0.02	0.04*	0.02
Race: Hispanic	0.01	0.02	0.01	0.02
Race: Asian	0.01	0.02	0.04*	0.02
Race: female (ref.)				
Race: male	0.01	0.01	-0.01	0.01
Reputation: blank (ref.)				
Reputation: positive rep.	0.19***	0.01	0.19***	0.01
Halo: blank (ref.)				
Halo: bad computer	-0.38***	0.02	-0.37***	0.02

Halo: good computer	0.17***	0.02	0.16***	0.02
Competence: blank (ref.)				
Competence: competent	0.06***	0.01	0.07***	0.01
Exertion: blank (ref.)				
Exertion: hard-working	0.10***	0.01	0.12***	0.01
Per. Motives: no prior interaction (ref.)				
Per. Motives: uncooperative	-1.10***	0.02	-0.95***	0.02
Per. Motives: prior interaction	0.43***	0.02	0.51***	0.02
Per. Motives: encapsulated interests	0.50***	0.02	0.57***	0.02
Per. Motives: goodwill	0.77***	0.02	0.72***	0.02
Per. Motives: virtuous dispositions	0.75***	0.02	0.73***	0.02
Contract: blank (ref.)				
Contract: non-binding contract	0.01	0.02	0.04**	0.02
Contract: binding contract	0.24***	0.02	0.17***	0.02
Regulation: no regulations (ref.)				
Regulation: non-monetary regulations	0.21***	0.01	0.11***	0.02
Regulation: monetary regulations	0.28***	0.02	0.26***	0.02
Non-binding X attributions	0.01	0.02	-0.01	0.02
Binding X attributions	-0.06***	0.02	-0.05**	0.02
Non-monetary X attributions	-0.09***	0.02	-0.04*	0.02
Monetary X attributions	-0.14***	0.02	-0.12***	0.02
Constant	-0.64***	0.04	-0.55***	0.05
var(u_{0j})	0.09***	0.006	0.12***	0.01
var(e_{ij})	0.38***	0.006	0.37***	0.01
Observations	10135		9280	
Individuals	1018		931	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed test)

Note: All continuous- and ordinal-level variables are standardized (except for vignette number). Models exclude all respondents who failed three screener (or attention) questions.

Table 7.A.2. Two-Level Mixed-Effects Cross-Level Moderation Models of Relational Trust with Random Intercepts and Fixed Slopes and Standardized Coefficients, Without Failed Screeners Studies 1a and 1b

	Study 1a		Study 1b	
	β	s.e.	β	s.e.
Individual-level variables				
Age	-0.03†	0.02	-0.01	0.02
Male	0.06*	0.03	0.01	0.03
Non-Hispanic white (ref.)				
Non-white Hispanic	0.11	0.16	-0.26†	0.15
Non-white black	-0.13	0.08	0.0002	0.08
Non-white Asian	-0.05	0.07	0.05	0.07
Other race	-0.08†	0.05	0.01	0.05
Vignette-level variables				
Age: 20 years (ref.)				
Age: 30 years	0.08***	0.02	-0.0004	0.02
Age: 40 years	0.09***	0.02	0.02	0.02
Age: 50 years	0.11***	0.02	0.02	0.02
Age: 60 years	0.09***	0.02	0.01	0.02
Race: female (ref.)				
Race: male	-0.01	0.02	-0.02	0.02
Race: white (ref.)				
Race: black	-0.01	0.02	0.05*	0.02
Race: Hispanic	-0.02	0.02	-0.002	0.02
Race: Asian	0.001	0.02	0.04†	0.02
Cross-level interactions				
Age X Age: 30 years	0.02	0.02	0.02	0.02
Age X Age: 40 years	0.01	0.02	0.01	0.02
Age X Age: 50 years	-0.00004	0.02	0.04*	0.02
Age X Age: 60 years	-0.0001	0.02	0.02	0.02
Male X male	0.03	0.03	0.01	0.03
Non-white Hispanic X black	-0.18	0.19	0.19	0.15
Non-white Hispanic X Hispanic	-0.01	0.18	0.47**	0.16
Non-white Hispanic X Asian	-0.12	0.20	0.23	0.16
Non-white black X black	0.21*	0.09	0.03	0.09
Non-white black X Hispanic	0.22*	0.09	0.01	0.08
Non-white black X Asian	0.08	0.09	-0.05	0.08
Non-white Asian X black	0.06	0.08	-0.09	0.08
Non-white Asian X Hispanic	0.07	0.08	0.03	0.08
Non-white Asian X Asian	0.07	0.08	-0.02	0.08
Other race X black	0.15**	0.06	-0.10†	0.06
Other race X Hispanic	0.08	0.05	0.03	0.06
Other race X Asian	0.06	0.05	0.04	0.06
Constant	-0.61***	0.04	-0.55***	0.05
var(u_{0j})	0.09***	0.01	0.12***	0.01
var(e_{ij})	0.38***	0.01	0.37***	0.01
Other variables	Yes		Yes	
Observations	10135		9280	
Individuals	1018		931	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed test)

Note: All continuous- and ordinal-level variables are standardized (except for vignette number). Models exclude all respondents who failed three screener (or attention) questions.

Table 7.A.3. Two-Level Mixed Effects Models of Relational Trust with Random Intercepts and Fixed Slopes and Standardized Coefficients, Individual- and Vignette-Level Variables without Failed Screeners for Studies 2a and 2b

	Study 2a		Study 2b	
	β	s.e.	β	s.e.
Individual-level variables				
General social trust scale	0.01	0.03	0.08***	0.02
Particular social trust scale	0.10***	0.03	0.04	0.03
Political trust scale	0.08**	0.02	0.06*	0.03
Egoistic preferences (ref.)				
Social preferences	0.18**	0.05	0.04	0.06
Unclassified preferences	0.25*	0.10	0.04	0.11
Risk aversion	0.04†	0.02	0.003	0.02
Inequality aversion	0.07***	0.02	0.02	0.02
Betrayal aversion	-0.01	0.02	-0.05*	0.02
Lend possessions	-0.03	0.03	0.04	0.03
Lend money	0.02	0.02	-0.02	0.03
Door unlocked	0.02	0.02	-0.03	0.02
Age	-0.03	0.02	0.03	0.02
Male	-0.04	0.04	0.11*	0.05
Non-Hispanic white (ref.)				
Non-white Hispanic	0.07	0.11	0.05	0.13
Non-white black	0.43	0.30	0.32	0.44
Non-white Asian	0.04	0.06	0.05	0.06
Other race	0.15**	0.06	-0.05	0.06
Vignette-level variables				
Vignette number	-0.02***	0.003	-0.01***	0.003
Age: 20 years (ref.)				
Age: 30 years	-0.01	0.03	-0.04	0.03
Age: 40 years	0.04	0.03	-0.09**	0.03
Age: 50 years	0.07*	0.03	-0.10**	0.03
Age: 60 years	0.04	0.03	-0.08*	0.03
Race: white (ref.)				
Race: black	0.05†	0.03	0.07*	0.03
Race: Hispanic	0.04	0.03	0.06*	0.03
Race: Asian	0.03	0.03	0.04	0.03
Race: female (ref.)				
Race: male	0.04*	0.02	-0.01	0.02
Reputation: blank (ref.)				
Reputation: positive rep.	0.25***	0.02	0.17***	0.02
Halo: blank (ref.)				
Halo: bad computer	-0.31***	0.02	-0.33***	0.03
Halo: good computer	0.17***	0.02	0.11***	0.03
Competence: blank (ref.)				
Competence: competent	0.05**	0.02	0.04*	0.02
Exertion: blank (ref.)				
Exertion: hard-working	0.09***	0.02	0.10***	0.02
Per. Motives: no prior interaction (ref.)				
Per. Motives: uncooperative	-0.97***	0.04	-0.99***	0.04
Per. Motives: prior interaction	0.48***	0.04	0.50***	0.04

Per. Motives: encapsulated interests	0.50***	0.04	0.58***	0.04
Per. Motives: goodwill	0.81***	0.04	0.74***	0.04
Per. Motives: virtuous dispositions	0.76***	0.04	0.74***	0.04
Contract: blank (ref.)				
Contract: non-binding contract	-0.01	0.02	0.03	0.03
Contract: binding contract	0.26***	0.02	0.14***	0.03
Regulation: no regulations (ref.)				
Regulation: non-monetary regulations	0.25***	0.02	0.10***	0.03
Regulation: monetary regulations	0.29***	0.03	0.20***	0.02
Constant	-0.80***	0.07	-0.41***	0.08
var(u_{0j})	0.14***	0.01	0.16***	0.01
var(e_{ij})	0.38***	0.01	0.35***	0.01
Observations	4189		3698	
Individuals	422		375	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed test)

Note: All continuous- and ordinal-level variables are standardized (except for vignette number). Models exclude all respondents who failed three screener (or attention) questions.

Table 7.A.4. Two-Level Mixed-Effects Cross-Level Moderation Models of Relational Trust with Random Intercepts and Fixed Slopes and Standardized Coefficients, Without Failed Screeners Studies 2a and 2b

	Study 2a		Study 2b	
	β	s.e.	β	s.e.
Individual-level variables				
Age	-0.01	0.03	0.02	0.02
Male	-0.05	0.05	0.11*	0.05
Non-Hispanic white (ref.)				
Non-white Hispanic	-0.01	0.13	-0.26	0.17
Non-white black	0.39	0.36	0.54	0.71
Non-white Asian	-0.03	0.07	0.08	0.08
Other race	0.08	0.07	-0.06	0.07
Vignette-level variables				
Age: 20 years (ref.)				
Age: 30 years	-0.02	0.03	-0.04	0.03
Age: 40 years	0.04	0.03	-0.09**	0.03
Age: 50 years	0.03	0.03	-0.09**	0.03
Age: 60 years	0.01	0.04	-0.08*	0.03
Gender: female (ref.)				
Gender: male	0.03	0.03	-0.01	0.03
Race: white (ref.)				
Race: black	0.01	0.04	0.04	0.04
Race: Hispanic	-0.03	0.04	0.07†	0.04
Race: Asian	0.03	0.03	0.02	0.04
Cross-level interactions				
Age X Age: 30 years	-0.03	0.03	0.02	0.03
Age X Age: 40 years	-0.03	0.03	0.01	0.02
Age X Age: 50 years	-0.01	0.03	-0.01	0.03
Age X Age: 60 years	-0.02	0.03	-0.002	0.02
Male X male	0.01	0.04	-0.01	0.04
Non-white Hispanic X black	0.15	0.13	0.49**	0.17
Non-white Hispanic X Hispanic	0.14	0.15	0.39*	0.17
Non-white Hispanic X Asian	0.03	0.14	0.31†	0.17
Non-white black X black	-0.26	0.33	0.23	0.66
Non-white black X Hispanic	0.21	0.50	-0.91	0.66
Non-white black X Asian	0.52	0.39	0.52	0.84
Non-white Asian X black	0.07	0.07	-0.04	0.08
Non-white Asian X Hispanic	0.05	0.07	-0.06	0.08
Non-white Asian X Asian	0.15*	0.07	0.01	0.07
Other race X black	0.11	0.08	0.06	0.07
Other race X Hispanic	0.08	0.07	-0.02	0.07
Other race X Asian	0.11	0.08	0.01	0.07
Constant	-0.76***	0.07	-0.36***	0.06
var(u_{0j})	0.14***	0.01	0.16***	0.01
var(e_{ij})	0.38***	0.01	0.35***	0.01
Other variables	Yes		Yes	
Observations	4189		3698	
Individuals	422		375	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$ (two-tailed test)

Note: All continuous- and ordinal-level variables are standardized (except for vignette number). Models exclude all respondents who failed three screener (or attention) questions.

CHAPTER 8: DISCUSSION AND CONCLUSION

Trust is one of those rare concepts in the social sciences—like “race”, “identity”, and “Nation”—that inhabits a boundary space between the world of academics and laypeople. The former talk about trust as a vaccine that can cure social ills, build community, or reverse economic backwardness. The latter invoke trust whenever discussing friends, family, colleagues, teammates, and even political leaders. Although widely used by virtually everyone, there is no consensus about what trust means, how to measure it, or where it comes from. Because of this, what scholars know about trust is fragmented, disjointed, and Balkanized. The goal of the present dissertation was to cement and solidify our knowledge about trust via contributions to the conceptualization, measurement, and empirical origins of trust. Below I summarize the major contributions of each empirical chapter, outline general implications, and propose limitations and directions for future research.

Findings

In chapter 4, I investigated the political-institutional foundations of general social trust. I used various cross-national public-opinion data sets and employ pooled time-series OLS regression and fixed- and random-effects estimation techniques on an unbalanced, repeated cross-sectional panel of 74 countries and 248 observations spread over a 30-year time period. With these data and methods, I assessed the impact of five political-institutional factors—legal property rights, market regulations, labor market regulations, universality of socioeconomic provisions, and power-sharing capacities—on general social trust. I found that general social trust increases at an increasing rate with the quality of property rights institutions, that labor market regulations increase general social trust, and that power-sharing capacities of the state decrease general social trust. While general social trust increases as the government regulation of credit, business, and economic markets decreases and as the universality of socioeconomic provisions increases, both effects were more sensitive to the countries included and the modeling techniques employed than the other political-institutional factors. In short, the results suggested that political institutions simultaneously promote and undermine general social trust.

In chapter 5, I explored the notion that when people form beliefs about the trustworthiness of others with respect to particular matters (i.e., when individuals trust), they rely on stereotypes regarding the cooperativeness of individuals and organizations in general (i.e., social trust). Two vignette experiments conducted on Amazon.com's Mechanical Turk (N = 1,276 and N = 1,322) showed that measures of social trust do in fact produce relational trust (particular social trust > general social trust), a finding that was robust to numerous control variables and to replication studies conducted on two large random samples of undergraduate students (N = 884 and N = 841). These results support the idea that people rely on stereotypes concerned with the general cooperativeness and helpfulness of others when forming beliefs about another person's trustworthiness with respect to a particular matter at hand.

In chapter 6, a series of experiments adjudicated between classic models of commitment—social constraints view, encapsulated interests view, goodwill view, and virtuous dispositions view—and tested novel hypotheses about causal attributions and other-praising emotions as moderating and mediating effects, respectively. In studies 1a and 1b, web-based vignette experiments conducted on Amazon.com's Mechanical Turk (N = 1,135 and N = 1,036) yielded strong support for all four perspectives as well as novel predictions about the inequality of effects (goodwill = virtuous dispositions > encapsulated interest > social constraint) and the interaction of causal attributions and social constraints in their influence on trust. In studies 2a and 2b, web-based vignette experiments conducted on large random samples of undergraduate students (N = 493 and N = 474) replicated prior findings and provided evidence for gratitude and admiration as plausible mechanisms connecting perceived motivations to trust (gratitude > admiration), with larger mediating effects—as predicted—for goodwill and virtuous dispositions than for encapsulated interests and social constraints. Together, the results suggest that trust can spring from multiple forms of commitment and that cognitive biases as well as other-praising emotions play an important role in its development.

In chapter 7, I explored the features of a trust relationship that exert the greatest impact on relational trust. Data from four vignette experiments found in chapters 5 and 6 showed that characteristics of a truster (i.e., general social trust and particular social trust), characteristics of a trustee (i.e., reputational effects, halo effects, and perceived competence, exertion, and commitment), and forces external to a truster-trustee exchange relationship (i.e., social constraints) all matter for the development of relational trust. Moderate to weak evidence was found for status characteristics (characteristic of a trustee) and social identity (truster-trustee relationship), respectively. Overall, perceived motivations had a greater impact on relational trust than any other factor. These results support the idea that people rely on multiple sources of information within, between, and beyond individuals when forming trust.

Taken together, the empirical chapters show that relational trust is a product of the situation and environment in which a person is embedded but that variation exists across peoples' base-levels of relational trust. National context explains some of this variation via general social trust, which partially accounts for why individuals have high (and low) mean-levels of relational trust. In spite of this, the bulk of the variation in relational trust is explained by processes at the dyadic and relational levels. The findings show that perceived motivations of a trustee exert the greatest impact on relational trust with attribution biases and other-praising emotions acting as moderating and mediating effects, respectively. Importantly, these novel empirical findings hinge on a clear and concise definition of trust (relational trust) and a research design (vignette experiments) able to capture the conceptual features and causal foundations of trust. Below I outline the various theoretical, methodological, and practical implications.

Contributions

The present dissertation offers three broad contributions to the trust literature in terms of conceptualization, measurement, and origins. The sum of my theoretical work indicates that trust is best conceived as a cognitive-relational concept in which beliefs, trustworthiness, particular matters, and unknown outcomes constitute core features of the concept. More precisely, I define trust—or what I call *relational trust*—as a *belief about another person's trustworthiness with respect to a particular matter at hand that emerges under conditions of unknown outcomes*. I define trustworthiness as the capacity *and* motivation of a person to fulfill the goals and desires of another person; where capacity refers to ability and competence, and motivation refers to exertion and commitment. We can thus see that relational trust takes the following form in combination with the components of trustworthiness: A (the truster) trusts B (the trustee) when A believes that B is capable *and* motivated to perform matter Y (what A wants B to do) under conditions of unknown outcomes. With this definition, I am able to establish that trust includes very specific cognitive processes and excludes a great many others (e.g., risk-taking and perceived risk) often confused for trust by other trust scholars. I also reveal how the supposed *varieties of trust*—including general social trust—encapsulate concepts that are, in fact, not trust but can be described as causes or consequences of trust. In short, the present dissertation offers a definition of trust that is clear, precise, and measurable.

Building from this conceptualization, my dissertation calls for a research design that is able to capture the core features of relational trust and its various causal influences including characteristics of a truster, characteristics of a trustee, characteristics of an A-B exchange relationship, and characteristics of social forces beyond—or external to—an A-B exchange relationship. I used vignette experiments to accomplish this task. In particular, I constructed two unique vignettes consisting of a 'car repair' scenario and a 'group project' scenario where respondents assessed the trustworthiness of a simulated auto mechanic or group member, respectively. The overall goal was to provide the scientific community with an alternative research design that (i) better assesses and takes into account the key elements of relational trust—beliefs, unknown outcomes, trustworthiness, and the particular matters at hand, (ii) investigates trust formation under simulated conditions commonly found in the real-world (as opposed to artificial laboratory conditions rarely observed in the real-world), and (iii) tests and evaluates the comparative explanatory power of hypotheses concerned with individuals, relations, and situations.

With this conceptualization and unique research design, my work contributed to the trust literature in a number of important respects. To begin with, my dissertation was the first study to explore the political-institutional origins of general social trust through time with random- and fixed-effects panel models, revealing how political institutions—depending on their content and form—crowd-in *and* crowd-out general social trust. Second, my work was the first to show how general social trust *and* particular social trust positively influence relational trust even after controlling for confounding microfoundations such as risk aversion, betrayal aversion, and social preferences, with the latter (particular social trust) having a greater impact on relational trust than the former (general social trust). Third, the present dissertation was also the first study to adjudicate between classic models of commitment, showing how causal attributions moderate the impact of social constraints on relational trust *and* revealing how other-praising emotions partially mediate the relationship between perceived motivations and relational trust. Fourth, my work was the first to compare and contrast the size of effects for causes of relational trust, showing how perceived motivations—a characteristic of a trustee—had a greater impact on relational trust than any other source. Fifth, my dissertation was the first study of trust to use a between- *and* within-person experimental design, ultimately revealing how within-person variations (or vignette-to-vignette situational differences) constitute the bulk of variation observed in relational trust (anywhere from 75% to 91% of the variation depending on the experiment). Finally, my work is significant as key findings were highly robust to participant samples (Amazon.com Mechanical Turk workers and University of Washington undergraduate students) and sampling methods (purposive and random sampling), suggesting that false-positive results—an issue that currently plagues the psychological sciences and is rarely addressed in the trust literature—were greatly reduced.

In the end, this work has possible implications for the broader social psychological literature on belief formation. Perhaps most obviously, beliefs can spring from a multitude of varying inputs that are psychological (e.g., cognitive dissonance, wishful thinking, etc.) and sociological in nature (e.g., the media, socialization, etc.). Whether cognitive dissonance theory, wishful thinking, or the media served to influence trust formation in the present dissertation is an outstanding question. The point is, however, that psychological and sociological mechanisms serve to influence trust formation much like beliefs in general. The current research, then, makes visible the extent to which processes internal to and external to a truster influence the beliefs they form about a trustee, yielding results that scholars of belief formation will find of interest.

Limitations and Future Research

The present dissertation is not without limitations or directions for future research.

In chapter 4, my goal was to explore the political-institutional origins of general social trust with longitudinal statistical techniques and the largest known pseudo-panel of general social trust data. Although insightful, three avenues of future research are available. First, many of the data sources, including the World Values Survey and various barometers (e.g., Latinobarometer), have recently published data collected since 2009. Adding this data to the current unbalanced and rotating pseudo-panel would greatly reduce bias since a moderate number of units (i.e., greater than 50 countries but less than 100) with less than five observations (or time-points) per unit constitute the panel. Building from this issue, the panel used in the present dissertation is also biased toward developed and developing nations. Without more observations of undeveloped countries such as Djibouti and Sierra Leone, it is difficult to determine how and to what extent the findings for legal property rights and power-sharing capacity are biased. The only way to alleviate this issue is to include observations from such sources. This is easier said than done. The only solution is to wait until large public opinion polls gain access to these countries and happen to ask questions concerned with general social trust. Such a solution, however, might not happen for decades, if ever. Third, future research should employ alternative statistical techniques, namely decomposition models that allow researchers to simultaneously explore the effects of political-institutions on general social trust between countries *and* the annual effect of political institutions on general social trust within particular countries. Such a method is worthwhile as random-effects models only provide estimates that capture the *combined effect* of between-country and within-country components (i.e., random-effects models do not decompose estimates), while fixed-effects models only provide estimates that capture within-country components.

In chapter 5, I explored the effects of social trust on relational trust. To accomplish this task, my study started with respondents assessing 10 randomized vignettes followed by a number of conventional survey items measuring age, race, gender, and income among others. Following these questions, respondents were then asked a series of attitudinal survey items about general social trust, particular social trust, political trust, and preferences for risk, betrayal, and the utility of others to name a few. This study structure was chosen instead of the reverse for two reasons (i.e., attitudinal and conventional survey items followed by 10 randomized vignettes): (i) first assessing attitudinal survey items explicitly about trust might bias vignette-level dependent variables about relational trust posed afterwards, and (ii) vignettes asked at the end of a study might suffer more from biases associated with cognitive fatigue than attitudinal and conventional survey items since such items do not require multiple bits of information derived from vignette dimensions—and hence cognitive attention and awareness—to answer. Yet, the study's structure lends itself to priming and anchoring effects. That is, a respondent might anchor on their prior vignette responses when forming beliefs about trust in friends, family, strangers, and political institutions. This would produce an unobserved reflection problem in which levels of general social trust are, in part, a product of relational trust. To explore how sensitive the results presented in chapter 5 are to priming and anchoring effects, future research should randomize the order in which components of the study—vignette components versus conventional survey components—are presented.

In chapter 6, a series of experiments adjudicated between classic models of commitment—social constraints view, encapsulated interests view, goodwill view, and virtuous dispositions view—and tested novel hypotheses about causal attributions and other-praising emotions as moderating and mediating effects, respectively. In general, I found that perceptions of goodwill and virtuous dispositions impacted relational trust to a great extent with gratitude and admiration acting as plausible mechanisms connecting perceived motivations to relational trust. In spite of these novel findings, future research should explore a number of outstanding questions. For instance, what are the different conditions in which goodwill and virtuous dispositions impact relational trust? It might be that the relationship between goodwill and relational trust is conditional on prior interaction with a truster (i.e., the only way for me to know that you care for and are concerned about my interests is through prior exchange), while such a condition is unnecessary for virtuous dispositions (i.e., knowledge about your virtue could be based on how you have treated others in the past). Since the current dissertation operationalizes goodwill and virtuous dispositions in terms of prior successful exchange, the conditionality of these perceived motivations should be investigated in the future. Building from this: What signals of goodwill and virtuous dispositions are available for a trustee to send a possible truster? Obvious answers include generosity and gift-giving, but are there other non-behavioral signals a trustee can send a truster? For me, the answer is no: the only reliable signal a trustee can send is one in which he or she incurs a personal cost at the benefit of the truster (especially one without the obligation on the part of the truster to return the favor). In the future, research should explore (a) the inflection point at which trust no longer increases with greater amounts of generosity, (b) the saturation point at which acts of generosity no longer increase trust, and (c) whether monetary and non-monetary forms of generosity impact relational trust to the same extent.

In chapter 7, I investigated multiple competing sources of relational trust found within, between, and beyond individuals and their exchange relationships. Using data derived from chapters 5 and 6, I discovered that trust emerges from each of these sources, but that perceived motivations (i.e., characteristics of a trustee) influenced relational trust to the greatest extent. I did not, however, find strong evidence for the role of social identity in producing relational trust. Yet, a number of issues might have accounted for these null findings. First, and foremost, future research should explore alternative categorical memberships such as religious groups and sports teams, since age, race, and gender may no longer invoke social identity processes as they once did. Similarly, future research should investigate finer-grained forms of "high salience" categorical memberships. That is, it might be the case that fellow auto mechanics ('car repair' scenario) or data analysts ('group project' scenario) generate the in-group/out-group dynamics necessary for social identity to influence relational trust. Taken together, much more research is required to fully understand the role of social identity in forming trust.

Conclusion

I began this dissertation by noting how consensus about the conceptualization and measurement of trust is a myth. I offered relational trust and two novel vignette experiments as a solution to these outstanding issues. I derived and tested a number of hypotheses from competing traditions within the trust literature. With these tools, I found that the foundations of trust are varied, ranging from the psychological to the relational to the situational. In the end, such an integrative approach across various levels of analysis obtained a deeper understanding of trust that has yet to be observed in the social sciences.

REFERENCES

Abikoff, Howard, Mary Courtney, William E. Pelham, Jr., and Harold S. Koplewicz. 1993. “Teachers’ Ratings of Disruptive Behaviors: The Influence of Halo Effects.” *Journal of Abnormal Child Psychology* 21: 519-33.

Abrams, Dominic and Michael A. Hogg. 1990. “Social Identification, Self-Categorization and Social Influence.” *European Review of Social Psychology* 1: 195-228.

Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2001. “The Colonial Origins of Comparative Development: An Empirical Investigation.” *The American Economic Review* 91: 1369-1401.

Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2005. "The rise of Europe: Atlantic trade, institutional change, and economic growth." *American Economic Review* 95:546-579.

Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2008. “The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth.” *The American Economic Review* 95: 546-579.

Aghion, Philippe, Yann Algan, Pierre Cahuc, Andrei Shleifer. 2010. “Regulation and Distrust.” *The Quarterly Journal of Economics* 125: 1015-49.

Alesina, Alberto and Eliana La Ferrara. 2002. “Who Trusts Others?” *Journal of Public Economics* 85: 207-34.

Algan, Yann and Pierre Cahuc. 2010. “Inherited Trust and Growth.” *American Economic Review* 100: 2060-92.

Algoe, Sara B. and Jonathan Haidt. 2009. “Witnessing Excellence in Action: The ‘Other-Praising’ Emotions of Elevation, Gratitude, and Admiration.” *Journal of Positive Psychology* 42: 105-27.

Algoe, Sara B., Jonathan Haidt, and Shelly L. Gable. 2008. “Beyond Reciprocity: Gratitude and Relationships in Everyday Life.” *Emotion* 8: 425-429.

Algoe, Sara B. and Baldwin M. Way. 2014. “Evidence for a Role of the Oxytocin System, Indexed by Genetic Variation in CD38, in the Social Bonding Effects of Expressed Gratitude.” *Social Cognitive and Affective Neuroscience*: Forthcoming.

Allison, Paul D. 2002. *Missing Data*. Thousand Oaks: Sage Publications, Inc.

Allison, Scott T. and David M. Messick. 1990. “Social Decision Heuristics in the Use of Shared Resources.” Journal of Behavioral Decision Making 3: 195-204.

Allport, Gordon. 1954. *The Nature of Prejudice*. Addison-Wesley.

Almond, Gabriel A. and Sidney Verba. 1963. *The Civic Culture*. Princeton, NJ: Princeton University Press.

Alves, Wayne M. and Peter H. Rossi. 1978. "Who Should Get What? Fairness Judgments of the Distribution of Earnings." *American Journal of Sociology* 84: 541-64.

Andreoni, James. 1995. "Cooperation in Public Goods Experiments: Kindness or Confusion?" *American Economic Review* 85: 891-904.

Aronson, Elliot. 1969. "The Theory of Cognitive Dissonance: A Current Perspective." In L. Berkowitz (ed.), *Advances in Experimental Social Psychology* 4: 1-34. New York, NY: Academic Press.

Arrow, Kenneth J. 1972. "Gifts and Exchange." *Philosophy and Public Affairs* 1: 343-62.

Auspurg, Katrin, Thomas Hinz, and Stefan Liebig. 2010. "Complexity, Learning Effects, and Plausibility of Vignettes in Factorial Surveys." Pp. 27 in *Working Paper # 4 of the DFG-Project "The Factorial Survey as a Method for Measuring Attitudes in Population Surveys: University of Konstanz/Bielefeld University*.

Axelrod, Robert. 1984. *The Evolution of Cooperation*. Basic Books.

Babcock, Linda and George Loewenstein. 1997. "Explaining Bargaining Impasse: The Role of Self-Serving Biases." *Journal of Economic Perspectives* 11: 109-26.

Badescu, Gabriel. 2003. "Social Trust and Democratization in the Post-Communist Societies." Pp. 120-139 in *Social Capital and Transition to Democracy* edited by G. Badescu and E. M. Uslaner. London: Routledge.

Baier, Annette. 1986. "Trust and Antitrust." *Ethics* 96: 231-260.

Baldwin, Mark W. 1992. "Relational Schemas and the Processing of Social Information." *Psychological Bulletin* 112:461-84.

Bandiera, Oriana, Iwan Rasul, and Imran Barankay. 2005. "Social Preferences and the Response to Incentives: Evidence from Personal Data." *Quarterly Journal of Economics* 120: 917-62.

Bandura, Albert. 1977. *Social Learning Theory*. New York, NY: General Learning Press.

Banfield, Edward C. 1958. *The Moral Basis of a Backward Society*. New York, NY: Free Press.

Barber, Bernard. 1983. *The Logic and Limits of Trust*. New Brunswick, NJ: Rutgers University Press.

Barrera, D., V. Buskens, and W. Raub. 2012. "Embedded Trust: The Analytical Approach in Vignettes, Laboratory Experiments and Surveys." Pp. 199-211 in *Handbook of Research Methods on Trust*, edited by F. Lyon, G. Mollering, and M. N. K. Saunders. Cheltenham: Edward Elgar Publishing Limited

Bauer, Daniel J., Kristopher J. Preacher, and Karen M. Gil. 2006. "Conceptualizing and Testing Random Indirect Effects and Moderated Mediation in Multilevel Models: New Procedures and Recommendations." *Psychological Methods* 11: 142-163.

Bauer, Paul C. and Markus Freitag. 2013. "Personality and the Foundations of Social Trust." American Political Science Association 2013 Annual Meeting: *EPSA 2013 Annual General Conference Paper 103*. Available on SSRN.

Baumeister, Roy F., Ellen Bratslavsky, Catrin Finkenauer, and Kathleen D. Vohs. 2001. "Bad is Stronger than Good." *Review of General Psychology* 5: 323-370.

Baumgartner, Thomas, Markus Heinrichs, Aline Vonlanthen, Urs Fischbacher, and Ernst Fehr. 2008. "Oxytocin Shapes the Neural Circuitry of Trust and Trust Adaptation in Humans." *Neuron* 58: 639-50.

Begley, C. Glenn and Lee M. Ellis. 2012. "Raise Standards for Preclinical Cancer Research." *Nature* 483: 531-33.

Bellemare, Charles and Sabine Kröger. 2007. "On Representative Social Capital." *European Economic Review* 51: 183-202.

Bendix, Reinhard. 1964. *Nation-Building and Citizenship*. New York: Wiley.

Benz, Matthias and Stephan Meier. 2008. "Do People Behave in Experiments as in the Field?—Evidence from Donations." *Experimental Economics* 11: 268-281.

Berg, Joyce, John W. Dickhaut, and Kevin A. McCabe. 1995. "Trust, Reciprocity, and Social History." *Games and Economic Behavior* 10: 122-42.

Berger, Joseph, Bernard P. Cohen, and Morris Zelditch, Jr. 1972. "Status Characteristics and Social Interaction." *American Sociological Review* 37: 241-55.

Berger, Joseph and T. Conner. 1969. "Performance-Expectations and Behavior in Small Groups." *Acta Sociologica* 12: 186-198.

Berggren, Niclas and Henrik Jordahl. 2006. 'Free to Trust: Economic Freedom and Social Capital.' *Kyklos* 59: 141-169.

Bergh, Andreas and Christian Bjørnskov 2011. "Historical Trust Levels Predict the Current Size of the Welfare State." *Kyklos* 64: 1-19.

Berinsky, Adam J., Gregory S. Huber, and Gabriel S. Lenz. 2012. “Evaluating Online Labor Markets for Experimental Research: Amazon.com’s Mechanical Turk”. *Political Analysis* 20: 351-68.

Berinsky, Adam J., Michele F. Margolis, and Michael W. Sances. 2014. “Separating the Shirkers from the Workers? Making Sure Respondents Pay Attention on Self-Administered Surveys.” *American Journal of Political Science* 58: 739-53.

Bjørnskov, Christian. 2007. “Determinants of Generalized Trust: A Cross-Country Comparison.” *Public Choice* 130: 1-21.

Bjørnskov, Christian. 2008. “Social Trust and Fractionalization: A Possible Reinterpretation.” *European Sociological Review* 24: 271-283.

Bjørnskov, Christian. 2010. “How Does Social Trust Lead to Better Governance? An Attempt to Separate Electoral and Bureaucratic Mechanisms.” *Public Choice* 144: 323-46.

Blalock, Hubert. 1979. “The Presidential Address: Measurement and Conceptualization Problems: The Major Obstacle to Integrating Theory and Research.” *American Sociological Review* 44: 881-894.

Blau, Peter. 1964. *Exchange and Power in Social Life*. New York: Wiley.

Bohnet, Iris and Richard Zeckhauser. 2004. “Trust, Risk and Betrayal.” *Journal of Economic Behavior & Organization* 55: 467-484.

Bohnet, Iris, Bruno S. Frey, and Steffen Huck. 2001. ‘More Order with Less Law: On Contract Enforcement, Trust, and Crowding.’ *American Political Science Review* 95: 131-44.

Boix, Carles and Daniel N. Posner. 1998. "Social capital: Explaining its origins and effects on government performance." *British Journal of Political Science* 28:686-693.

Boksem, Maarten A. S., Pranjal H. Mehta, Bram Van den Bergh, Veerle van Son, Stefan T. Trautmann, Karin Roelofs, Ale Smidts, and Alan G. Sanfre. In press. “Testosterone Inhibits Trust but Promotes Reciprocity.” Psychological Science.

Bonacich, Edna. 1973. “A Theory of Middlemen Minorities.” *American Sociological Review* 38: 583-94.

Bos, Peter A., David Terburg, and Jack van Honk. 2010. “Testosterone Decreases Trust in Socially Naïve Humans.” *PNAS* 107: 9991-5.

Bowles, Samuel. 2008. “Policies Designed for Self-Interested Citizens May Undermine ‘The Moral Sentiments’: Evidence from Economic Experiments.” *Science* 320: 1605-1609.

Brambor, Thomas, William Roberts Clark, and Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analysis." *Political Analysis* 14: 63-82.

Brehm, John and Wendy Rahn. 1997. "Individual-Level Evidence for the Causes and Consequences of Social Capital." *American Journal of Political Science* 41: 999-1023.

Brewer, Marilynn B. 1999. "The Psychology of Prejudice: Ingroup Love or Outgroup Hate?" *Journal of Social Issues* 55: 429-44.

Brewer, Marilynn B. 2008. "Depersonalized Trust and Ingroup Cooperation." In J. I. Krueger (Ed.), *Rationality and Social Responsibility* (pp. 215-32). New York, NY: Psychology Press.

Brewer, Marilynn B. and Donald T. Campbell. 1976. *Ethnocentrism and Intergroup Attitudes: East African Evidence*. Sage.

Brewer, Marilynn B. and Roderick M. Kramer. 1986. "Choice Behavior in Social Dilemmas: Effects of Social Identity, Group Size and Decision Framing." *Journal of Personality and Social Psychology* 50: 543-49.

Brewer, Marilynn B. and Norman N. Miller. 1996. *Intergroup Relations*. Philadelphia, PA: Open University Press.

Buchan, Nancy R., Marilynn B. Brewer, Gianluca Grimalda, Rick K. Wilson, Enrique Fatas, and Margaret Foddy. 2011. "Global Social Identity and Global Cooperation." *Psychological Science* 22: 821-28.

Burnham, Terence, Kevin McCabe, and Vernon L. Smith. 2000. "Friend-or-Foe Intentionality Priming in an Extensive Form Trust Game." *Journal of Economic Behavior and Organization* 43: 57-73.

Buskens, Vincent. 1998. "The Social Structure of Trust." *Social Networks* 20: 265-89.

Buskens, Vincent. 2002. *Social Networks and Trust*. Netherlands: Kluwer.

Buskens, Vincent, Werner Raub, and Joris van der Veer. 2010. "Trust in Triads: An Experimental Study." *Social Networks* 32: 301-12.

Buskens, Vincent and Jeroen Weesie. 2000. "An Experiment on the Effects of Embeddedness in Trust Situations: Buying a Used Car." *Rationality and Society* 12: 227-253.

Butler, Jeffery, Paola Giuliano, and Luigi Guiso. 2013. *Trust, Values and False Consensus*. Unpublished manuscript.

Campos-Castillo, Celeste and Kwesi Ewoodzie. 2014. "Relational Trustworthiness: How Status Affects Intra-Organizational Inequality in Job Autonomy." *Social Science Research* 44: 60-74.

Carifio, James and Marilyn Lanza. 1995. "Empirical Finding on the External Validity of Patient Assault Vignettes." *Work* 5: 265-76.

Chaiken, Shelly. 1980. "Heuristic Versus Systematic Information Processing and the Use of Source Versus Message Cues in Persuasion." *Journal of Personality and Social Psychology* 39: 752-766.

Chen, Xiao-Ping, Madan M. Pillutla, Xin Yao. 2009. "Unintended Consequences of Cooperation Inducing and Maintaining Mechanisms in Public Goods Dilemmas: Sanctions and Moral Appeals." *Group Processes & Intergroup Relations* 12: 241-255.

Choong, Peggy, Shih-Jen Ho, Robert A. McDonald. 2002. "An Examination of the Effects of Social Desirability Bias on Business Ethics: Research Results." *International Journal of Management* 19: 3-9.

Cingranelli, David L. and David L. Richards. 2008. *CIRI Human Rights Data Project*. www.humanrightsdata.org

Clark, Margaret S. and Judson Mills. 1979. "Interpersonal Attraction in Exchange and Communal Relationships." *Journal of Personality and Social Psychology* 37: 12-24.

Coleman, James. 1990. *Foundations of Social Theory*. Cambridge, MA: Harvard University Press.

Collett, Jessica L. 2011. "(Re)Integrating Simmel in Contemporary Social Exchange: The Effect of Nonpartisans on Relational Outcomes." *Social Forces* 90: 617-38.

Collett, Jessica L. and Ellen Childs. 2011. "Minding the Gap: Meaning, Affect, and the Potential Shortcomings of Vignettes." *Social Science Research* 40:513-22.

Colquitt, Jason A., Brent A. Scott, and Jeffery A. LePine. 2007. "Trust, Trustworthiness, and Trust Propensity: A Meta-Analytic Test of their Unique Relationships with Risk Taking and Job Performance." *Journal of Applied Psychology* 92: 909-27.

Cook, Karen S., Russell Hardin, and Margaret Levi. 2005. *Cooperation without Trust?* New York: Russell Sage Foundation.

Cook, Karen S., Toshio Yamagishi, Coye Cheshire, Robin Cooper, Masafumi Matsuda, Rie Mashima. 2005. "Trust Building via Risk Taking: A Cross-Societal Experiment." *Social Psychology Quarterly* 68: 121-142.

Cox, James C. 2004. "How to Identify Trust and Reciprocity." *Games and Economic Behavior* 46: 260-81.

Cox, James C., Daniel Friedman, and Vjollca Sadiraj. 2008. "Revealed Altruism."

Econometrica 76: 31-69.

Cuddy, Amy J. C., Michael I. Norton, and Susan T. Fiske. 2005. "This Old Stereotype: The Pervasiveness and Persistence of the Elderly Stereotype." *Journal of Social Issues* 61: 267-285.

Cullen, Francis, Bruce Link, Lawrence Travis, and John Wozniak. 1985. "Consensus in Crime Seriousness: Empirical Reality or Methodological Artifact?" *Criminology* 23: 99-118.

Dasgupta, Partha. 1988. "Trust as a Commodity." In *Trust: Making and Breaking Cooperative Relations* (pp. 49-72), edited by Diego Gambetta. New York: Basil Blackwell.

Deaux, Kay. 1996. "Social Identification." In *Social Psychology: Handbook of Basic Principles* (pp. 777-98), edited by E. Tory Higgins and Arie W. Kruglanski. Guilford Press.

Deci, Edward L. 1971. "Effects of Externally Mediated Rewards on Intrinsic Motivation. *Journal of Personality and Social Psychology* 18: 105-15.

Deci, Edward L. 1975. *Intrinsic Motivation*. New York: Plenum Press.

Deci, E. L. and R. Flaste. 1995. *Why do we do what we do: The Dynamics of Personal Autonomy*. New York, NY: Putnam's Sons.

Deci, E. L., Richard Koestner, and Richard M. Ryan. 1999. "A Meta-Analytic Review of Experiments Examining the Effects of Extrinsic Rewards on Intrinsic Motivation." *Psychological Bulletin* 125: 627-668.

Delhey, Jan and Kenneth Newton. 2005. "Predicting Cross-National Levels of Social Trust: Global Pattern or Nordic Exceptionalism?" *European Sociological Review* 21: 311-27.

Delhey, Jan, Kenneth Newton, and Christian Welzel. 2011. "How General is Trust in "Most People"? Solving the Radius of Trust Problem." *American Sociological Review* 76: 786-807.

Deutsch, Morton. 1958. "Trust and Suspicion." *Journal of Conflict Resolution* 2: 265-79.

Deutsch, Morton. 1960. "The Effect of Motivational Orientation upon Trust and Suspicion." *Human Relations* 13: 123-139.

Diamond, Stanley. 1971. 'The Rule of Law versus the Order of Custom.' *Social Research* 38: 42-72.

Diefenbach, Heike and Karl-Dieter Opp. 2007. "When and Why do People Think There Should be a Divorce? An Application of the Factorial Survey." *Rationality and Society* 19: 485-517.

Dincer, Oguzhan C. and Eric M. Uslaner. 2010. "Trust and Growth." *Public Choice* 142: 59-67.

Dinesen, Peter T. 2009. "Upbringing, Early Experiences of Discrimination and Social Identity: Explaining Generalized Trust among Immigrants in Denmark." *Scandinavian Political Studies* 33: 93-111.

Dinesen, Peter T. 2013. "Where You Come From or Where You Live? Examining the Cultural and Institutional Explanation of Generalized Trust Using Migration as a Natural Experiment." *European Sociological Review* 29:114-128.

DiPrete, Thomas A., Andrew Gelman, Tyler McCormick, Julien Teitler, and Tian Zheng. 2011. "Segregation in Social Networks Based on Acquaintanceship and Trust." *American Journal of Sociology* 116: 1234-83.

Doty, Richard L. and Colin Silverthorne. 1975. "Influence of Menstrual Cycle on Volunteering Behavior." *Nature* 254: 139-40.

Dovidio, John F., Karen Heltman, Clifford E. Brown, Steve L. Ellyson, and Caroline F. Keating. 1988. "Power Displays Between Women and Men in Discussions of Gender-Linked Tasks: A Multichannel Study." *Journal of Personality and Social Psychology* 55: 580-587.

Druckman, James N. and Arthur Lupia. 2000. "Preference Formation." *Annual Review of Political Science* 3: 1-24.

Dülmer, Hermann. 2007. "Experimental Plans in Factorial Surveys: Random or Quota Samples?" *Sociological Methods & Research* 35: 382-409.

Dunn, Jennifer R. and Maurice E. Schweitzer. 2005. "Feeling and Believing: The Influence of Emotion on Trust." *Journal of Personality and Social Psychology* 88: 736-48.

Dunning, David and Detlef Fetchenhauer. 2010. "Trust as an Expressive rather than an Instrumental Act." In S. R. Thye and E. J. Lawler (Eds.), *Advances in Group Processes*, Volume 27 (pp. 97-127). Emerald Group Publishing Limited.

Durkheim, Emile. [1893]1984. *The Division of Labor in Society*. London, UK: MacMillan.

Eagly, Alice H. and Antonio Mladinic. 1989. "Gender Stereotypes and Attitudes Toward Women and Men." *Personality and Social Psychology Bulletin* 15: 543-558.

Elsbach, Kimberly D. and Greg Elofson. 2000. "How the Packaging of Decision Explanations Affects Perceptions of Trustworthiness." *Academy of Management Journal* 43: 80-89.

Elster, Jon. 1979. *Ulysses and the Sirens: Studies in Rationality and Irrationality*. Cambridge: Cambridge University Press.

Elster, Jon. 2000. "Rational Choice History: A Case of Excessive Ambition." *American Political Science Review* 94: 685-95.

Elster, Jon. 2007. *Explaining Social Behavior: More Nuts and Bolts for the Social Sciences*. Cambridge: Cambridge University Press.

Elster, Jon. 2009. "Emotions." In Peter Bearman and Peter Hedström (Eds.), *The Oxford Handbook of Analytical Sociology* (pp. 51-71). Oxford, UK: Oxford University Press.

Ensminger, Jean. 2000. "Experimental Economics in the Bush: How Institutions Matter." In *Institutions and Organizations*, Claude Menard (ed.). London: Edward Elgar.

Emerson, Michael O., George Yancey, and Karen J. Chai. 2001. "Does Race Matter in Residential Segregation? Exploring the Preferences of White Americans." *American Sociological Review* 66: 922-935.

Emerson, Richard. 1972a. "Exchange Theory, Part I: A Psychological Basis for Social Exchange." In J. Berger, M. Zelditch, Jr., and B. Anderson (Eds.), *Sociological Theories in Progress*, Vol. 2 (pp. 38-57). Boston, MA: Houghton-Mifflin.

Emerson, Richard. 1972b. "Exchange Theory, Part II: Exchange Rules and Networks." In J. Berger, M. Zelditch, Jr., and B. Anderson (Eds.), *Sociological Theories in Progress*, Vol. 2 (pp. 58-87). Boston, MA: Houghton-Mifflin.

Emmons, Robert A. and Michael E. McCullough. 2003. "Counting Blessings versus Burdens: An Experimental Investigation of Gratitude and Subjective Well-Being in Daily Life." *Journal of Personality and Social Psychology* 84: 377-89.

Ermisch, John, Diego Gambetta, Heather Laurie, Thomas Siedler, and S. C. Noah Uhrig. 2009. 'Measuring People's Trust.' *Journal of the Royal Statistical Society* 172: 749-69.

Esping-Andersen, Gøsta. 1990. *The Three Worlds of Welfare Capitalism*. Cambridge, UK: Polity Press.

Etzioni, Amitai. 1995. *The Spirit of Community*. London: Fontana Books.

Fairbrother, Malcolm and Issac W. Martin. 2013. "Does Inquality Erode Social Trust? Results from Multilevel Models of US States and Counties." *Social Science Research* 42:347-360.

Falk, Armin, Stephan Meier, and Christian Zehnder. 2010. "Did we Overestimate the Role of Social Preferences? The Case of Self-Selected Student Samples." CEPR Discussion Paper No. DP8019.

Farrell, Henry. 2009. *The Political Economy of Trust: Institutions, Interests, and Inter-Firm Cooperation in Italy and Germany*. Cambridge, MA: Cambridge University Press.

Fehr, Ernst. 2009. "On the Economics and Biology of Trust." *Journal of the European Economic Association* 7: 235-66.

Fehr, Ernst and Armin Falk. 2001. "Psychological Foundations of Incentives." *European Economic Review* 46: 687-724.

Fehrler, Sebastian and Wojtek Przepiorka. 2013. "Charitable Giving as a Signal of Trustworthiness: Disentangling the Signaling Benefits of Altruistic Acts." *Evolution and Human Behavior* 34: 139-146.

Festinger, Leon. 1957. *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press.

Finch, Janet. 1987. "The Vignette Study in Survey Research." *Sociology* 21: 105-114.

Fishbein, Martin. 1963. "An Investigation of the Relationships between Beliefs about an Object and the Attitude toward that Object." *Human Relations* 16: 233-239.

Fishbein, Martin and Icek Ajzen. 1975. *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley Pub.

Fiske, Susan T. 1998. "Stereotyping, Prejudice, and Discrimination." In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of Social Psychology* (4th ed., Vol. 2, pp. 357-411). New York, NY: McGraw-Hill.

Flanagan, Constance A. and Michael Stout. 2010. "Developmental Patterns of Social Trust between Early and Late Adolescence: Age and School Climate Effects." *Journal of Research on Adolescence* 20: 748-73.

Flap, Henk and Beate Völker. 2003. "Communist Societies, the Velvet Revolution, and Weak Ties." In *Social Capital and the Transition to Democracy*, eds G. Badescu and E. Uslaner. London, UK: Routledge.

Foddy, Margaret, Michael J. Platow, and Toshio Yamagishi. 2009. "Group-Based Trust in Strangers: The Role of Stereotypes and Expectations." *Psychological Science* 20: 419-22.

Fredrickson, B. L. 1998. "What Good are Positive Emotions?" *Review of General Psychology* 2: 300–19.

Freedom in the World. 2008. *Freedom in the World: Historical Data*. http://www.freedomhouse.org.

Freitag, Markus and Paul C. Bauer. 2013. "Testing for Measurement Equivalence in Surveys Dimensions of Social Trust across Cultural Contexts." *Public Opinion Quarterly* 77:24-44.

Freitag, Markus and Marc Bühlmann. 2009. "Crafting Trust: The Role of Political Institutions in a Comparative Perspective." *Comparative Political Studies* 42: 1537-66.

Freitag, Markus and Richard Traunmüller. 2009. "Spheres of Trust: An Empirical Analysis of the Foundations of Particularized and Generalized Trust." *European Journal of Political Research* 48: 782-803.

Frey, Bruno. 1993. "Motivations as a Limit to Pricing." *Journal of Economic Psychology* 14: 635-64.

Frey, Bruno. 2000. "Morality and Rationality in Environmental Polity." *Journal of Consumer Policy* 22: 395-417.

Frey, Bruno S. and Lorenz Goette. 1999. "Does Pay Motivate Volunteers?" Working Paper, Institute for Empirical Research in Economics, University of Zurich.

Frey, Bruno S. and Reto Jegen. 2001. "Motivation Crowding Theory." *Journal of Economic Surveys* 15: 589-611.

Fukuyama, Francis. 1995. *Trust: The Social Virtues and the Creation of Prosperity*. New York, NY: Free Press.

Gambetta, Diego (ed.). 1988. *Trust: Making and Breaking Cooperative Relations*. New York: Basil Blackwell, Inc.

Gambetta, Diego. 1993. *The Sicilian Mafia: The Business of Private Protection*. Cambridge, MA: Harvard University Press.

Ganong, Lawrence and Marilyn Coleman. 2005. "Measuring Intergenerational Obligations" *Journal of Marriage and Family* 67: 1003-11.

Geertz, Clifford. 1978. "The Bazaar Economy: Information and Search in Peasant Marketing." *The American Economic Review* 68: 28-32.

Gellner, Ernest. 1988. 'Trust, Cohesion, and the Social Order.' In *Trust: Making and Breaking Cooperative Relations*, ed. D. Gambetta, pp. 142-157. New York: Basil Blackwell, Inc.

Gheorghiu, Mirona A., Vivian L. Vignoles, and Peter B. Smith. 2009. "Beyond the United States and Japan: Testing Yamagishi's Emancipation Theory of Trust across 31 Nations." *Social Psychology Quarterly* 72: 365-383.

Giddens, Anthony. 1990. *The Consequences of Modernity*. Stanford, CA: Stanford University Press.

Gilbert, Daniel T. and Patrick S. Malone. 1995. "The Correspondence Bias." *Psychological Bulletin* 117: 21-38.

Gintis, Herbert. 2001. "The Contribution of Game Theory to Experimental Design in the Behavioral Sciences." *Behavioral and Brain Sciences* 24: 411-13.

Glaeser, Edward L., David L. Laibson, Jose A. Scheinkman, and Christine L. Soutter. 2000. "Measuring Trust." *The Quarterly Journal of Economics* (August): 811-46.

Glaeser, Edward L., Rafael La Porta, Florencio Lopez-De-Silanes, and Andrei Shleifer. 2004. "Do Institutions Cause Growth?" *Journal of Economic Growth* 9: 271-303.

Glanville, Jennifer L. and Pamela Paxton. 2007. "How do We Learn to Trust? A Confirmatory Tetrad Analysis of the Sources of Generalized Trust." *Social Psychology Quarterly* 70: 230-42.

Gleave, Eric, Blaine Robbins, and Beth Kolko. 2011. "Trust in Uzbekistan." *International Political Science Review*: Forthcoming.

Gneezy, Uri, Ernan Haruvy, and H. Yafe. 2004. "The Inefficiency of Splitting the Bill: A Lesson in Institution Design." *The Economic Journal* 114: 265-80.

Gordon, Robert A. 1968. "Issues of Multiple Regression." *American Journal of Sociology* 73: 592-616.

Granovetter, Mark. 1985. "Economic Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology* 91: 481-510.

Greene, David, Betty Sternberg, and Mark R. Lepper. 1976. "Overjustification in a Token Economy." *Journal of Personality and Social Psychology* 34: 1219-34.

Greif, Avner. 1989. "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders." *The Journal of Economic History* 49: 857-82.

Greif, Avner. 2006. *Institutions and the Path to the Modern Economy*. Cambridge, MA: Cambridge University Press.

Guala, Francesco. 2012. "Reciprocity: Weak or Strong? What Punishment Experiments Do and Do Not Demonstrate." *Behavioral and Brain Sciences* 35: 1-59.

Guiso, Luidi, Paolo Sapienza, and Luigi Zingales. 2008. "Alfred Marshall Lecture: Social Capital as Good Culture." *Journal of the European Economic Association* 6:295-320.

Guseva, Alya and Akos Rona-Tas. 2001. "Uncertainty, Risk and Trust: Russian and American Credit Card Markets Compared." *American Sociological Review* 66: 623-46.

Gwartney, James, Joshua Hall, and Robert Lawson. 2011. "2011 Economic Freedom Dataset in Economic Freedom of the World: 2010 Annual Report."

Haddock, Geoffrey, Mark P. Zanna, and Victoria M. Esses. 1993. "Assessing the Structure of Prejudicial Attitudes: The Case of Attitudes Toward Homosexuals." *Journal of Personality and Social Psychology* 65: 1105-1118.

Hagan, John, Gabrielle Ferrales, and Guillermina Jasso. 2008. "How Law Rules: Torture, Terror, and the Normative Judgments of Iraqi Judges." *Law & Society Review* 42: 605-44.

Haidt, Jonathan. 2003. "The Moral Emotions." In R. J. Davidson, K. R. Scherer, and H. H. Goldsmith (Eds.), *Handbook of Affective Sciences* (pp. 852-870). Oxford: Oxford University Press.

Hainmueller, Jens, Daniel J. Hopkins, and Teppei Yamamoto. 2014. "Causal Inference in Conjoint Analysis: Understanding Multidimensional Choices via Stated Preference Experiments." *Political Analysis* 22: 1-30.

Halaby, Charles N. 2004. "Panel Models in Sociological Research: Theory in Practice." *Annual Review of Sociology* 30: 507-44.

Hardin, Russell. 1993. "The Street-Level Epistemology of Trust." *Politics and Society* 21: 505-29.

Hardin, Russell. 2002. *Trust & Trustworthiness*. New York, NY: Russell Sage Foundation.

Hardin, Russell. 2006. *Trust*. Cambridge, UK: Polity Press.

Hausman, Jerry A. 1978. "Specification Tests in Econometrics." *Econometrica* 46:1251-1271.

Hayes, Andrew F. 2013. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York: The Guilford Press.

Hechter, Michael, James Ranger-Moore, Guillermino Jasso, and Christine Horne. 1999. "Do Values Matter? An Analysis of Advance Directives for Medical Treatment." *European Sociological Review* 15: 405-430.

Hechter, Michael, Hyojoung Kim, and Justin Baer. 2005. "Prediction Versus Explanation in the Measurement of Values." *European Sociological Review* 21: 91-108.

Hedström, Peter. 2005. *Dissecting the Social: On the Principles of Analytical Sociology*. New York, NY: Cambridge University Press.

Hegtvedt, Karen A. 1988. "Social Determinants of Perception: Power, Equity, and Status Effects in an Exchange Situation." *Social Psychology Quarterly* 51: 141-53.

Heider, Fritz. 1958. *The Psychology of Interpersonal Relations*. New York, NY: Wiley.

Herreros, Francisco. 2004. *The Problems of Forming Social Capital. Why Trust?* New York:

Palgrave.

Herreros, Francisco. 2008. “The State and the Creation of an Environment for the Growing of Trust.” *Rationality and Society* 20: 497-521.

Herreros, Francisco and Henar Criado. 2008. “The State and the Development of Social Trust.” *International Political Science Review* 29: 53-71.

Hertwig, Ralph and Andreas Ortmann. 2001. “Experimental Practices in Economics: A Challenge for Psychologists?” *Behavioral and Brain Sciences* 24: 383-451.

Hertzberg, Lars. 1988. “On the Attitude of Trust.” *Inquiry* 31: 307-22.

Holm, Håkan, and Anders Danielson. 2005. “Tropic Trust versus Nordic Trust: Experimental Evidence from Tanzania and Sweden.” *The Economic Journal* 115: 505-532.

Holm, Håkan, and Paul Nystedt. 2008. “Trust in Surveys and Games—A Methodological Contribution on the Influence of Money and Location.” *Journal of Economic Psychology* 29: 522-542.

Holmes, John G. and John K. Rempel. 1985. “Trust in Close Relationships.” In *Close Relationships: Review of Personality and Social Psychology*, edited by Clyde Hendrick. Newbury Park, CA: Sage Publications.

Homans, George. 1950. *The Human Group*. New York: Harcourt, Brace, and Company.

Homans, George. 1961. *Social Behavior: Its Elementary Forms*. New York: Harcourt, Brace, and Jovanovich.

Hooghe, Marc, Tim Reeskens, Dietlind Stolle, and Ann Trappers. 2009. “Ethnic Diversity and Generalized Trust in Europe.” *Comparative Political Studies* 42: 198-223.

Horne, Christine. 2003. “The Internal Enforcement of Norms.” *European Sociological Review* 19: 335-343.

Hughes, Rhidian. 1998. “Considering the Vignette Technique and its Application to a Study of Drug Injecting and HIV Risk and Safer Behavior.” *Sociology of Health & Illness* 20: 381-400.

Hume, David. [1740]1978. *A Treatise of Human Nature*. Cambridge, UK: Oxford University Press.

Huysseune, Michel. 2003. ‘Institutions and their Impact on Social Capital and Civic Culture: The Case of Italy.’ In *Generating Social Capital*, eds. M. Hooghe and D. Stolle, pp. 211-30. New York: Palgrave.

Iglič, Hajdeja. 2010. "Voluntary Associations and Tolerance: An Ambiguous Relationship." *American Behavioral Scientist* 53: 717-36.

Immordino-Yang, Mary H., Andrea McColl, Hanna Damasio, and Antonio Damasio. 2009. "Neural Correlates of Admiration and Compassion." *PNAS* 106: 8021-8026.

Inglehart, Ronald. 1988. "The Renaissance of Political Culture." *American Political Science Review* 82: 1203-30.

Inglehart, Ronald. 1990. *Culture Shift in Advanced Industrial Society*. Princeton, NJ: Princeton University Press.

Ingram, Paul and Karen Clay. 2000. "The Choice-Within-Constraints New Institutionalism and Implications for Sociology." *Annual Review of Sociology* 26: 525-46.

Ioannidis, John P.A. 2005. "Why Most Published Research Findings are False." *PLoS Medicine* 2: e124.

Irwin, Kyle, Laetitia Mulder, and Brent Simpson. In press. "The Detrimental Effects of Sanctions on Intra-Group Trust: Comparing Punishments and Rewards." *Social Psychology Quarterly*: Forthcoming.

Isen, Alice M. 1987. "Positive Affect, Cognitive Processes, and Social Behavior." In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology*.

Jackson, Linda A., Carole N. Hodge, Donna A. Gerard, Julie M. Ingram, Kelly S. Ervin, and Lori A. Sheppard. 1996. "Cognition, Affect, and Behavior in the Prediction of Group Attitudes." *Personality and Social Psychology Bulletin* 22: 306-316.

Jamal, Amaney and Irfan Nooruddin. 2010. "The Democratic Utility of Trust: A Cross-National Analysis." *The Journal of Politics* 45-59.

Jasso, Guillermina. 1988. "Whom Shall we Welcome? Elite Judgments of the Criteria for the Selection of Immigrants." *American Sociological Review* 53: 919-932.

Jasso, Guillermina. 2006. "Factorial Survey Methods for Studying Beliefs and Judgments." *Sociological Methods & Research* 34: 334-423.

Jasso, Guillermina and Karl-Dieter Opp. 1997. "Probing the Character of Norms: A Factorial Survey Analysis of the Norms of Political Action." *American Sociological Review* 62: 947-64.

Jasso, Guillermina and Peter H. Rossi. 1977. "Distributive Justice and Earned Income." *American Sociological Review* 42: 639-51.

Johansson-Stenman, Minhaj Mahmud Olof, and Peter Martinsson. 2013. "Trust, Trust Games and Stated Trust: Evidence from Rural Bangladesh." *Journal of Economic Behavior & Organization* 95: 286-298.

Johnson, Cathryn, and Rebecca Ford. 1996. "Dependence Power, Legitimacy, and Tactical Choice." *Social Psychology Quarterly* 59: 126-139.

Jones, Edward E. and Victor A. Harris. 1967. "The Attribution of Attitudes." *Journal of Experimental Social Psychology* 3: 1-24.

Jones, Karen. 1996. "Trust as an Affective Attitude." *Ethics* 107: 4-25.

Kant, Immanuel. [1797]1983. *Metaphysical Principles of Virtue*. Indianapolis: Hackett Publisher.

Kashima, Emiko S. and Yoshihisa Kashima. 1998. "Culture and Language: The Case of Cultural Dimensions and Personal Pronoun Use." *Journal of Cross-Cultural Psychology* 29:461-486.

Kaufmann, Daniel, Aart Kraay, and Pablo Zoido-Lobatón. 1999a. "Aggregating Governance Indicators." *World Bank Policy Research Working Paper No. 2195*.

Kaufmann, Daniel, Aart Kraay, and Pablo Zoido-Lobatón. 1999b. "Governance Matters." *World Bank Policy Research Working Paper No. 2196*.

Kaufmann, Daniel, Aart Kraay, and Pablo Zoido-Lobatón. 2002. "Governance Matters II—Updated Indicators for 2000/01." *World Bank Policy Research Working Paper No. 2772*.

Kaufmann, Daniel, Aart Kraay, and Pablo Zoido-Lobatón. 2004. "Governance Matters III: Governance Indicators for 1996, 1998, 2000, and 2002." *World Bank Economic Review* 18: 253-87.

Kaufmann, Daniel, Aart Kraay, and Pablo Zoido-Lobatón. 2006a. "Measuring Governance Using Perceptions Data." In S. Rose-Ackerman (ed.), *The Handbook of Economic Corruption*. Northampton, UK: Edward Elgar.

Kaufmann, Daniel, Aart Kraay, and Pablo Zoido-Lobatón. 2006b. "Governance Matters V: Governance Indicators for 1996-2005." *World Bank Policy Research Working Paper No. 4012*.

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2007a. "Growth and Governance: A Reply." *The Journal of Politics* 69: 555-62.

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2007b. "Growth and Governance: A Rejoinder." *The Journal of Politics* 69: 570-72.

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2007c. "The Worldwide Governance Indicators: Answering the Critics." *World Bank Policy Research Working Paper No. 4149*.

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2010. "Response to 'What do the Worldwide Governance Indicators Measure?'." *European Journal of Development Research* 22: 55-58.

Kee, Herbert W. and Robert E. Knox. 1970. "Conceptual and Methodological Considerations in the Study of Trust and Suspicion." *The Journal of Conflict Resolution* 14: 357-66.

Kelley, Harold. 1967. "Attribution Theory in Social Psychology." In *Nebraska Symposium on Motivation*, D. Levine (ed.). Lincoln: University of Nebraska Press.

Kelley, Harold and John W. Thibaut. 1978. *Interpersonal Relations: A Theory of Interdependence*. New York: Wiley-Interscience.

Kenny, David A., Josephine D. Korchmaros, and Niall Bolger. 2003. "Lower Level Mediation in Multilevel Models." *Psychological Methods* 8: 115-128.

King-Casas, Brooks, Damon Tomlin, Cedric Anen, Colin F. Camerer, Steven R. Quartz, P. Read Montague. 2005. "Getting to Know You: Reputation and Trust in a Two-Person Economic Exchange." *Science* 308 78-83.

Klandermans, Burt. 2014. "Identity Politics and Politicized Identities: Identity Processes and the Dynamics of Protest." *Political Psychology* 35: 1-22.

Klapwijk, Anthon and Paul A. M. Van Lange. 2009. "Promoting Cooperation and Trust in "Noisy" Situations: The Power of Generosity." *Journal of Personality and Social Psychology* 96: 83-103.

Knack, Stephen. 2002. "Social Capital and the Quality of Government: Evidence from the States." *American Journal of Political Science* 46: 772-85.

Knack, Stephen and Philip Keefer. 1997. "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation." *Quarterly Journal of Economics* 112: 1251-88.

Knight, Jack. 2001. "Social Norms and the Rule of Law: Fostering Trust in a Socially Diverse Society." Pp. 354-373 in *Trust in Society*, edited by K. S. Cook. New York: Russell Sage Foundation.

Kollock, Peter. 1994. 'The Emergence of Exchange Structures: An Experimental Study of Uncertainty, Commitment, and Trust.' *American Journal of Sociology* 100: 313-45.

Koenig, Melissa A. and Vikram K. Jaswal. 2011. "Characterizing Children's Expectations about Expertise and Incompetence: Halo or Pitchfork Effects?" *Child Development* 82: 1634-1647.

Kosfeld, Michael, Markus Heinrichs, Paul Zak, Urs Fischbacher, and Ernst Fehr. 2005.

"Oxytocin Increases Trust in Humans." *Nature* 435: 673-76.

Kramer, Roderick M. 1999. "Trust and Distrust in Organizations: Emerging Perspectives, Enduring Questions." *Annual Review of Psychology* 50: 984-93.

Kramer, Roderick M. and Tom R. Tyler. 1996. *Trust in Organizations: Frontiers of Theory and Research*. California: Sage Publications, Inc.

Krueger, Frank, Kevin McCabe, Jorge Moll, Nikolaus Kriegeskorte, Roland Zahn, Maren Strenziok, Armin Heinecke, and Jordan Grafman. 2007. "Neural Correlates of Trust." *PNAS* 104: 20084-89.

Kumlin, Staffan and Bo Rothstein. 2005. "Making and Breaking Social Capital: The Impact of Welfare State Institutions." *Comparative Political Studies* 38: 339-65.

Kurtz, Marcus J. and Andrew Schrank. 2007a. "Growth and Governance: Models, Measures, and Mechanisms." *The Journal of Politics* 69: 538-54.

Kurtz, Marcus J. and Andrew Schrank. 2007b. "Growth and Governance: A Defense." *The Journal of Politics* 69: 563-69.

Kutner, Michael H., Chris Nachtsheim, and John Neter. 2004. *Applied Linear Regression Models*. Boston: McGraw-Hill/Irwin.

Kurzban, Robert. 2003. "Biological Foundations of Reciprocity." In *Trust & Reciprocity: Interdisciplinary Lessons from Experimental Research* (p. 105-27), edited by Elinor Ostrom and James Walker. New York, NY: Russell Sage Foundation.

Kuwabara, Ko. 2011. "Cohesion, Cooperation, and the Value of Doing Things Together: How Economic Exchange Creates Relational Bonds." *American Sociological Review* 76: 560-80.

Kuznets, Simon. 1955. "Economic Growth and Income Inequality." *American Economic Review* 45: 1-28.

Lambert, Nathaniel M., Steven M. Graham, and Frank D. Fincham. 2009. "A Prototype Analysis of Gratitude: Varieties of Gratitude Experiences." *Personality and Social Psychology Bulletin* 35: 1193-1207.

Landa, Janet T. 1981. "A Theory of the Ethnically Homogeneous Middleman Group: An Institutional Alternative to Contract Law." *The Journal of Legal Studies* 10: 349-62.

Landa, Janet T. 1995. *Trust, Ethnicity, and Identity: Beyond the New Institutional Economics of Ethnic Trading Networks, Contract Law, and Gift-Exchange*. Ann Arbor: University of Michigan Press.

Langbein, Laura and Stephen Knack. 2010. "The Worldwide Governance Indicators: Six, One, or None?" *Journal of Development Studies* 46: 350-70.

Lanza, Marilyn Lewis and James Carifio. 1992. "Use of a Panel of Experts to Establish Validity for Patient Assault Vignettes." *Evaluation Review* 17: 82-92.

Lauder, William. 2002. "Factorial Survey Methods: A Valuable but Under-Utilized Research Method in Nursing Research?" *NTResearch* 7: 35-43.

Lawler, Edward J. and Jeongkoo Yoon. 1993. "Power and the Emergence of Commitment Behavior in Negotiated Exchange." *American Sociological Review* 58: 465-81.

Lawler, Edward J. and Jeongkoo Yoon. 1996. "Commitment in Exchange Relations: Test of a Theory of Relational Cohesion." *American Sociological Review* 61: 89-108.

Lawler, Edward J., Shane R. Thye, and Jeongkoo Yoon. 2008. "Social Exchange and Micro Social Order." *American Sociological Review* 73: 519-42.

Leigh, Andrew. 2006. "Trust, Inequality and Ethnic Heterogeneity." *The Economic Record* 82: 268-80.

Lederman, Daniel, Norman Loayza, and Ana Maria Menéndez. 2002. "Violent Crime: Does Social Capital Matter?" *Economic Development and Cultural Change* 50: 509-39.

Letki, Natalia. 2006. "Investigating the Roots of Civic Morality: Trust, Social Capital, and Institutional Performance." *Political Behavior* 28: 305-25.

Letki, Natalia and Geoffrey Evans. 2005. "Endogenizing social trust: Democratization in East-Central Europe." *British Journal of Political Science* 35:515-529.

Levi, Margaret. 1996. "Social and unsocial capital: A review essay of Robert Putnam's Making Democracy Work." *Politics & Society* 24:45-55.

Levi, Margaret. 1998. "A State of Trust." In *Trust and Governance*, ed. by V. Braithwaite and M. Levi, pp. 77-101. New York: Russell Sage Foundation.

Levi, Margaret and Laura Stoker. 2000. "Political Trust and Trustworthiness." *Annual Review of Political Science* 3: 475-507.

Levitt, Steven D. and John A. List. 2007. "What do Laboratory Experiments Measuring Social Preferences Reveal about the Real World?" *Journal of Economic Perspectives* 21: 153-174.

Lewis, J. David and Andrew Weigert. 1985. "Trust as a Social Reality." *Social Forces* 63: 967-85.

Lijphart, Arend. 1999. *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries*. New Haven: Yale University Press.

Liker, Jeffrey L. 1982. "Family Prestige Judgments: Bringing in Real-World Complexities." In Peter H. Rossi and Steven L. Nock (eds.), *Measuring Social Judgments*. New York, NY: Sage Publications.

Lipset, Seymour Martin. 1981. *Political Man: The Social Bases of Politics*. Baltimore: Johns Hopkins University Press.

Locke, John. [1689]1988. *Two Treatises of Government*. Cambridge, UK: Cambridge University Press.

Lount, Robert B. 2010. "The Impact of Positive Mood on Trust in Interpersonal and Intergroup Interactions." *Journal of Personality and Social Psychology* 98: 420-33.

Ludwick, Ruth and Richard A. Zeller. 2001. "The Factorial Survey: An Experimental Method to Replicate Real World Problems." *Nursing Research* 50: 129-33.

Luhmann, Niklas. 1979. *Trust and Power*. Chichester, CAN: Wiley.

Lyons, Christopher. 2006. "Stigma or Sympathy? Attributions of Fault to Hate Crime Victims and Offenders." *Social Psychology Quarterly* 69: 39-59.

Malhotra, Deepak and J. Keith Murnighan. 2002. "The Effects of Contracts on Interpersonal Trust." *Administrative Science Quarterly* 47: 534-59.

Mansbridge, Jane. 1999. "Altruistic Trust." In M. Warren (Ed.), *Democracy and Trust*. New York: Cambridge University Press.

Marshall, T. H. 1950. *Citizenship and Social Class*. Cambridge: Cambridge University Press.

Mason, Winter and Siddharth Suri. . 2012. "Conduting Behavioral Research on Amazon's Mechanical Turk." *Behavioral Research* 44: 1-23.

Mayer, Roger C. and James H. Davis. 1999. "The Effect of the performance Appraisal System on Trust for Management: A Field Quasi-Experiment." *Journal of Applied Psychology* 84: 123-36.

Mayer, Roger C., James H. Davis, and F. David Schoorman. 1995. "An Integrative Model of Organizational Trust." *Academy of Management Review* 20: 709-34.

McAllister, Daniel J. 1995. "Affect- and Cognition-Based Trust as Foundations for Interpersonal Cooperation in Organizations." *Academy of Management Journal* 38: 24-59.

McCullough, Michael. E., Shelley D. Kilpatrick, Robert A. Emmons, and David B. Larson. 2001. "Is Gratitude a Moral Affect?" *Psychological Bulletin* 127: 249-66.

McCullough, Michael E., Marcia B. Kimeldorf, and Adam D. Cohen. 2008. "An Adaptation for Altruism? The Social Causes, Social Effects, and Social Evolution of Gratitude." *Psychological Science* 17: 281-85.

McKnight, D. Harrison, Vivek Choudhury, and Charles Kacmar. 2002. "Developing and Validating Trust Measures for e-Commerce: An Integrative Typology." *Information Systems Research* 13: 334-359.

Messick, David M. 1999. "Alternative Logics for Decision Making in Social Settings." *Journal of Economic Behavior and Organization* 39: 11-28.

Messick, David M. and Roderick M. Kramer. 2001. "Trust as a Form of Shallow Morality." In R. M. Kramer & K. S. Cook (Eds.), *Trust in Society* (pp. 89-117). New York, NY: Sage.

Meyer-Lindenberg, Andreas. 2008. "Trust Me on This." *Science* 321: 778-80.

Michaels, James W. and James A. Wiggins. 1976. "Effects of Mutual Dependency and Dependency Asymmetry on Social Exchange." *Sociometry* 39: 368-76.

Miethe, Terance. 1982. "Public Consensus on Crime Seriousness: Normative Structure or Methodological Artifact?" *Criminology* 20: 515-26.

Miller, Alan S., and Tomoko Mitamura. 2003. "Are Surveys on Trust Trustworthy?" *Social Psychology Quarterly* 66: 60-70.

Miller, Jessica. 2000. "Trust: The Importance of an Emotional Attitude." *Practical Philosophy* 3: 45-54.

Mischel, Walter. 1968. *Personality and Assessment*. New York, NY: Wiley.

Misztal, Barbara A. 1996. *Trust in Modern Societies: The Search for the Bases of Social Order*. Cambridge, UK: Polity Press.

Möllering, Guido. 2006. *Trust: Reason, Routine, Reflexivity*. Oxford, UK: Elsevier.

Molm, Linda D. 1994. "Dependence and Risk: Transforming the Structure of Social Exchange." *Social Psychology Quarterly* 57: 163-76.

Molm, Linda D., Jessica L. Collett, and David R. Schaefer. 2007. "Building Solidarity through Generalized Exchange: A Theory of Reciprocity." *American Journal of Sociology* 113: 205-42.

Molm, Linda D., Gretchen Peterson, and Nobuyuki Takahashi. 1999. "Power in Negotiated and Reciprocal Exchange." *American Sociological Review* 64: 876-90.

Molm, Linda D., David R. Schaefer, and Jessica L. Collett. 2007. "The Value of Reciprocity."

Social Psychology Quarterly 70: 199-217.

Molm, Linda D., Nobuyuki Takahashi, and Gretchen Peterson. 2000. "Risk and Trust in Social Exchange: An Experimental Test of a Classical Proposition." *American Journal of Sociology* 105: 1396-1427.

Molm, Linda D., Monica M. Whitman, and David Melamed. 2012. "Forms of Exchange and Integrative Bonds: Effects of History and Embeddedness." *American Sociological Review* 77: 141-165.

Moskowitz, Gordon B. 2005. *Social Cognition: Understanding Self and Others*. New York, NY: The Guilford Press.

Mulder, Laetitia B., Eric Van Dijk, David De Cremer, and Henk A. M. Wilke. 2006. "Undermining Trust and Cooperation: The Paradox of Sanctioning Systems in Social Dilemmas." *Journal of Experimental Social Psychology* 42: 147-62.

Muller, Edward N. and Mitchell A. Seligson. 1994. "Civic Culture and Democracy: The Question of Causal Relationships." *American Political Science Review* 88: 635-52.

Murayama, Kou, Reinhard Pekrun, and Klaus Fiedler. 2013. "Research Practices That Can Prevent an Inflation of False-Positive Rates." *Personality and Social Psychology Review* 18: 107-118.

Murray, Michael P. 2006. "Avoiding invalid instruments and coping with weak instruments." *Journal of Economic Perspectives* 20:111-132.

Murray, Sandra L., Rebecca T. Pinkus, John G. Holmes, Brianna Harris, Sara Gromillion, Maya Aloni, Jaye L. Derrick, and Sadie Leder. 2011. "Signaling When (and When Not) to be Cautious and Self-Protective: Impulsive and Reflective Trust in Close Relationships." *Journal of Personality and Social Psychology* 101: 485-502.

Naef, Michael, and Jürgen Schupp. 2009. "Measuring Trust: Experiments and Surveys in Contrast and Combination." *IZA DP No. 4087*.

Nannestad, Peter. 2008. "What Have we Learned about Generalized Trust, if Anything?" *Annual Review of Political Science* 11: 413-36.

Neff, J. A. 1979. "Interaction versus Hypothetical Others: The Use of Vignettes in Attitude Research." *Sociology and Social Research* 64: 105-25.

Neilson, Lisa and Pamela Paxton. 2010. "Social Capital and Political Consumerism: A Multilevel Analysis." *Social Problems* 57: 5-24.

Newton, Ken and Sonja Zmerli. 2011. "Three Forms of Trust and their Association." *European Political Science Review* 3: 169-200.

Nichols, Thomas M. 1996. 'Russian Democracy and Social Capital.' *Social Science Information* 35: 629-42.

Norris, Pippa. 2008. *Driving Democracy: Do Power-Sharing Institutions Work?* New York: Cambridge University Press.

North, Douglas. 1990. *Institutions, Institutional Change, and Economic Performance*. New York: Cambridge University Press.

Nosek, Brian A., Frederick L. Smyth, N. Sriram, Nicole M. Lindner, Thierry Devos, Alfonso Ayala, Yoav Bar-Anan, Robin Bergh, Huajian Cai, Karen Gonsalkorale, Selin Kesebir, Norbert Maliszewski, Félix Neto, Eero Olli, Jaihyun Park, Konrad Schnabel, Kimihiro Shiomura, Bogdan Tudor Tulbure, Reinout W. Wiers, Mónika Somogyi, Nazar Akrami, Bo Ekehammar, Michelangelo Vianello, Mahzarin R. Banaji and Anthony G. Greenwald. "National Differences in Gender-Science Stereotypes Predict National Sex Differences in Science and Math Achievement." *PNAS* 106: 10593-10597.

Offe, Claus. 1999. "How can we Trust our Fellow Citizens?" in *Democracy and Trust*, edited by M. E. Warren. Cambridge: Cambridge University Press.

Offer, Avner. 1997. "Between the Gift and the Market: The Economy of Regard." *Economic History Review* 3: 450-76.

Opp, Karl-Dieter. 2002. "When do Norms Emerge by Human Design and when by the Unintended Consequences of Human Action." *Rationality and Society* 14: 131-158.

Oorschot, Wim Van and Wil Arts. 2005. "The Social Capital of European Welfare States: The Crowding Out Hypothesis Revisted." *Journal of European Social Policy* 15: 5-26.

Oosterhof, Nikolaas N. and Alexander Todorov. 2009. "Shared Perceptual Basis of Emotional Expressions and Trustworthiness Impressions from Faces." *Emotion* 9: 128-33.

Orbell, John, Robyn Dawes and Peregrine Schwartz-Shea. 1994. "Trust, Social Categories, and Individuals: The Case of Gender." *Motivation and Emotion* 18: 109-28.

Orne, Martin T. 1962. "On the Social Psychological Experiment: With Particular Reference to Demand Characteristics and Their Implications." *American Psychologist* 17: 776-83.

Ortony Andrew, Clore Gerald L., and Allan Collins. 1988. *The Cognitive Structure of Emotion*. New York: Cambridge University Press.

Padgen, Anthony. 1988. 'The Destruction of Trust and its Economic Consequences in the Case of Eighteenth-century Naples.' In *Trust*, ed. D. Gambetta, pp. 127-41. London: Basil Blackwell.

Parsons, Talcott. 1951. *The Social System*. Glencoe, IL: Free Press.

Paxton, Pamela. 2002. 'Social Capital and Democracy: An Interdependent Relationship.' *American Journal of Sociology* 67: 254-277.

Paxton, Pamela. 2007. "Association Memberships and Generalized Trust: A Multilevel Model across 31 Countries." *Social Forces* 86: 47-76.

Peng, Yusheng. 2010. "When Formal Laws and Informal Norms Collide: Lineage Networks versus Birth Control Policy in China." *American Journal of Sociology* 116: 770-805.

Phelps, Elizabeth. 2006. "Emotion and Cognition: Insights form Studies of the Human Amygdala." *Annual Review of Psychology* 57: 27-53.

Pierce, A. H. 1908. "The Subconscious Again." *Journal of Philosophy, Psychology, & Scientific Methods* 5: 264-71.

Potter, Nancy N. 2002. *How Can I be Trusted? A Virtue Theory of Trustworthiness*. Lanham, MD: Rowman & Littlefield.

Putnam, Robert. 1993. *Making Democracy Work: Civic Tradition in Modern Italy*. Princeton, NJ: Princeton University Press.

Putnam, Robert. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York, NY: Free Press.

Pye, Lucien W. 1992. *Chinese Negotiating Style*. New York, NY: Quorum Books.

Przeworski, Adam. 1991. *Democracy and the Market*. Cambridge: Cambridge University Press.

Raudenbush, Stephen W. and Anthony S. Bryk. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods*. Newbury Park, CA: Sage.

Reeskens, Tim and Marc Hooghe. 2008. "Cross-Cultural Measurement Equivalence of Generalized Trust. Evidence from the European Social Survey (2002 and 2004)." *Social Indicators Research* 85: 515-532.

Reeson, Andrew F. and John G. Tisdell. 2007. "Institutions, Motivations and Public Goods: An Experimental Test of Motivational Crowding." *Journal of Economic Behavior & Organization* 68: 273-81.

Rempel, John K., John G. Holmes, and Mark P. Zanna. 1985. "Trust in Close Relationships." *Journal of Personality and Social Psychology* 49: 95-112.

Righetti, Francesca and Catrin Finkenauer. 2011. "'If you are able to Control Yourself, I will

Trust You': The Role of Perceived Self-Control in Interpersonal Trust." *Journal of Personality and Social Psychology* 100: 874-86.

Ring, Peter S. and Andrew H. van de Van. 1994. "Developmental Processes of Cooperative Interorganizational Relationships." *Academy of Management Review* 19: 90-118.

Robbins, Blaine. 2011. "Neither Government nor Community Alone: A Test of State-Centered Models of Generalized Trust." *Rationality and Society* 23: 304-46.

Robbins, Blaine. 2012a. "Institutional Quality and Generalized Trust: A Nonrecursive Causal Model." *Social Indicators Research* 107: 235-258.

Robbins, Blaine. 2012b. "A Blessing and a Curse? Political Institutions in the Growth and Decay of Generalized Trust: A Cross-National Panel Analysis, 1980-2009." *PLoS One* 7: e35120.

Robbins, Blaine. 2013. "Cooperation without Culture? The Null Effect of Generalized Trust on Intentional Homicide: A Cross-National Panel Analysis, 1995-2009." *PLoS One* 8: e59511.

Robbins, Blaine and Maria Grigoryeva. 2010a. "Technology: A Bane or Boon for Cross-National Levels of Generalized Trust?" In A. Gerbasi & D. Latusek (eds.), *Trust and Technology in a Ubiquitous Modern Environment: Theoretical and Methodological Perspectives*. IGI Global.

Robbins, Blaine and Maria Grigoryeva. 2010b. "Information Technology, Political Institutions, and Generalized Trust: An Empirical Assessment using Structural Equation Models." *International Journal of Dependable and Trustworthy Information Systems* 1(2): 55-69.

Robbins, Blaine and David Pettinicchio. 2012. "Social Capital, Economic Development, and Homicide: A Cross-National Investigation." *Social Indicators Research* 105: 519-540.

Rooks, Gerrit, Werner Raub, Robert Selten, and Frits Tazelaar. 2000. "How Inter-firm Co-operation Depends on Social Embeddedness: A Vignette Study." *Acta Sociologica* 43: 123-43.

Rose-Ackerman, Susan. 2001. "Trust and Honesty in Post-Socialist Societies." *Kyklos* 54:415-443.

Rosenberg, M. 1956. "Misanthropy and Political Ideology." *American Sociological Review* 21: 690-95.

Rosenthal, Robert W. and Ralph L. Rosnow. 1969. *Artifact in Behavioral Research*. New York, NY: Academic Press.

Ross, Lee. 1977. "The Intuitive Psychologists and his Shortcomings." In: L. Berkowitz (Ed.), *Advances in Experimental Social Psychology*, Vol. 10 (pp. 173-220). San Diego, CA:

Academic Press.

Ross, Lee and Richard Nisbett. 1991. *The Person and the Situation: Perspectives of Social Psychology*. New York, NY: McGraw-Hill.

Ross, Lee and Andrew Ward. 1996. "Naïve Realism: Implications for Social Conflict and Misunderstandings." In T. Brown, E. Reed, and E. Turiel (eds.), *Values and Knoweldge* (pp. 103-35). Hillsdale, NJ: Lawrence Erlbaum Associates.

Rossi, Peter H. and Andy B. Anderson. 1982. "The Factorial Survey Approach: An Introduction." In Peter H. Rossi and Steven L. Nock (Eds.), *Measuring Social Judgments*. New York, NY: Sage Publications.

Rotenberg, Ken J. 1995. "The Socialization of Trust: Parents' and Childrens' Interpersonal Trust." *International Journal of Behavioral Deviance* 18: 713-26.

Roth, Felix. 2009. "Does Too Much Trust Hamper Economic Growth?" *Kyklos* 62:103-128.

Rothstein, Bo and Dietlind Stolle. 2003. "Social Capital, Impartiality and the Welfare State: An Institutional Approach." in *Generating Social Capital*, edited by M. Hooghe and D. Stolle. New York: Palgrave.

Rothstein, Bo, and Dietlind Stolle. 2008. 'How Political Institutions Create and Destroy Social Capital: An Institutional Theory of Generalized Trust.' *Comparative Politics* 40 (4).

Rothstein, Bo and Eric M. Uslaner. 2005. "All for All: Equality, Corruption, and Social Trust." *World Politics* 58: 41-72.

Rotter, Julian B. 1967. "A New Scale for the Measurement of Interpersonal Trust." *Journal of Personality* 35: 651-665.

Rotter, Julian B. 1971. "Generalized Expectancies for Interpersonal Trust." *American Psychologist* 26: 443-50.

Rotter, Julian B. 1980. "Interpersonal Trust, Trustworthiness, and Gullibility." *American Psychologist* 35: 1-7.

Rousseau, Denise M., Sim B. Sitkin, Ronald S. Burt, and Colin Camerer. 1998. "Not So Different After All: A Cross-Discipline View of Trust." *Academy of Management Review* 23: 393-404.

Rydgren, Jens. 2009. "Beliefs." In Peter Bearman and Peter Hedström (Eds.), *The Oxford Handbook of Analytical Sociology* (pp. 72-93). Oxford, UK: Oxford University Press.

Rydgren, Jens, Dana Sofi, and Martin Hällsten. 2013. "Interethnic Friendship, Trust, and Tolerance: Findings from Two North Iraqi Cities." *American Journal of Sociology* 118:

1650-94.

Sabetti, Filippo. 1996. 'Path Dependency and Civic Culture: Some Lessons from Italy about Interpreting Social Experiments.' *Politics and Society* 24: 19-44.

Sampson, Robert J., Stephen W. Raudenbush, and Felton Earls. 1997. "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy." *Science* 277:918-924.

Sapienza, Paola, Anna Toldra-Simats, and Luigi Zingales. 2013. "Understanding Trust." *The Economic Journal* 123: 1313-1332.

Sauer, Carsten, Katrin Auspurg, Thomas Hinz, and Stefan Liebig. 2010. "Methodological Effects of Factorial Surveys in Population Samples." *Universität Bielefeld, Working Paper #8*.

Sauer, Carsten, Katrin Auspurg, Thomas Hinz, and Stefan Liebig. 2011. "The Application of Factorial Surveys in General Population Samples: The Effects of Respondent Age and Education on Response Times and Response Consistency." *Survey Research Methods* 5: 89-102.

Scheff, Thomas J. 1983. "Toward Integration in the Social Psychology of Emotion." *Annual Review of Sociology* 9: 333-354.

Schelling, Thomas. 1960. *The Strategy of Conflict*. Cambridge, MA: Harvard University Press.

Schultz, Duane P. 1969. "The Human Subject in Psychological Research." Psychological Bulletin 72: 214-28.

Seligman, Adam B. 1997. *The Problem of Trust*. Princeton, N. J.: Princeton University Press.

Sen, Amartya. 1973. "Behaviour and the Concept of Preference." *Economica* 40: 241-59.

Shklar, Judith N. 1984. *Ordinary Vices*. Cambridge, MA: Harvard University Press.

Sigall, Harold and Nancy Ostrove. 1975. "Beautiful but Dangerous: Effects of Offender Attractiveness and Nature of the Crime on Juridic Judgment." *Journal of Personality and Social Psychology* 31: 410:414.

Simmel, Georg. 1950. *The Sociology of Georg Simmel*. New York, NY: Free Press.

Simmel, Georg. 1955. *Conflict and the Web of Group Affiliations*. New York, NY: Free Press.

Simmel, Georg. 1978. *Philosophy of Money*. London, UK: Routledge.

Simmons, Joseph P., Leif D. Nelson, & Uri Simonsohn. 2011. "False-Positive Psychology: Undisclosed Flexibility in Data Collection and Analysis Allows Presenting Anything as

Significant." *Psychological Science* 22: 1359-1366.

Simpson, Brent and Kimmo Eriksson. 2009. "The Dynamics of Contracts and Generalized Trustworthiness." *Rationality and Society* 21: 59-80.

Simpson, Brent and Michael Macy. 2004. "Power, Identity, and Collective Action in Social Exchange." *Social Forces* 82: 1375-1411.

Simpson, Sally S. and Nicole Leeper Piquero. 2002. "Low Self-Control, Organizational Theory, and Corporate Crime." *Law & Society Review* 36: 509-48.

Smith, Adam. [1763]1978. *Lectures on Jurisprudence*. Cambridge, UK: Oxford University Press.

Smith, Sandra S. 2010. "Race and Trust." *Annual Review of Sociology* 36: 453-75.

Solt, Frederick. 2009. "Standardizing the World Income Inequality Database." *Social Science Quarterly* 90:231-242.

Sønderskov, Kim M. 2009. "Different Goods, Different Effects: Exploring the Effects of Generalized Social Trust in Large-N Collective Action." *Public Choice* 140: 145-60.

Sønderskov, Kim M. 2011. "Explaining Large-N Cooperation: Generalized Social Trust and the Social Exchange Heuristic." *Rationality and Society* 23: 51-74.

Sovey, Allison J. and Donald P. Green. 2011. "Instrumental Variables Estimation in Political Science: A Readers' Guide." *American Journal of Political Science* 55: 188-200.

Stack, Lois C. 1978. "Trust." In *Dimensions of Personality*, H. London and J. E. Exnor, Jr. (eds.). New York, NY: John Wiley & Sons.

Stephan, Walter G., Vladimir Ageyev, Lisa Coates-Shrider, Cookie White Stephan, and Marina Abalakina. 1994. "On the Relationship between Stereotypes and Prejudice: An International Study." *Personality and Social Psychology Bulletin* 20: 277-84.

Stets, Jan E. and Peter J. Burke. 2000. "Identity Theory and Social Identity Theory." *Social Psychology Quarterly* 63: 224-237.

Stolle, Dietlind, Stuart Soroka, and Richard Johnston. 2008. "When Does Diversity Erode Trust? Neighborhood Diversity, Interpersonal Trust and the Mediating Effect of Social Interactions." *Political Studies* 56: 57-75.

Strahan, Robert and Kathleen C. Gerbasi. 1972. "Short, Homogeneous Versions of the Marlowe-Crowne Social Desirability Scale." *Journal of Clinical Psychology* 28: 191-93.

Sturgis, Patrick, Sanna Read, Peter K. Hatemi, Gu Zhu, Tim Trull, Margaret J. Wright, and

Nicholas G. Martin. 2010. "A Genetic Basis for Social Trust." *Political Behavior* 32: 205-30.

Sturgis, Patrick, and Patten Smith. 2010. "Assessing the Validity of Generalized Trust Questions: What Kind of Trust are we Measuring?" *International Journal of Public Opinion Research* 22: 74-92.

Sztompka, Piotr. 1999. *Trust: A Sociological Theory*. Cambridge, UK: Cambridge University Press.

Tabellini, Guido. 2008. "The Scope of Cooperation: Values and Incentives." *Quarterly Journal of Economics* 123:905-950.

Tabellini, Guido. 2010. "Culture and Institutions: Economic Development in the Regions of Europe." *Journal of the European Economic Association* 8: 677-716.

Tajfel, Henri. 1970. "Experiments in Intergroup Discrimination." *Scientific American* 223: 96-102.

Tajfel, Henri. 1981. *Human Groups and Social Categories*. Cambridge University Press.

Tajfel, Henri. 1982. *Social Identity and Intergroup Relations*. Cambridge University Press.

Tan, Jonathan H. W. and Claudia Vogel. 2009. "Religion and Trust: An Experimental Study." *Journal of Economic Psychology* 29: 832-48.

Taylor, Michael. 1976. *Anarchy and Cooperation*. London: Wiley.

Taylor, Michael. 1982. *Community, Anarchy and Liberty*. Cambridge, UK: Cambridge University Press.

Taylor, Michael. 1987. *The Possibility of Cooperation*. Cambridge: Cambridge University Press.

Taylor, Michael. 2006. *Rationality and the Ideology of Disconnection*. New York, NY: Cambridge University Press.

Tenbrunsel, Ann E., and David M. Messick. 1999. "Sanctioning Systems, Decisions Frames, and Cooperation." *Administrative Science Quarterly* 44: 684-707.

Thoits, Peggy A. 1989. "The Sociology of Emotions." *Annual Review of Sociology* 317-342.

Thomas, M. A. 2010. "What Do the Worldwide Governance Indicators Measure?" *European Journal of Development Research* 22: 31-54.

Thöni, Christian, Jean-Robert Tyran, and Erik Wengström. 2012. "Microfoundations of Social Sapital." *Journal of Public Economics* 96: 635-643.

Thorndike, Edward L. 1920. "A Constant Error in Psychological Ratings." *Journal of Applied Psychology* 4: 25-29.

Titmuss, Richard. 1970. *The Gift Relationship: From Human Blood to Social Policy*. New Press.

Tönnies, Ferdinand. [1887]1963. *Gemeinschaft und Gesellschaft*. Darmstadt, Germany: Wissenschaftliche Buchgessellschaft

Torpe, Lars and Henrik Lolle. 2011. "Identifying Social Trust in Cross-Country Analysis: Do We Really Measure the Same?" *Social Indicators Research* 103: 481-500.

Tsai, Ming-Chang, Leslie Laczko, and Christian Bjørnskov. 2010. "Social Diversity, Institutions and Trust: A Cross-National Analysis." *Social Indicators Research*: Online First.

Tsang, Jo-Ann. 2006. "Gratitude and Prosocial Behavior: An Experimental Test of Gratitude." *Cognition and Emotion* 20: 138-48.

Turner, Jonathan C. 1985. "Social Categorization and the Self-Concept: A Social-Cognitive Theory of Group Behavior." *Advances in Group Processes* 13: 351-68.

Turner, Jonathan H. and Jan E. Stets. 2006. "Sociological Theories of Human Emotions." *Annual Review of Sociology* 32: 25-52.

Tversky, Amos and Daniel Kahneman. 1974. "Judgment under Uncertainty: Heuristics and Biases." *Science* 185: 1124-1131.

Tversky, Amos and Daniel Kahneman. 1981. "The Framing of Decisions and the Psychology of Choice." *Science* 211: 453-58.

Ullmann-Margalit, Edna. 2009. "Trust, Distrust, and In Between." In *Distrust*, edited by Russell Hardin (pp. 60-82). New York, NY: Russell Sage Foundation.

Uslaner, Eric M. 2000. "Producing and Consuming Trust." *Political Science Quarterly* 115: 569-590.

Uslaner, Eric M. 2002. *The Moral Foundations of Trust*. Cambridge, UK: Cambridge University Press.

Uslaner, Eric M. 2003. "Varieties of Trust." *European Political Science* 2: 43-49.

Vaish, Amrisha, Tobias Grossmann, and Amanda Woodward. 2008. "Not all Emotions are Created Equal: The Negativity Bias in Social-Emotional Development." *Psychological Bulletin* 134: 383-403.

Van Lange, Paul A. M. 1999. "The pursuit of Joint Outcomes and Equality in Outcomes: An Integrative Model of Social Value Orientation." *Journal of Personality and Social Psychology* 77: 337-349.

Van Lange, Paul A. M., Wilma Otten, Ellen M. N. De Bruin, and Jeffrey A. Joireman. 1997. "Development of Prosocial, Individualistic, and Competitive Orientations: Theory and Preliminary Evidence." *Journal of Personality and Social Psychology* 73: 733-46.

Van Lange, Paul A. M., Anna A. E. Vinkhuyzen, and Danielle Posthuma. 2014. "Genetic Influences are Virtually Absent for Trust." *PLoS One* 9: e93880.

Varese, Federico. 2001. *The Russian Mafia: Private Protection in a New Market Economy*. Cambridge, UK: Oxford University Press.

Wallander, Lisa. 2009. "25 years of Factorial Surveys in Sociology: A Review." *Social Science Research* 38: 505-520.

Wason, Kelly D., Michael J. Polonksy, and Michael R. Hyman. 2002. "Designing Vignette Studies in Marketing." *Australian Marking Journal* 10: 41-58.

Weissman, Marsha and Candace M. LaRue. 1998. "Earning Trust from Youths with None to Spare." *Child Welfare League of America* 77: 579-94.

Wilkes, Rima. 2011. "Re-thinking the Decline in Trust: A Comparison of Black and White Americans." *Social Science Research* 40: 1596-1610.

Will, Jeffry A. and John K. Cochran. 1995. "God Helps Those Who Help Themselves?: The Effects of Religious Affiliation, Religiosity, and Deservedness on Generosity Toward the Poor." *Sociology of Religion* 56: 327-338.

Wooldridge, Jeffrey M. 2009. *Introductory Econometrics: A Modern Approach*. Mason: South Western.

Yamagishi, Toshio. 2001. "Trust as a Form of Social Intelligence." In *Trust in Society* (p. 121-47), edited by Karen S. Cook. New York, NY: Russell Sage Foundation.

Yamagishi, Toshio, Karen S. Cook, and Motoki Watabe. 1998. "Uncertainty, Trust, and Commitment Formation in the United States and Japan." *American Journal of Sociology* 104: 165-94.

Yamagishi, Toshio, Masako Kikuchi, and Motoko Kosugi. 1999. "Trust, Gullibility, and Social Intelligence." *Asian Journal of Social Psychology* 2: 145-61.

Yamagishi, Toshio and Midori Yamagishi. 1994. "Trust and Commitment in the United States and Japan." *Motivation and Emotion* 18: 129-66.

Zak, Paul, and Stephen Knack. 2001. "Trust and Growth." *Economic Journal* 111: 207-43.

Zak, Paul, Robert Kurzban, and William T. Matzner. 2004. "The Neurobiology of Trust." *Annals New York Academy of Sciences* 1032: 224-227.

Zand, Dale E. 1997. *The Leadership Triad: Knowledge, Trust, and Power*. New York, NY: Oxford University Press.

Zmerli, Sonja. 2010. "Social Capital and Norms of Citizenship: An Ambiguous Relationship." *American Behavioral Scientist* 53: 657-76.

Zucker, L. 1986. "Production of Trust: Institutional Sources of Economic Structure, 1840-1920." In B. M. Staw and L. L. Cumings (eds.), *Research in Organizational Behavior* 8: 53-111. Greenwich, CT: JAI Press.

APPENDIX A: A PRIMER IN VIGNETTE EXPERIMENTS AND MULTIFACTORIAL VIGNETTE SURVEYS

In this appendix I outline the common measures of trust found in the trust literature—survey measures of attitudinal trust and laboratory measures of behavioral trust. I then illustrate shortcomings associated with the attitudinal and behavioral measures of trust and show how conventional surveys and laboratory experiments insufficiently address these limitations in spite of their respective strengths. I then propose vignette experiments—or multifactorial vignette surveys—as an alternative method for measuring and understanding the determinants of trust. After this, I review the multifactorial survey method and illustrate how to construct an internally *and* externally valid vignette.

Measures of Trust

Researchers in the trust literature typically rely on either attitudinal or behavioral measures of trust. With the former, the most common measure is the one used to measure general social trust. Recall that this question is usually framed as follows: *Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?* Survey respondents are then constrained to a binary response with "*Most people can be trusted*" or "*Can't be too careful*". Although other survey measures of trust can be found, this question has been the most common survey item employed in national and cross-national public opinion polls since 1972 and, as a result, is the most frequently investigated measure of trust in the trust literature.

With the behavioral measures of trust, researchers tend to rely on an investment game developed originally by Berg, Dickhaut, and McCabe (1995) where decisions, unlike the attitudinal measures of trust, have a monetary impact on the respondent. In the game, participants play the role of either a 'sender' or a 'receiver'. The sender, or the truster, is given a certain amount of money and has to decide how much to send the receiver, or the trustee. Once the sender decides, any amount of money that is sent by the sender is normally doubled (sometimes tripled) before it is given to the receiver. The receiver, who is also given the same amount of money as the sender at the start of the experiment, must then decide how much money received to return to the sender. After the receiver decides on how much money to return, the game is over. Economists and biologists typically regard the amount sent by the sender as a measure of trust, and the amount returned by the receiver as a measure of trustworthiness. This game and other minor variations (see Ermisch, Gambetta, Laurie, Siedler, and Uhrig 2009; Cox 2004) are widely used to measure the determinants of trust and trustworthiness (e.g., Bellemare and Kroger 2007; Bohnet and Zeckhauser 2004; Johansson-Stenman, Mahmud, and Martinsson 2013; Sapienza et al. 2013; Tan and Vogel 2009) as well as cross-national differences in trust and trustworthiness (see Holm and Danielson 2005).

Both of these measures, however, suffer from various methodological problems. The common survey items used to measure attitudinal trust, specifically the general social trust question found in the GSS and WVS, are vague about *what* a person is to trust another to do and unclear about to *whom* trust is placed. Trust, as defined in Chapter 2, is a three-part relation "…that restricts any claim of trust to particular parties and to particular matters" (Hardin 2002: 6) where A believes that B will act trustworthily toward A with respect to matter Y. The general social trust question, however, does not measure B or Y, which poses a critical conceptual question: Do respondents who answer "Most people can be trusted" simply trust everyone with respect to everything, period? Likewise, is it fair to say that Swedish respondents—who consistently answer 'yes' to the WVS general social trust question roughly 60-70% of the time—would loan a stranger on the street their car? Loan them $5,000? Or ask them to babysit their child while they went to a movie? If these were reframed into survey items, I would presume that the vast majority of Swedish respondents would say 'no' to all of them. The problem is that because the question promotes a lack of control on the part of the researcher where respondents impute their own trustees, their own matters, and their own conditions when answering the question, the validity of the survey item in measuring relational trust is severely compromised, which is further amplified with cross-cultural comparisons given interpretations lost in sociolinguistic translation (see Delhey, Newton, and Welzel 2011). All of which has been supported by recent research questioning the methodological utility of the classic binary general social trust question (Delhey, Newton, and Welzel 2011; Glaeser, Laibson, Scheinkman, and Soutter 2000; Holm and Danielson 2005; Holm and Nystedt 2008; Reeskens and Hooghe 2008; Sturgis and Smith 2010; Torpe and Lolle 2011).[55]

All of this aside, the general social trust survey item common to the GSS and WVS is at best "…nothing more than [an] optimistic assessment of trustworthiness and willingness to take small risks on dealing with others whom one does not yet know" (Hardin 2002: 62). Yet, as noted in Chapters 2 and 3 of this dissertation, expectations about the cooperativeness of strangers is important for reaching outcomes beneficial for both parties involved. If I am optimistic about your level of cooperativeness and I don't know you, I am more likely to take a risk and exchange with you. And if you turn out to be trustworthy, I will benefit from our exchange. Because of this, I have gathered information on your trustworthiness and will likely trust you in future

[55] Although a number of scales have been implemented to tackle some of these issues and explore how much individuals "trust" certain categories of people, such as friends, family, people of other nationalities, and the like, these questions still do not address the matters for which A trusts B nor do they resolve to whom a person trusts. This is the case since "friends" and "family" are amorphous categories in which much variation exists in people's actual trust of their "friends" and "family". For instance, I might trust friend B to repair my car but not to cut my hair, while I trust friend C to cut my hair but not fix my car. How would I answer a survey question about trust in "friends" under such conditions? This is exactly why these survey items fail to measure the key elements of relational trust formation: how, whom, and what.

endeavors with respect to that specific matter. In short, while the common survey item of general social trust might capture one's perceived cooperativeness of anonymous others or a general orientation toward strangers, it does not measure relational trust per se.

Although the investment game used to measure behavioral trust might, at first glance, appear to overcome some of the problems related to the attitudinal measures of general social trust, this supposition is unfounded as the trust game common to economics suffers from its own unique set of issues. It is true that the stakes are higher and the matters at hand are better specified with behavioral measures: A (the sender) either cooperates or abstains from cooperation with B (the receiver) regarding matter Y (the investment of money). Yet investment games, like the attitudinal measures, might not actually measure trust. First, note that the trust game in its purest form provides no information on the trustworthiness of the receiver. A simply decides to either invest or not invest in B. For trust to emerge, there must be information about the (un)trustworthiness of B.

Similar to the general social trust question, players are free to impute their own perceptions of whom or what the other player might be, which is beyond the control of the experimenter and, unfortunately, confounds the results.[56] Like the attitudinal measures of trust this game might simply capture optimistic expectations about anonymous others and not necessarily trust. Second, a basic assumption of the trust game is that the cooperation observed—A's investment of money in B—is due to trust. Yet trust is not behavioral—it is a cognitive process in the family of knowledge and beliefs. To say I trust you is to say I know or believe certain things about you with respect to your trustworthiness—nothing more. There is trusting or not trusting to whatever degree, and then there is cooperating or not cooperating for

[56] Although iterated or repeated trust games attenuate this issue, much of the research up to this point consist of one-shot (i.e., single exchange) games.

whatever reasons, which might include trust or it might not. And the reasons we cooperate are manifold, ranging from individual propensities to take risks, inequality aversion, self-interest, mutual dependence, other-regarding preferences, or internalized norms. All of which do not involve trust. In short, focusing solely on revealed behavior in the trust game is a rather coarse measure since there are numerous determinants—both positivist and realist—consistent with observed behavior (see Babcock and Loewenstein 1997 for a similar argument).

Interestingly, empirical research supports these claims. Researchers find that behavioral trust and trustworthiness are often motivated by factors other than expectations of trustworthiness, such as fear of punishment in the afterlife (Johansson-Stenman et al. 2013), unconditional kindness and generosity (Cox 2004; Holm and Danielson 2005; Johansson-Stenman et al. 2013; Sapienza, Toldra, and Zingales 2013), inequality aversion (Cox 2004), and risk aversion (Bohnet and Zeckhauser 2004; Sapienza et al. 2013).

Methodological Shortcomings with Conventional Surveys and Laboratory Experiments

Beyond the specific empirical concerns associated with the attitudinal and behavioral trust literatures, laboratory experiments and survey designs have general advantages and disadvantages as well. The main advantage of surveys over really any other method is their ability to measure a host of relevant control variables—such as gender and racial discrimination, life satisfaction, health and employment status, criminal attitudes and religious values, and behavioral intentions—and to generalize these estimates to a wider population when carefully administered to a random sample of individuals. This is a great strength that no other method in the social sciences can equal. In spite of this asset, survey methods exhibit certain disadvantages that tend to undermine their benefits. First, survey data is imprecise: questions often suffer from various interpretation problems, social desirability biases, selective memory issues, and *ex post* justifications. Second, survey data is usually collected in an uncontrolled manner where researchers are unable to manipulate the presence or absence of specific causal factors that undermines the internal validity of causal inferences. Third, and finally, surveys often lack incentives for behavior and clear behavioral outcomes and consequences. By their very nature, researchers are prohibited from observing actual behavior with conventional survey, and, instead, must rely on self-reports and a respondent's behavioral testimony (or lack thereof). This, unfortunately, requires a leap of faith on the part of researcher to believe that attitudes as measured by a survey actually predict behavior as measured by the very same survey. Saying that I'm altruistic and am willing to donate (or have donated) X amount of money to a charity is one thing, actually paying that X amount of money while being (unobtrusively) observed is another.

Luckily, laboratory experiments overcome many of the weaknesses associated with survey methods. The key advantage of the experimental designs is the ability to control the conditions in which subjects receive or do not receive causal stimuli of interest via randomization. If I believe that the effects of altruism and generosity on cooperation is conditional, I can design and create an experiment where I manipulate certain treatments in a controlled environment that might amplify or dampen the effects of altruism. Doing this not only eases scientific replication and creates orthogonal data, but it also meets two of the necessary conditions for causality: (1) the cause, X, precedes the outcome, Y, and (2) unobserveables that might confound the relationship between X and Y are ruled out because of randomization. In short, randomization of treatments and controls common to laboratory experiments is the only reliable method for drawing causal inferences.

Yet, laboratory experiments in the social sciences are not without fault (see Guala 2012;

Levitt and List 2007). A critical assumption underlying experiments is that observations in the lab can be extrapolated to the outside world; what is often referred to as external validity or generalizability. With respect to the physical sciences, evidence suggests that what happens in the lab, like the manipulation of chemical reactions and genetic mutations, also happens in the real world. In this manner, physicists are able to infer the origins of the galaxy by observing colliding particles in a superconductor. Note that this basic foundational assumption is equally relevant in the social sciences, but the fact that humans are the unit of analysis poses a unique set of issues for lab experiments in sociology, economics, and political science. First, human subjects are keenly aware that their behavior is being scrutinized—monitored and recorded—in a lab experiment (see Orne 1962; Pierce 1908; Schultz 1969). The issue is that such scrutiny can exaggerate or deflate behaviors of interest relative to social situations without such scrutiny (Mischel 1968; Ross and Nisbett 1991). Experiments find that charitable behavior is much more prevalent in the lab than it is in the outside world, especially among those who rarely donate money to charity (Bandiera, Rasul, and Barankey 2005; Gneezy, Haruvy, and Yafe 2004). Benz and Meier (2008), for instance, recently found that behavior is more accentuated in the lab, but that pro-social behavior in experiments is weakly associated with behavior in the field (*r* between 0.25 and 0.40).

Second, social science experiments often rely on self-selected students as participants. This is a potentially problematic issue as students are not representative of the general population and differ from non-student populations in terms of biographical characteristics, generational status, and cognitive ability, and might further diverge from the general population with respect to social and other-regarding preferences (Doty and Silverthorne 1975; Orne 1962; Rosenthal and Rosnow 1969). If so, experimentalists may overestimate the potential for trust and cooperation in investment and public goods games. For instance, if sociologists find that college students are more likely to trust in generalized than negotiated exchange situations (see Molm, Collett and Schaefer 2007), and if students tend to be more prosocial than non-students, the experiments might exaggerate trust in these conditions relative to, say, trust in economic markets or religious communes. Moreover, social science experiments tend to rely on students who willingly volunteer their time and energy for the benefit of science. This can create a problem of self-selection if students who volunteer are systematically more trusting, optimistic, and prosocial than students who do not volunteer, which can complicate the extrapolation of results from the lab to the real world. Recent research, however, shows that students who exhibit prosocial inclinations and donate money to charities are not more likely to participate in experiments (Falk, Meier, and Zehnder 2010). The same researchers also show that very few differences exist between the behavior of students and the general population in a trust experiment. In fact, those from the general population are *more* likely to reciprocate than students.

Third, as sociologists, we know that the decisions people make are influenced not just by past experiences and future motivations, but also by social relationships, norms, and psychological frames (see Tenbrunsel and Messick 1999; Tversky and Kahneman 1981). Ostensibly this might not appear to be an issue, but such processes are outside of an experimentalist's jurisdiction, and, consequently, these factors reduce control over the context within which decisions are made. Take, for example, how an experimenter might frame a public goods game to a group of subjects: one could either propose the situation as a problem facing "your local community" or a problem facing "investment banks on Wall Street." While a similar situation may bear no meaning for an adolescent or a child, such frames invoke particular feelings and emotions that are conditional on education, prior experiences, and norms found within the minds of American adults and outside the control of experimenters. In fact, donations to public goods games vary widely by these simple framing schemes (e.g., Andreoni 1995; Burnham, McCabe, and Smith 2000; Gintis 2001; Hertwig and Ortmann 2001; Ross and Ward 1996).

Fourth, experiments, especially in economics, are often cited as “artificial”, meaning that the experimenter “creates a set of rules governing the interactions, chooses the wording of instructions, and defines the set of actions the subject is allowed to take. In stark contrast, in naturally occurring environments, the choice set often is almost limitless and instructions arise endogenously” (Levitt and List 2007: 166). In other words, the real world is much more complex than the artificial and simplistic conditions found in a social science experiment: the differences between investing money in a hedge fund and investing money in an economic trust game are noticeably great; or, that cooperating in a stylized public goods game insufficiently captures donating blood or participating in a social movement in the real world. In a similar vein, purchasing a used car for $4000 when in poverty is much different than sending a receiver $10 that a researcher gave to the subject to “play” or “toy” around with. The generalization of lab results is further complicated when experiments artificially limit the choice options for participants and restrict response modes to a single dimension, whereas real-world settings usually involve an exit option and multiple response modes. When playing an economic game, subjects are usually prohibited from dropping their current partner and finding another or expressing alternative forms of generosity. For instance, where some people might give money in an ultimatum game, beyond the lab these very same people may abstain from any form of monetary generosity and volunteer their time at a local soup kitchen or donate blood instead. In other words, as Guala (2012) has recently, and quite forcefully, argued: the conditions found in many of our lab experiments—especially those from the behavioral economics tradition—rarely exist in the real-world, which limits the extent to which findings in the lab can generalize to the natural world. Guala applies this reasoning to research on strong reciprocity where support for such a mechanism is strong in many lab experiments but is rarely observed as a key mechanism for the emergence of cooperation in real-world settings (especially the anthropological record).

Fifth, and finally, with experiments, it is difficult to explore a large number of structural conditions that exhibit numerous attributes. For instance, trust involves objects that have many traits on which they vary—the matters at hand, the social and institutional conditions, the shadow of the future, and the trustworthiness of the trustee to name a few. Yet when there are many dimensions of interest, each with varying levels of measurement, the experimental technique becomes unmanageable and breaks down since the sample size requirements for reaching adequate statistical power under these conditions is too great. The issue, however, is that all such parameters—direct, mediating, and conditional effects—should be explored. Experiments in the social sciences, as a result, often investigate only a small number of causal factors with limited levels of measurement, which jeopardizes their external validity. This is also one of the primary reasons why strong reciprocity is supported by numerous lab experiments but overshadowed by other mechanisms of cooperation in the real-world (Guala 2012).

In short, the empirical literature on trust is host to numerous methodological issues and complications. Measures of trust, either attitudinal or behavioral, often lack construct validity and, instead, tend to not measure relational trust but general social trust. And although behavior in trust games is thought to be a “pure” indicator of trust, these games suffer from their own construct validity issues beyond those of the attitudinal trust measures. Namely, that behavior in a trust game is not of trust but of cooperation, and that the cooperation observed is often the result of factors other than trust, such as generosity and risk aversion. As Sen (1973) writes, economists "…have been too prone, on the one hand, to overstate the difficulties of introspection and communication and, on the other hand, to underestimate the problems of studying preferences revealed by observed behavior (p. 258)". Not only that, but surveys and experiments harbor a unique set of methodological shortcomings that adversely affect scientific inferences regardless of the substantive issue of interest: conventional surveys are often imprecise, uncontrolled, and lack clear behavioral outcomes, while laboratory experiments in the social sciences are short on external validity and generalizability. Surveys and experiments, then, may be too blunt of an instrument to adequately "dissect" the social world if that is, in fact, the ultimate goal of sociology in particular and social science in general.

Vignette Experiments: An Alternative Method

To address common issues of measurement and conceptualization found in the trust literature, I use the multifactorial vignette survey method or what I refer to as vignette experiments (VE). Vignette experiments are often defined as written or verbal hypothetical situations describing a person or social environment that contain precise reference to theoretical factors believed to impact a decision-making or judgment-making process of interest (see Alves and Rossi 1978; Rossi and Anderson 1982). As such, VE are appropriately applied when there is some kind of social component to the judgment of an object. Since trust requires judging the trustworthiness of others and is a cognitive decision in the family of knowledge and beliefs, multifactorial vignette surveys are an appropriate method for determining the social and environmental sources of trust.

The basic components of a VE are fairly straightforward (see Rossi and Anderson 1982).

Every VE measures at least one type of *judgment* or decision and at least one theoretically relevant *dimension* or treatment thought to impact said judgment. A judgment—like one's willingness to trust or not to trust—is a rating, rank, or other valuation given by a respondent to an object, while a dimension is a social object or environmental characteristic that can vary in kind or amount, such as race, wealth, physical abuse, or no-smoking sanctions. *Levels* denote the specific values that a dimension takes. So if race is a specific dimension within a vignette, the levels might be white, Hispanic, and African-American. A *factorial object universe* is the set of all unique objects formed by all possible combinations of one level from each of the dimensions. For instance, a VE composed of sex, a dimension with 2 levels, wealth, a dimension with say 24 levels, and race, a dimension with say 6 levels, has a total of 288 (2*24*6) unique objects in the factorial object universe. A *factorial object sample* is an unbiased and usually random sample of the objects in a factorial object universe. If a factorial object sample is then given and administered to a single respondent for judgment then the factorial object sample becomes a *respondent subsample*. A respondent subsample must consist of at least one object in the factorial object universe, but typically the respondent subsample consists of between 10 and 40 objects.

With VE, there exist two possible designs. The first consists of what is called *choice-based conjoint analysis* common to marketing research, where participants are presented with two alternative vignettes consisting of randomly varied dimensions and are asked to choose which vignette they most prefer (see Hainmueller, Hopkins, and Yamamoto 2014). In contrast, the second VE design used in the present dissertation is a *rating-based conjoint analysis*, where participants provide a numerical rating for each vignette which represents their judgment of, degree of preference for, or beliefs about the vignette. I argue that this latter method is desirable as it produces more detailed information about the participant's trust and as it permits linear analysis of within- *and* between-person variation in trust, whereas choice-based conjoint analysis is confined to the analysis of between-person variation in trust.

To provide an example, I will briefly review the Jasso and Opp (1997) *ASR* article on norms of political action. In this article, Jasso and Opp (JO) use VE to measure the polarity, conditionality, intensity, and consensus of political action norms in Germany. In selecting their dimensions and levels JO were guided by collective action theory and previous empirical work on political action norms. From this literature, JO derived a number of social conditions (i.e., dimensions) they thought would impact the felt obligation in respondents to protest. Their dimensions included discontent (economic or political), the kind of protest (i.e., legal or illegal), perceived personal influence (i.e., high or low), expected personal risk (i.e., police action or no problems), the expected number of participants (from unknown to 100,000), and gender (Mr. or Mrs.). JO's factorial object universe consisted of (2)(2)(3)(3)(7)(2) = 504 unique objects. Each respondent was then provided with a unique randomized respondent subsample of 10 objects, and were asked to rate each object "…on a scale consisting of 11 values, ranging from -5 to +5, including the value 0. Positive numbers represent an obligation to protest, negative numbers represent an obligation to not protest, and 0 represents the absence of any obligation at all: the absolute value of the number indicates the strength of the judged obligation (Jasso and Opp 1997: 953)." The authors found that prescriptive, proscriptive, and bipolar political action norms coexist as well as the conditionality of protest norms.

But why VE and not conventional survey or experimental methods? In spite of the shortcomings of social science lab experiments outlined earlier, the task of modeling judgments and behaviors should be left to experimental conditions: experiments, unlike surveys, are precise, controlled, and have clear behavioral outcomes that are dependent on judgments and decisions. Yet, when the various social and environmental sources of a judgment differ with respect to many attributes, designing an appropriate experiment that captures all of these structural parameters is unmanageable and nearly impossible. The issue is that all such parameters should be explored. And since almost all psychological judgments have a multitude of contextual and environmental sources, findings in an experiment are limited to those conditions in the real-world that parallel those found in the experiment.

Luckily, VE permits researchers to explore all theoretically relevant parameters as well as combinations of dimensions that rarely occur in the real world. Let's say a sociologist wanted to study residential segregation and determine whether a neighborhood's racial composition matters for white Americans in their decision to buy a home (see Emerson, Yancey, and Chai 2001). Investigating such as question introduces a number of biases that a VE design addresses and resolves. First, social forces impacting various real-life decisions and judgments tend to be correlated. A white American may be interested in moving to Harlem, but it is difficult to disentangle the effects of the various racial groups on one's choice to live in Harlem from other factors such as Harlem's poverty, unemployment, crime, and inequality, which produces issues of multicollinearity and the partialling fallacy (see Gordon 1968; Land et al. 1990). This is why it is often difficult to determine if modernization is a necessary condition for democracy since democracies do not exist with a GDP per capita below $6000 (Przeworski 1991). In other words, sometimes the counterfactual cases necessary to determine causality with observational research simply do not exist.

Second, and related to the first complication, observational research, by definition, is unable to resolve omitted variable bias arising from unobserved confounding variables.

Although a conventional survey of home owners might shed light on the reasons for their home purchase, an unobserved parameter, such as a county's "healthiness" or "environmentally friendly" rating, could have been the motivating factor behind their decision to purchase a home and not necessarily the racial composition of said county.

Third, real-world judgments tend to be constrained by social and environmental factors that have little to do with the objects being judged. To carry on with my example, a typical white American cannot hope to purchase any house on the market, only those within his or her income range. Because of this, a researcher is unable to explore decision heterogeneity or judgment consensus within an individual: where would a person decide to live if they could only afford a studio apartment in Harlem or a palatial mansion in the Hamptons? Would they always choose the Hamptons in spite of other motivating structural and environmental factors?

Fourth, many real-life decisions are rare events in people's everyday lives. This is especially the case when judgments involve special interests. The decision to buy a home is something that the typical American rarely faces in a lifetime. And with rising student load debt for certain cohorts in America, it may never happen. Likewise, my decision to trust, say, a financial adviser is something I might decide on only once.

The VE design allows a researcher to avoid many of these complications by producing orthogonal and rectangular data. That is, each level in a dimension will appear as equally frequent with each level in every other dimension (i.e., orthogonal), and each level within a dimension will appear in the factorial universe as frequent as any other level within the dimension (i.e., rectangular). Because of orthogonality and rectangularity, it is possible to disentangle the separate effects of two dimensions upon judgments that are ordinarily correlated in the real-world. In addition, if respondents are presented with respondent subsamples greater than 1, then researchers can explore within-respondent decision consensus in judgment situations that might rarely happen in the real world. And since dimensions and levels are randomized, a social scientist can frame the discussion of these stimuli in terms of causes and consequences and not merely as associations.

As Rossi and Anderson write "All of this suggests that we should move away from real-life choices to a contrived but enriched set of choices in which individuals are asked to make many judgments on sets of social objects" (1982: 28). In spite of this, VE, like any other method, has a number of shortcomings I should address. VE is also a fairly nascent methodology, so I will review the accumulated knowledge concerning how to construct an internally and externally valid VE. All of which were derived from the following sources (Buskens 2002; Buskens and Weesie 2000; Diefenbach and Opp 2007; Finch 1987; Ganong and Coleman 2005; Hagan, Ferrales, and Jasso 2008; Hechter, Kim, and Baer 2005; Hechter, Ranger-Moore, Jasso, and Horne 1999; Hegtvedt 1988; Horne 2003; Hughes 1998; Jasso 1988, 2006; Jasso and Opp 1997; Jasso and Rossi 1977; Johnson and Ford 1996; Lanza and Carifio 1992; Lauder 2002; Lyons 2006; Ludwick and Zeller 2001; Neff 1979; Opp 2002; Wallander 2009; Wason, Polonsky, and Hyman 2002; Will and Cochran 1995).

How to Construct an Internally Valid and Reliable Vignette Experiment

Coversheet. Every FS should have a coversheet providing an overview of the context and situation in which respondents are to place their judgments. Anything the researcher wants the subjects to imagine prior to receiving their factorial universe sub-sample should be explicitly stated in the coversheet. For instance, if the judgment under question is a high stakes choice in the real-world, such as buying a house or a used car, then the researcher should notify the respondent to imagine that the amount of money is relatively large compared to their budget in the hypothetical vignette universe (e.g., Buskens and Weesie 2000). Or, if the vignette is in the third-person, then the researcher should instruct the subject to pretend that they are the person described in the vignette (e.g., Hegtvedt 1988; Johnson and Ford 1996). The coversheet, in a sense, lays the foundation for the hypothetical universe much like a prologue does for a novel.

Vignette Experiment Design: Dimensions and Levels. First, and foremost, the researcher should choose an appropriate setting. The setting should be sufficiently pertinent, plausible, and realistic (Buskens and Weesie 2000). In other words, the dimensions and levels should appear both “relevant” (Neff 1979) and “real” (Finch 1987) to the participants. For example, a hypothetical situation where the respondent purchases a home should not be administered to 16 year old high school students. Likewise, a researcher should not include an “alien invasion” as a dimension for home purchases.

Second, dimensions and levels should be adequately, but not overly, detailed. If I’m interested in what political factors might promote positive attitudes toward social activism, I would not detail prior historical injustice, and, instead, note how African-Americans are targeted more than whites by police. This issue of detail is important since (a) vague dimensions and levels facilitate respondent interpretations that are beyond the control of the researcher and might bias the results, and (b) overly detailed dimensions and levels may cognitively overburden respondents and lead to loss of attention and respondent attrition. Thus, dimensions and levels should be sufficiently but not overly detailed. A researcher can determine whether their dimensions are too overly (or under) detailed by conducting pilot studies and by requesting other academics in their field to provide feedback on dimension detail (Ganong and Coleman 2005; Lanza and Carifio 1992; Simpson and Piquero 2002).

Third, arrange dimensions so that they are coherent and internally consistent. This attention to “flow” is critical: if dimension B does not logically follow dimension A and dimension C appears to be logically prior to dimension A, then respondents are likely to become confused and lose interest. This can also be assessed with pilot studies and peer review.

Fourth, VE dimensions should be worded as precise as possible so that different versions of a vignette would be formally, although not precisely, equivalent. Doing so guards against framing effects and ensures that any variation in wording does not change the objective information in the VE or the respondent’s perceptions thereof. For instance, a researcher interested in understanding a person’s willingness to contribute to a public good should not highlight how other contributors are “investment bankers” in one VE and refer to the same contributors as “neighbors” in another without invoking uncontrolled respondent framing projections. Precise wording of dimensions undermines the need for respondents to invent their own facts and conditions before reaching a judgment that can ultimately bias results.

Fifth, make the tone and meaning of the dimensions consistent with the research question. A marketer would not want to develop a highly emotional VE to investigate what brand of toothpaste people prefer. Likewise, a psychologist interested in attitudes toward assault would want to construct a VE that has elements of emotional stress for the assaulted.

Sixth, the manipulated dimensions and levels within dimensions should be obvious. For instance, instead of indicating sex differences merely by giving actors in the factorial universe different gender appropriate names, the actors should be described in greater detail. While Mike or Sarah would suffice, the researcher should use “Mike, a 54 year-old father and son of Robert Smith”.

Seventh, VEs, like conventional surveys, suffer from social desirability bias. This bias emerges when there is a gap between what people think they should or ought to do versus what they actually do or want to do. While some think that social desirability bias is less of an issue in VEs (see Choong, Ho, and McDonald 2002) because respondents are not fully attentive to the manipulations (Wallander 2009) or because VEs allow people to 'flirt with risky behavior at no personal cost' (Hughes 1998), social desirability should not be ignored, which is often done with VEs. There are two ways of addressing social desirability in VEs. First, use the Crowne-Marlow social desirability scale—or a shortened version of it—and include the index as a control variable in statistical analyses, or, second, use third-person dimensions and levels that also reduce attribution error where people believe that they have more control over their situation than they actually do.

Eighth, impossible combinations of levels should be removed. For instance, a VE investigating attitudes toward sexual assault should exclude the level in a dimension for assault such as "the victim was punched" when combined with a level in another dimension for how the assault was conducted such as "the victim was physically assaulted over the phone". Although the issue seems trivial, removing impossible combinations of dimensions produce non-orthogonal and non-rectangular data. The size of this bias, however, varies depending on the number of impossible combinations removed. Excluding only a few will likely not bias the findings. In spite of this bias, Auspung, Hinz, and Liebig (2010) find that although implausible combinations of levels of dimensions do not yield a drastic increase in dropouts or non-responses, it does generate a continued response with a significantly lower relevance of the dimensions. Thus, implausible combinations should be excluded.

Lastly, if possible, researchers should rely on dimension and level formulations developed in prior studies. Of course theoretical models will change and foster different research questions that require new vignette situations and contextualized scenarios, but the researcher should nevertheless use prior dimensions, especially those that have been internally and externally validated.

Number of Levels, Dimensions, and Vignettes per Respondent. In order to maximize internal validity, researchers should also consider how many dimensions and levels to investigate in addition to the amount of unique vignettes each respondent should evaluate. With respect to the number of dimensions, the number to select should obviously be related to theory and the object of study. A sociologist interested in attitudes toward political protest, for instance, would probably not include a dimension measuring sport preferences or food consumption and, instead, elect to include dimensions of grievances and perceived injustice. Moreover, the same sociologists would not want to exclude theoretically relevant factors such as social influence to circumvent *uncontrolled respondent projections*. This bias occurs when respondents require certain “facts” about a situation before they can reach a judgment, and if certain facts are absent, then the respondent will invent said fact, which is beyond the control of the experimenter and biases the findings (see Cullen, Link, Travis, and Wozniak 1985 and Miethe 1982 for a similar debate in the criminology literature).

One simple solution to this problem involves increasing the number of dimensions and levels per dimension. This strategy is intended to add “facts” to the VE and reduce *uncontrolled respondent projections*. Doing so, however, introduces unnecessary complexity that increases cognitive load along with learning and fatigue effects. All of which poses a problem: the exact number of dimensions to include without suffering from these various problems remains contentious. Researchers find that anywhere from 5 to 12 dimensions yield consistent effect sizes across vignettes of varying dimensional size (Auspurg, Hinz, and Liebig 2010).

The number of levels to include, like dimensions, depends on the object of study and theory. Yet, some suggest that the number of levels should be kept to a minimum not because of issues related to complexity or respondent cognitive fatigue, but because dimensions with more than two mutually exclusive *and* exhaustive levels are difficult to create and design (Buskens and Weesie 2000). Subjects also find it difficult to distinguish between dimensions with 3 or more levels (or magnitudes). As a result, responses to such dimensions tend to gravitate toward lower and upper values of the dimension. Ideally, levels should be kept to a minimum.

With respect to the total number of vignettes a respondent should assess, prior research tends to suggest around 10 vignettes per respondent (see Diefenbach and Opp 2007; Jasso and Opp 1997; for seven see Opp 2002; Will and Cochran 1995; for five see Lyons 2006). This is an important issue since too few vignettes suppress learning effects (i.e., how to navigate the vignette world) and too many foster respondent exhaustion. Respondents tend to be unfamiliar with VE designs and, as a result, produce biased answers when the number of vignettes is too few. Respondents, in effect, need to learn how to participate in VEs since "…learning is connected to a more consistent response behavior and to the capacity to integrate a higher number of dimensions into the judgments" (Auspurg, Hinz, and Liebig 2010: 7). Yet, if a researcher errs on providing too many vignettes so as to foster learning effects, then respondents will suffer exhaustion; that is, subjects will rely on simple decision heuristics and fail to fully consider some or all of the dimensions in the remaining vignettes. Exhaustion can also occur when respondents are presented with too many dimensions per vignette. Because of this dynamic between learning and fatigue, Auspurg, Hinz, and Liebig (2010) suggest that researchers should administer at least 10 vignettes per respondent to promote learning effects—a decline in the mean response time per vignette assessment—and avoid exhaustion (see also Sauer, Auspurg, Hinz, and Liebig 2010). The use of 10 or more vignettes per respondent also permits a researcher to use random samples drawn from the vignette universe for each respondent instead of quota samples that reduce statistical inefficiencies and issues of power associated with vignette samples less than 10 (Dülmer 2007).

The relationship between the total number of dimensions and the total number of vignettes per respondent is not additive, but cumulative. Sauer, Auspurg, Hinz, and Liebig (2011) find that a large number of dimensions (e.g., 12) coupled with a large number of vignettes (e.g., 30) produces the greatest response inconsistency, especially among older populations (i.e., 60 and older). The authors also show that learning, fatigue, *and* finishing (i.e., respondents are more consistent towards the end of the study) effects are more likely to occur—and yield similar, consistent patterns regardless of the number of dimensions (i.e., 5, 8, or 12)—among older populations (i.e., 60 and older), while learning, fatigue, and finishing effects do not yield consistent patterns across the number of dimensions for those younger than 60 years old. Learning effects, however, occur as the number of vignettes per respondent increases regardless of age. Moreover, a low number of dimensions coupled with a low number of vignettes per respondent produces the most consistent evaluations from vignette to vignette, thereby reducing fatigue and finishing effects and promoting learning effects.

In general, then, the methodological research up to this point suggests that increasing the number of dimensions should be inversely related to the number of vignettes (and vice versa) if one wants to avoid methodological artifacts. All of this suggests that 10 vignettes per respondent fosters learning effects, avoids exhaustion and fatigue effects, bypasses issues of cognitive heterogeneity in a population, and minimizes inefficiencies and statistical biases associated with random samples (versus quota samples) drawn from a vignette universe. Importantly, many of these findings hold when coupled 10 or fewer dimensions.

Pilot Studies. In order to make hypothetical situations in VE more believable and, hence, more internally valid, studies suggest that researchers should adjust vignette dimensions and levels for internal consistency and plausibility with pilot studies (see Ganong and Coleman 2005; Simpson and Piquero 2002). By subjecting vignettes to a pilot study, researchers can ensure that future respondents are more likely to believe that the situations depicted in the vignettes are realistic and consistent. There are two ways of going about doing this. First, administer the VE to a population of interest and include a closed-ended question at the end of every assessed vignette, such as "How plausible did you find certain aspects of the situation described above?" measured on a Likert scale from -3 (very implausible) to +3 (very plausible), and explore the vignettes that generated the highest implausibility. Second, in addition to closed-ended questions about vignette realism, ask open-ended questions about the factors missing from the situations described in the vignette that were important in the respondents judgments *and* factors respondents invented that played a role in their assessment of the situations (see Ganong and Coleman 2005). This last part is critical since vignettes of low detail produce uncontrolled respondent projections. Depending responses to the open- and closed-ended questions, researchers can adjust their dimensions so as to enhance the validity of their VEs.

Post-Test Questions. Besides pilot studies, post-test questions can be used to control for respondent biases, such as their prior experiences with the situation described in the vignettes, their ability to judge hypothetical vignette situations, and whether they find such situations and assessments plausible, that can then be included in statistical analyses. Buskens and Weesie (2000) suggest that researchers should include questions that ask subjects whether they can judge the severity of the situation described in the vignette. For instance, if a respondent is to "purchase a home" in the vignette universe, ask them if they are able to judge the quality of a home in real life. Or, ask respondents how much the vignette resembles their own encounters or something they have experienced in real-life (Rooks, Raub, and Selten 2000). Others suggest that researchers should include questions that assess the success of the role-play method necessary for the success of vignettes (Johnson and Ford 1996; Simpson and Piquero 2002). These survey items should focus on the ease of understanding vignette descriptions, respondent involvement in the role (either first or third person), respondent confidence in their responses, and the realism of their responses.

How to Assess the External Validity of Vignette Experiments

Although VEs have a number of advantages over conventional surveys and laboratory experiments, they suffer from one major weakness: external validity. The basic foundation of a vignette is its hypothetical structure. Respondents are presented with a written or verbal situation (or a series of unique situations) describing a person or social environment in which the respondent must imagine how they themselves would judge or behave under those conditions. The issue with this method is that it is difficult to determine whether one can extrapolate judgments or attitudes in a hypothetical vignette to the real world or if such measured attitudes and judgments in a vignette predict actual behavior.

There are a number of proposed methods researchers can use to deal with this issue. First, researchers can compare VE results with well-known and previously validated explicit survey measures. For instance, Liker (1982) compared the results of a “family prestige” vignette to survey items administered to actual households on “prestige judgments”. Second, researchers can subject the VE to a panel of experts. Lanza and Carifio (1992) asked a panel of experts (12 to be exact) in the field of nursing to evaluate their vignettes concerned with perceptions of assault on nurses. Doing so helped the researchers achieve a level of convergent, discriminant, and external validity that the researchers could not have achieved without. Third, researchers can try to predict actual behavior. Horne (2003), for instance, used vignettes to measure norms and explored whether responses to vignette situations could predict behavior in controlled conditions found in an experiment. In contrast, Hechter, Kim, and Baer (2005) used vignettes to measures attitudes toward volunteerism and sought whether these measures predicted actual volunteering. Fourth, some practitioners of VEs test for agreement between those who have experienced what is being described in the vignette universe and those who have not experienced the situation, such as an assault or rape (see Carifio and Lanza 1995).

In short, practitioners of VEs face a number of unique design issues that readers and consumers of such research should be made aware. Luckily, there are numerous methods available to minimize these problems. Many of which have been employed in the present dissertation.

APPENDIX B: DESIGN AND DATA

Design

For the present dissertation I designed two separate hypothetical situations: a 'car repair' scenario and a 'group project' scenario. While the 'car repair' scenario was inspired by Barrera and Buskens (2012), Buskens (2002), Buskens and Weesie (2000), and Rooks et al. (2000), many of the dimensions and levels for the 'car repair' scenario were my own creation. And the 'group project' scenario, which is a unique contribution to the literature, is also my design. I explore two different vignettes for two reasons: first, to explore the robustness of the hypotheses outlined in Chapter 3, rather than test hypothesized differences in parameter estimates across scenarios (Guala 2012; Levitt and List 2007); and, second, to combat false-positive results that currently plague the social sciences (Ioannidis 2005; Murayama, Pekrun, and Fiedler 2013), especially social psychological research (see Begley and Ellis 2012; Simmons, Nelson and Simonsohn 2011).

Directly after consenting to participate in the study, each respondent was shown a cover sheet detailing either the 'car repair' or 'group project' scenario. The hypothetical 'car repair' scenario is as follows:

> "You just started a new job that requires you to commute every day to work. A couple of days before the job starts you decide to take your car in to an automotive repair shop called The Autoshop for an oil change. In the middle of the oil change, the auto mechanic tells you about a major issue with your car's engine that will cost about $1,000 to repair, including parts and labor. You would like your car to be in working order, but you want to spend your money wisely since the amount of money required to restore the car's engine is large compared to your budget.
>
> Additionally, you have some concern: the auto mechanic might suggest fraudulent (or intentionally deceptive) services that are unnecessary and quite costly to you but beneficial to the auto mechanic. You're also concerned since the auto mechanic might provide low quality services at an exaggerated price that would require additional and costly repairs in the future. Plus, you know people who've paid for needless repairs and have had recurrent car problems because of poor quality auto-mechanic services."

And the hypothetical ‘group project’ scenario is as follows:

> “You are a college student who is enrolled in a course that requires a group project assignment. Each group project involves two separate tasks, one student to analyze data and one student to write a technical report of the results. For your specific group, you were assigned the task of writing a technical report of the results, while your partner was assigned the task of analyzing the data.
>
> But you have some concern: students receive the same grade regardless of their contribution to the group project. You’re also concerned since the group project is difficult to complete alone and your partner’s contribution to the group project is unknown and uncertain. In other words, if your partner doesn’t complete the data analysis for the group project, you might not finish in time and fail the assignment as you’ll have to analyze the data without help and write a technical report of the results alone. But if you manage to analyze the data and write a technical report of the results, your partner will receive the same grade as you without having contributed to the group project. Unfortunately, you know people who have failed group projects in the past because other group members did not complete their assigned tasks.”

Each coversheet screen provides information about the respondent as a car owner or as a student, why the respondent is in this situation, constraints facing the respondent, concerns the respondent should have about the situation, and why a trust dilemma faces the respondent. These scenarios were constructed to maximize differences across a number of theoretically relevant parameters while maintaining congruency of dimensions between scenarios. These differences include the following (with ‘car repair’ versus ‘group project’ comparisons): bilateral versus unilateral exchange, market versus non-market exchange, tangible versus intangible resources, mutual dependence versus interdependence, and transferable versus non-transferable goods. Table B.1 provides an extensive list of theoretical differences between the two scenarios.

Table B.1. Theoretical Dimensions Unique to Each Hypothetical Scenario

Car Repair	Group Project
Monetary exchange	Non-Monetary exchange
Market exchange	Non-Market exchange
Direct Exchange	Indirect Exchange
Negotiated (bilateral) exchange	Productive (unilateral) exchange
Mixed-motive game	Mixed-Motive game
Instrumental (vs. affective) relations	Instrumental (vs. affective) relations
Tangible resources	Intangible resources

Non-duplicable	Non-duplicable
Transferable	Non-transferable
Specific obligation (vs. diffuse)	Specific obligation (vs. diffuse)
Dependence	Interdependence
Serial decisions	Serial decisions
Imperfect information	Imperfect information
Non-zero-sum game	Non-zero-sum game
Excludable goods	Non-excludable good
Low jointness of supply	High jointness of supply
High rivalness of consumption	Low rivalness of consumption
N/A	Non-divisible contribution
Non-iterative	Non-iterative
N/A	Production function unkown
Social role	Non-social role

Monetary exchange = by monetary exchange I mean any monetary resource exchanged between A and B.

Market exchange = by market exchange I mean any structure that allows buyers and sellers to exchange or trade goods, services, or information. Market participants consist of all the buyers and sellers of a good who influence its price.

Indirect exchange = by indirect exchange I mean any exchange in which A and B do not directly receive resources, services, or information from the other.

Direct exchange = by direct exchange I mean any exchange in which B receives resources from A and A receives resources from B.

Productive exchange = by productive exchange I mean any indirect and generalized exchange that entails person-to-group and group-to-person exchange (a classic example is a public good). Although negotiations are common with productive exchange, they are not necessary conditions for a productive exchange.

Negotiated exchange = by negotiated exchange I mean any joint action by both parties to reach specific and often binding agreements on the division of benefits where each episode of exchange is a discrete event that benefits both parties bilaterially although not necessarily equally.

Mixed-motive game = by mixed-motive game I mean any non-constant-sum game that has elements of cooperation and conflict (i.e., a situation that gives rise to mutual interest and conflict)

Instrumental exchange = by instrumental exchange I mean any exchange that involves the transfer of tangible or intangible resources (be it money, goods, or services) that are not affective, such as expressions of love, friendship, etc.

Tangible resource = by tangible resource I mean any physical good, service, or product.

Specific obligation = by specific obligation I mean any exchange that involves the exchange of particular resources. In contrast, direct, unilateral reciprocal exchanges create diffuse obligations to return some unspecified resource in the future.

Duplicable resource = by duplicable resource I mean any resource that can be retained by the original receiver but also copied and given to a new receiver (non-duplicable resources prohibit fascimilies of resources).

Transferable resource = by transferable resource I mean any resource that can be subsequently exchanged once they are acquired (non-transferable resources prohibit subsequent exchanges of said resource).

Interdependence = by interdependence I mean each actor's outcomes depends on the behaviors of all actors in a social unit or group (e.g., productive exchange or public goods). Interdependence is the defining structure of groups.

Dependence = by dependence I mean each actor's outcomes depends solely on the behavior of another actor or actors. Dependence is the defining structure of exchange relations and exchange networks.

Serial decisions = by serial decisions I mean any decision where the choice to act is conditional on the actions of prior actors (this is in contrast to parallel decisions).

Non-zero-sum game = by non-zero-sum game I mean any game where the benefits to all players in a game, for every combination of strategies, always adds to a negative or positive sum. This is in contrast to a zero-sum game where the total benefit always sums to 0, regardless of the strategies played.

Non-excludable good = by non-excludable good I mean any good or resource that can be consumed without having contributed to its production.

High jointness of supply = by jointness of supply I mean the amount of a good each individual receives is inversely proportioanl to the number of individuals who enjoy it.

Low rivalness of consumption = by rivalness of consumption I mean the benefit of a good each individual receives is inversely proportional to the number of individuals who enjoy it.

Non-divisible contribution = by non-divisible contribution I mean any contribution to a public good whereby action is binary (cooperate or defect) with no intermediate contributions.

Non-iterative = by non-iterative I mean any action or behavior that is "one-shot". That is, there is no demand for ongoing exchange or contributions from respondents in the scenarios.

Production function unknown = by production function I mean the relationship between the level of resources contributed toward the production of a public good (i.e., inputs of collective action) and the level of the public good that is provided (i.e., outputs of the collective good). In the 'group project' scenario, the production function is unknown.

Social role = by social role I mean any norm or script associated with individuals in a particular situation. For instance, there are strong norms against trusting car dealers and auto mechanics, whereas these norms are not as strong for members of group projects at either work or school.

After this, participants were informed of how they would be assessing a series of hypothetical situations based on the initial scenario, and that each situation would end with two questions: one on trust and one on causal attributions (or on other-praising emotions depending on the population of subjects). Participants were then quizzed on the respective scenarios outlined above with two of three screener questions (Berinsky et al. 2014) and then shown ten vignettes randomly drawn with replacement from the vignette object universe.

Each vignette experiment features a 5 (Age: 20, 30, 40, 50, or 60 year old) x 4 (Race: white, black, Hispanic, or Asian) x 2 (Gender: male or female) x 4 (Reputation: no reputation or positive reputation) x 3 (Halo: blank, bad used computer, or good used computer) x 2 (Competence: blank or competent) x 2 (Exertion: blank or hard-working) x 6 (Perceived motivations: uncooperative, no prior interaction, prior interaction, encapsulated interests, goodwill, or virtuous dispositions) x 3 (Contract: blank, non-binding contract, or binding contract) x 3 (Regulation: no regulations, non-monetary regulations, or monetary regulations) multifactorial vignette design, which yields a factorial object universe of 103,680 (2^3 x 3^3 x 4^2 x 5^1 x 6^1) unique vignettes (Jasso 2006; Rossi and Nock 1982).

These 10 dimensions were included for theoretical and empirical reasons (each of which will be discussed below). Both the 'car repair' and the 'group project' scenarios were constructed to maximize comparability across dimensions and levels as wells minimize differences between wording of the levels to undermine *uncontrolled respondent projections*. The first set of dimensions consider the Age, Race, and Gender of the hypothetical auto mechanic ('car repair' scenario) or student ('group project' scenario). For age, my goal was to not include every age possible, but plausible age ranges: nothing younger than 18 years of age and nothing older than 65 years of age. As a result, I restricted the Age dimension between 20 and 60 years of age with 10 year intervals. For Race, white, black, Hispanic, and Asian were included as these are the four most common racial categories in the U.S. For Gender, only male and female levels were included as transgender and other gender-based categories are uncommon in the U.S. These three dimensions were included to investigate whether status characteristics, social identities, or both impacted trust.

For status characteristics, I expect (i) males to produce greater trust than females, (ii) increases in age to produce increases in trust, and (iii) Asians to produce greater trust than all other races. I derive these expectations from stereotypes in American society about the association of diffuse status characteristics such as age, race, and gender with competence in general and competence in relation to specific mechanical skills such as auto maintenance and data analysis. That is, men are viewed as more competent than women with respect to mechanical skills (Nosek et al. 2009); older adults are viewed as more competent than younger adults—but this effect reverses for the elderly—with respect to mechanical skills (Cuddy, Norton, and Fiske 2005); and Asians are generally more respected for their competence in multiple domains but also for their specific competencies with respect to mechanical skills (Jackson et al. 1996). For social identity, I expect common memberships in age, race, and gender to increase trust to a greater extent than uncommon memberships. For instance, a male auto mechanic should produce greater trust for a male respondent than a female auto mechanic in the ‘car repair’ scenario. Likewise, a white student should produce greater trust for a white respondent than all other racial categories in the ‘group project’ scenario.

The next dimension—Reputation—is drawn from Buskens (2002) and Buskens and Weesie (2000). This dimension is intended to investigate informational effects on trust and relative effect sizes. That is: Does information regarding a prior successful exchange between B (the possible trustee) and D (A’s network relation) with respect to matter Y increase A’s trust in B with respect to matter Y? And is the size of this effect greater than other dimensions of theoretical importance? To capture reputation, I follow Buskens (2002) and operationalize the Reputation dimension as ‘positive’ and ‘no’ reputation. For positive reputation in the ‘car repair’ and ‘group project’ scenarios, respectively: “Some of your friends have used the auto mechanic’s services before and they were satisfied with the work” and “Some of your friends have worked on a group project with the student before and they were satisfied with the student’s contribution”. For no reputation in the ‘car repair’ and ‘group project’ scenarios, respectively: “As far as you know, none of your friends have used the auto mechanic’s services before” and “As far as you know, none of your friends have worked on a group project with the student before”.

Drawing on the literature in social psychology, I also explore halo effects and pitchfork effects in the formation of trust. The halo effect is a cognitive bias in which one's beliefs, expectations, or judgments about another person's character (or behavior) with respect to a particular matter are influenced by positive impressions of that person's character (or behavior) with respect to an entirely unrelated matter or domain (Thorndike 1920). With respect to trust, I expect A's trust in B with respect to matter Y to be influenced by A's successful exchange with B in regards to a different matter Z. Thus, I operationalize the Halo effect using a dimension with three levels ('group project' scenario is parentheses): a Blank level where the respondent shown nothing, a level for the pitchfork effect (e.g., "The auto mechanic (student) sold you a used computer before but you were dissatisfied with the computer"), and a level for the halo effect (e.g., "The auto mechanic (student) sold you a used computer before and you were satisfied with the computer"). This dimension is also intended to investigate the effects of negativity bias in the formation of trust by comparing the effect sizes of a positive stimulus (i.e., halo effect) with an equally valenced negative stimulus (i.e., pitchfork effect) (see Baumeister et al. 2001; Koenig and Jaswal 2011; Vaish et al. 2008).

Understanding the types of motivations necessary to produce trust is central to the present dissertation. My goal is to adjudicate between social constraint views, encapsulated interest views, goodwill views, and virtuous disposition views of trust and trustworthiness. To operationalize each of these perspectives, I use a Perceived motivations dimension that consists of six levels. Each level within this dimension centers on information provided by prior interactions, builds on the previous level, and—in the case of the encapsulated interests, goodwill, and virtuous dispositions levels—imposes beliefs about the motivations of an exchange partner. The prior interactions level is included to disentangle the effect of previous exchange from the beliefs imposed by the encapsulated interest, goodwill, and virtuous dispositions levels. The goodwill and virtuous disposition levels include an additional behavior to signal regard for the truster: an act of ‘gift giving’ that, according to social exchange theory in sociology and anthropology, represents expressive motivations (Molm et al. 2007). A level for prior unsuccessful exchange, ‘uncooperative’, is included to explore the spectrum of perceived motivations. Although not hypothesized, I expect the ‘uncooperative’ level to have the greatest impact on trust since negative stimuli, all else equal, have stronger effects than equally valenced positive stimuli (Baumeister et al. 2001). The levels for the Perceived motivation dimension in the ‘car repair’ scenario are as follows:

- *No prior interaction*: “The auto mechanic has never serviced your car before”.
- *Uncooperative*: “The auto mechanic has serviced your car before but provided fraudulent and costly repairs”.
- *Prior interaction*: “The auto mechanic has serviced your car before and always provides justifiable repairs”.
- *Encapsulated interests*: “The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic is interested in your future business”.
- *Goodwill*: “The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic genuinely cares for and is concerned about your interests. You know this since the auto mechanic has repaired your car for free when you couldn’t afford the cost of repairs”.
- *Virtuous dispositions*: “The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic genuinely cares for and is concerned about the interests of all customers. You know this since the auto mechanic has repaired your car and other customers’ cars for free when customers couldn’t afford the cost of repairs”.

And the levels for the Perceived motivation dimension in the ‘group project’ scenario are as follows:

- *No prior interaction*: “The student has never worked on a group project with you before”.
- *Uncooperative*: “The student has worked on a group project with you before but failed to complete the assigned data analysis task”.
- *Prior interaction*: “The student has worked on group projects with you before and always completes the assigned data analysis task”.

- *Encapsulated interests*: "The student has worked on group projects with you before and always completes the assigned data analysis task because the student is interested in working with you as a partner on future group projects".
- *Goodwill*: "The student has worked on group projects with you before and always completes the assigned data analysis task because the student genuinely cares for and is concerned about your interests. You know this since the student has completed your assigned task when you were too overwhelmed with other obligations and commitments to finish it yourself".
- *Virtuous dispositions*: "The student has worked on group projects with you before and always completes the assigned data analysis task because the student genuinely cares for and is concerned about the interests of all group members. You know this since the student has completed your assigned task and tasks assigned to other group members when group members were too overwhelmed with other obligations and commitments to finish it themselves".

A goal of the present dissertation is to also investigate whether competence and exertion (elements of capacity and motivation, respectively) impact trust and to determine which components of trustworthiness—competence, exertion, or commitment—have the greatest impact on trust. To operationalize Competence, I use the following levels ('group project' scenario in parentheses): a Blank level where the respondent shown nothing and "[And or but], as best you can tell, is a competent machinist (data analyst)". "And" is used for the following levels in the Perceived motivations dimension: *uncooperative*, *prior interaction*, *encapsulated interests*, *goodwill*, and *virtuous dispositions*; "but" is used in combination with the *no prior interaction* level. To operationalize Exertion, I used the following levels ('group project' scenario in parentheses): a Blank level where the respondent shown nothing and "[And or but], as best you can tell, is a hard-working machinist (data analyst)". "And" is used for the following levels in the Perceived motivations dimension: *uncooperative*, *prior interaction*, *encapsulated interests*, *goodwill*, and *virtuous dispositions*; "but" is used in combination with the *no prior interaction* level. When the auto mechanic or student are both competent and hard-working, I combine the sentences: "[And or but], as best you can tell, the auto mechanic is a hard-working, competent machinist".

To operationalize social constraints, two separate dimensions—Contract and Regulation—consisting of three levels each were included. The levels for the Contract dimension in the 'car repair' scenario are as follows:

- *No contract*: Blank (i.e., participant shown nothing).
- *Non-binding contract*: "The auto mechanic verbally promises you that the repairs and new engine parts will last for at least 50,000 miles".
- *Binding contract*: "The auto mechanic signs a limited warranty outlining how the auto mechanic will be subject to costly professional penalties if the repairs and new engine parts do not last 50,000 miles".

The levels for the Contract dimension in the 'group project' scenario are as follows:

- *No contract*: Blank (i.e., participant shown nothing).
- *Non-binding contract*: "The student verbally promises you that the data analysis for the group project will be completed on time".
- *Binding contract*: "The student signs an academic honor pledge outlining how the student will be subject to costly academic penalties if the data analysis for the group project is not completed on time".

Conceptually, non-binding contracts, such as handshakes and verbal promises, facilitate exchange sans external enforcement. In spite of this, I employ a level for non-binding contracts to compare and contrast the effects of binding contracts. This is important as the causal attribution hypothesis might not hold for non-binding contracts internal to an A-B exchange relationship but hold for binding contracts external to an A-B exchange relationship. If this is the case, such evidence would further support hypothesis 6.[57] Moreover, binding and non-binding contracts have been shown to produce different amounts of trust and cooperation as a result of attributing another's cooperation to constraints imposed, rather than to a trustee's internal motivations (e.g., Malhotra and Murnighan 2002). This argument, however, assumes

[57] Contracts vary in the degree to which they can be enforced and are binding. For instance, strong normative pressures arising from community enforcement mechanisms might make some forms of non-binding contracts, such as handshakes, more binding. In spite of this, classic conceptualizations of non-binding contracts consist of agreements between two interacting parties in which offers are made and accepted without legal or community-based enforcement. This is how I operationalize the non-binding contract level used here.

error-free causal attributions. As a result, my goal is to see if these arguments hold under misattributions and investigate if and how attribution biases and (non)binding contracts interact in their influence on trust.

Following the recent literature on (non)monetary sanctions and trust (Chen et al. 2009; Mulder et al. 2006), I constructed the Regulation dimension in the 'car repair' scenario to consist of the following three levels:

- *No regulation*: "An automotive agency does not regulate services at The Autoshop".
- *Non-monetary regulations*: "An automotive agency regulates services at The Autoshop by teaching auto mechanics who provide fraudulent services to their customers about business ethics and professional integrity".
- *Monetary regulations*: "An automotive agency regulates services at The Autoshop by fining auto mechanics who provide fraudulent services to their customers".

And the regulation dimension in the 'group project' scenario is as follows:

- *No regulation*: "The college does not regulate contributions to group projects".
- *Non-monetary regulations*: "The college regulates contributions to group projects by teaching students who don't turn in their assigned tasks about academic ethics and educational integrity".
- *Monetary regulations*: "The college regulates contributions to group projects by revoking financial aid and academic scholarships from students who don't turn in their assigned tasks. And, as far as you know, the student receives financial aid".

In other words, the Regulation dimension operationalizes organizational constraints that control transactions in entire exchange domains (i.e., multiple exchange relationships), whereas the Contract dimension operationalizes social constraints that emerge from and apply to specific exchange relationships. Thus, I treat the two operationalizations of social constraints—Contract and Regulation—as distinct dimensions separate from Perceived Motivations as internal motivations, such as encapsulated interests, can occur in the presence or absence of social constraints.

After assessing the ten vignettes, participants filled out a demographic questionnaire and a series of conventional survey items about generalized and particularized trust, voluntary organization memberships, social value orientations, risk aversion, trustworthiness, and a final screener question. Afterwards, participants were debriefed, thanked for their participation, and paid $2 in the case of Amazon.com Mechanical Turk workers or entered into a lottery for one of six $50 bills in the case of University of Washington undergraduate students

See Appendix C for a summary of the vignette experiment, conventional survey items, and vignette dimensions.

Data

Studies 1a and 1b. Participants were contacted over Amazon.com's Mechanical Turk (MTurk) via a HIT (Human Intelligence Task) advertising $2 payment for participating in a web-based sociology experiment. Studies 1a and 1b were published on Amazon.com's Mechanical Turk Requester site on October 2nd and October 9th of 2013, respectively. Both studies were completed on the day of their publication. To be eligible, MTurk participants must have been legal adults residing in the U.S. with approval rates 90% or above on previous MTurk tasks (Berinsky et al. 2012; Mason and Suri 2012). After accepting the HIT and consenting to participate in the study, participants were subjected to the instruments found in Appendix C (and as discussed above in the *Design* section of this appendix).

One thousand two hundred and seventy-six MTurk workers completed study 1a (665 males, 593 females, 4 other gender, 14 PNS/missing; median age = 29), while one thousand three hundred and twenty-two Mechanical Turk workers completed study 1b (577 males, 722 females, 1 other gender, 22 PNS/missing; median age = 29). Each study consisted of a unique MTurk sample with no redundant workers across samples. MTurk workers that completed a single study from the same IP address were excluded from the analysis to minimize demand effects. Including these workers did not substantively alter the results presented in this dissertation.

Overall sample size was determined by a power analysis, and my data collection stopping rule for each study consisted of reaching a target sample size of one thousand three hundred and fifty respondents. The median time to complete study 1a and 1b was 18.12 and 18.92 minutes, respectively.

Studies 2a and 2b. Studies 2a and 2b were administered in the same way as studies 1a and 1b, respectively, with five exceptions. First, participants were contacted over e-mail advertising lottery payment for participating in a web-based sociology experiment (i.e., a chance to win one of six $50 bills). Second, eligibility was restricted to University of Washington undergraduate students with legal adult status. Third, two vignette-level dependent variables (gratitude and admiration) preceded the trust dependent variable. Fourth, both study 2a and study 2b were administered to University of Washington undergraduate students on October 29th of 2013. Both studies were completed on January 4th of 2014. Sampled students received no more than eight e-mail invitations to participate in the study over the course of this period. Fifth, overall sample size was determined by a power analysis, and my data collection stopping rule consisted of one full academic quarter of recruitment with at least ten recruitment e-mails sent in total.

Ten thousand undergraduate students at the University of Washington were contacted. All students were randomly selected from a publicly available student directory. Of these ten thousand students, five thousand were randomly selected for each experiment. Eight hundred and eighty-four undergraduate students at the University of Washington (Seattle) completed study 2a (334 males, 527 females, 5 other gender, 18 PNS/missing; median age = 20), while eight hundred and forty-one undergraduate students completed study 2b (298 males, 519 females, 4 other gender, 20 PNS/missing; median age = 20). With respect to response rates, thirteen students did not meet study 2a's eligibility requirements (e.g., reported not being legal adults), which produced a 17.7% response rate (e.g., 884 completed/4,987 eligible); while sixteen students did not meet study 2b's eligibility requirements, which produced a 16.9% response rate (e.g., 841 completed/4,984 eligible). The median time to complete studies 2a and 2b was 20.26 and 20.24 minutes, respectively.

APPENDIX C: CAR REPAIR AND GROUP PROJECT VIGNETTE EXPERIMENTS AND CONVENTIONAL SURVEY ITEMS

Vignette Experiment for ‘Car Repair’ Scenario

Screen 1: Consent Form

Screen 2: Cover Sheet and Instructions

Imagine the following scenario:

You just started a new job that requires you to commute every day to work. A couple of days before the job starts you decide to take your car in to an automotive repair shop called The Autoshop for an oil change. In the middle of the oil change, the auto mechanic tells you about a major issue with your car’s engine that will cost about $1,000 to repair, including parts and labor. You would like your car to be in working order, but you want to spend your money wisely since the amount of money required to restore the car’s engine is large compared to your budget.

Additionally, you have some concern: the auto mechanic might suggest fraudulent (or intentionally deceptive) services that are unnecessary and quite costly to you but beneficial to the auto mechanic. You're also concerned since the auto mechanic might provide low quality services at an exaggerated price that would require additional and costly repairs in the future. Plus, you know people who’ve paid for needless repairs and have had recurrent car problems because of poor quality auto-mechanic services.

Your task:

You will be shown 10 different hypothetical situations. In each situation an auto mechanic from The Autoshop will be servicing your car. While each situation will have the same basic structure and organization, details about the situation and the auto mechanic will differ. [**MTurk workers only**: “Imagine yourself at The Autoshop in each situation and then decide whether you trust the auto mechanic to provide quality and legitimate repairs and whether the auto mechanic, the situation, or both contributed to this decision”] [**UW students only**: “Imagine yourself at The Autoshop in each situation and then decide how you feel towards the auto mechanic and whether you trust the auto mechanic to provide quality and legitimate repairs”]. Please answer the questions that follow each situation as best as you can. <u>Remember: the scenario described above is the same for all 10 situations</u>.

To advance, click "Next" below.

Screens 3 and 4: Screener Questions for ‘Car Repair’ Scenario

To ensure the quality of responses, we would like to ask you some questions about the scenario.

<u>True or False</u>: The scenario is about paying an auto mechanic a large sum of money to repair

your car's engine.

- True
- False

True or False: The auto mechanic could charge you for fraudulent and intentionally deceptive services or for low quality services at an exaggerated price.

- True
- False

Screens 5 through 15: Vignettes (example vignette with measures below)

* The auto mechanic is a 20 year old, white female.
* As far as you know, none of your friends have used the auto mechanic's services before.
* The auto mechanic has never serviced your car before, but, as best you can tell, is a hard-working machinist.
* The auto mechanic verbally promises you that the repairs and new engine parts will last for at least 50,000 miles.
* An automotive agency does not regulate services at The Autoshop.
* The auto mechanic sold you a used computer before but you were dissatisfied with the computer.

Given the conditions above, to what extent do you trust the auto mechanic to provide justifiable and quality auto repairs?

Complete distrust					**Neither trust nor distrust**					**Complete trust**	
0	10	20	30	40	50	60	70	80	90	100	**Don't know**
o	o	o	o	o	o	o	o	o	o	o	o

Was the value you provided above primarily influenced by characteristics of the situation, primarily influenced by characteristics of the mechanic, or influenced by characteristics of both (if you think both contributed equally, mark 50 on the scale)?

Characteristics of the situation					**Characteristics of both**					**Characteristics of the mechanic**	
0	10	20	30	40	50	60	70	80	90	100	**Don't know**
o	o	o	o	o	o	o	o	o	o	o	o

<u>**Vignette Experiment for 'Group Project' Scenario**</u>

Screen 1: Consent Form

Screen 2: Cover Sheet and Instructions

Imagine the following scenario:

You are a college student who is enrolled in a course that requires a group project assignment. Each group project involves two separate tasks, one student to analyze data and one student to write a technical report of the results. For your specific group, you were assigned the task of writing a technical report of the results, while your partner was assigned the task of analyzing the data.

But you have some concern: students receive the same grade regardless of their contribution to the group project. You're also concerned since the group project is difficult to complete alone and your partner's contribution to the group project is unknown and uncertain. In other words, if your partner doesn't complete the data analysis for the group project, you might not finish in time and fail the assignment as you'll have to analyze the data without help and write a technical report of the results alone. But if you manage to analyze the data and write a technical report of the results, your partner will receive the same grade as you without having contributed to the group project. Unfortunately, you know people who have failed group projects in the past because other group members did not complete their assigned tasks.

Your task:

You will be shown 10 different hypothetical situations. In each situation you will be collaborating with another student on a group project. While each situation will have the same basic structure and organization, details about the situation and the student will differ. [**MTurk workers only**: "Imagine yourself as a member of the group project in each situation and then decide whether you trust the student to contribute to the group project and whether the student, the situation, or both contributed to this decision"] [**UW students only**: "Imagine yourself as a member of the group project in each situation and then decide how you feel towards the student and whether you trust the student to contribute to the group project."]. Please answer the questions that follow each situation as best as you can. <u>Remember: the scenario described above is the same for all 10 situations</u>.

To advance, click "Next" below.

Screens 3 and 4: Screener Questions for 'Group Project' Scenario

To ensure the quality of responses, we would like to ask you some questions about the scenario.

<u>True or False</u>: True or False: The scenario is about a group project that involves two student roles, one student to analyze data (your partner) and one student to write a technical report of the results (you).

- True
- False

<u>True or False</u>: If your partner doesn't contribute to the group project and you do, you'll spend extra time and effort on a project that you might fail.

- True
- False

Screens 5 through 15: Vignettes (example vignette with measures below)

* The student is a 60 year old, Hispanic male.
* As far as you know, none of your friends have worked on a group project with the student before.
* The student has worked on group projects with you before and always completes the assigned data analysis task, and, as best you can tell, is a competent data analyst.
* The student signs an academic honor pledge outlining how the student will be subject to costly academic penalties if the data analysis for the group project is not completed on time.
* The college regulates contributions to group projects by revoking financial aid and academic scholarships from students who don't turn in their assigned tasks. And, as far as you know, the student receives financial aid.
* The student sold you a used computer before but you were dissatisfied with the computer.

Given the conditions above, to what extent do you feel gratitude towards the student?

Complete ingratitude					**Neutral**					**Complete gratitude**	**Don't know**
0	10	20	30	40	50	60	70	80	90	100	
O	O	O	O	O	O	O	O	O	O	O	O

Given the conditions above, to what extent do you feel admiration towards the student?

Complete disdain					**Neutral**					**Complete admiration**	**Don't know**
0	10	20	30	40	50	60	70	80	90	100	
O	O	O	O	O	O	O	O	O	O	O	O

Given the conditions above, to what extent do you trust the student to complete the assigned data analysis task?

Complete distrust					**Neither trust nor distrust**					**Complete trust**	**Don't know**
0	10	20	30	40	50	60	70	80	90	100	
O	O	O	O	O	O	O	O	O	O	O	O

Conventional Survey Items for the 'Car Repair' and 'Group Project' Scenarios

Screen 16: Reflection Questions, Part I

Please tell us how attentive you were in reading and providing answers to the 10 hypothetical situations?

- Not attentive
- Somewhat attentive
- Attentive
- Very attentive
- Extremely attentive
- Don't know
- Prefer not to say

Now we would like to ask you some questions about the 10 hypothetical situations and your prior experiences with auto mechanics and car repairs.

Do you agree with the following statement: The choices I had to make during the experiment were similar to decisions I have made in real life.

- Yes
- No
- Don't know
- Prefer not to say

Do you agree with the following statement: The situations described in the experiment were similar to those I have experienced before.

- Yes
- No
- Don't know
- Prefer not to say

Do you agree with the following statement: The situations described in the experiment are likely to happen in the real world.

- Yes
- No
- Don't know
- Prefer not to say

Screen 17: Reflection Questions, Part 2

<u>For the 'Car Repair' scenario only</u>

To what degree do you agree with the following statement?

	Strongly disagree 0	1	2	3	4	**Neutral** 5	6	7	8	9	**Strongly agree** 10	**Don't know**
I can judge the quality of car repairs if I can take a close look at them.	O	O	O	O	O	O	O	O	O	O	O	O

Have you paid an auto mechanic to service or repair a car before?

- Yes
- No
- Don't know

If yes: Were you ever dissatisfied with the experience?

- Yes, I have been dissatisfied.
- No, I have always been satisfied.
- No opinion
- Prefer not to say

<u>For the 'Group Project' scenario only</u>

To what degree do you agree with the following statement?

	Strongly disagree 0	1	2	3	4	**Neutral** 5	6	7	8	9	**Strongly agree** 10	**Don't know**
I can judge the character of a person if I can spend some time with them.	O	O	O	O	O	O	O	O	O	O	O	O

Have you participated in a class-related group project before?

- Yes
- No
- Don't know

If yes: Were you ever dissatisfied with the experience?

- Yes, I have been dissatisfied.
- No, I have always been satisfied.
- No opinion
- Prefer not to say

Have you participated in a work-related group project before?

- Yes
- No
- Don't know

If yes: Were you ever dissatisfied with the experience?

- Yes, I have been dissatisfied.
- No, I have always been satisfied.
- No opinion
- Prefer not to say

Screen 18: Basic Demographic Questions, Part I

Now we would like to ask you some questions about yourself, such as your age, gender, marital status, and income.

Please remember that all of the information you provide to us will be stored on a secure database and any information that could identify you will not be shared with others outside the research team.

Please scroll down to view all questions.

For MTurk ONLY: Please enter your MTurk Worker ID below:

How old are you? (In years)

If you don't know of prefer not to say your age, choose one of the following:
- Don't know
- Prefer not to say

What is your gender?
- Male
- Female
- Other
- Prefer not to say

What is your current marital status?
- Never married
- Married
- Separated because of marital problems
- Divorced
- Widowed
- Prefer not to say

Have you ever lived with a partner when you were not married?

- Yes, I am currently living with a partner
- Yes, I have lived with a partner in the past
- No
- Prefer not to say

With what religious group, if any, do you most closely identify?

- Adventist
- African Methodist
- Anabaptist
- Asian Folk Religion
- Assemblies of God
- Baha'i
- Baptist
- Bible Church
- Brethren
- Buddhist
- Catholic/Roman Catholic
- Christian & Missionary Alliance
- Christian Reformed
- Christian Science
- Church of Christ
- Church of God
- Church of the Nazarene
- Congregational
- Disciples of Christ
- Episcopal/Anglican
- Hindu
- Holiness
- Jehovah's Witnesses
- Jewish
- Latter-day Saints
- Lutheran
- Mennonite
- Methodist
- Muslim
- Orthodox (Eastern, Russian, Greek)
- Pentecostal
- Presbyterian
- Quaker/Friends
- Reformed Church of America/Dutch Reformed
- Salvation Army
- Seventh-day Adventist
- Sikh
- Unitarian Universalist

- United Church of Christ
- Christian, non-denominational
- No religion
- I do not identify with a particular religious group
- I do not know if I identify with a religious group
- Other:_________________________________

How often do you attend religious services?
- More than once a week
- Once a week
- Once or twice a month
- A few times a year
- Never
- Don’t know
- Prefer not to say

Would you describe yourself as an evangelical Christian?
- Yes
- No
- Don’t know
- Prefer not to say

Screen 19: Basic Demographic Questions, Part II

Are you of Hispanic, Latino, or Spanish origin? Check all that apply.
- No
- Yes, Mexican, Mexican American, Chicano
- Yes, Puerto Rican
- Yes, Cuban
- Yes, Dominican
- Yes, Central American
- Yes, South American
- Yes, another Hispanic, Latino, or Spanish origin
- Don’t know
- Prefer not to say

Please indicate what race(s) you consider yourself to be. Check all that apply.
- White
- Black or Afro-Caribbean or African American
- Central or South American Indian
- American Indian or Native American
- Alaska Native or Inuit
- Native Hawaiian
- Guamanian or Chamorro

- Samoan
- Other Pacific Islander
- Asian Indian
- Chinese
- Filipino
- Japanese
- Korean
- Vietnamese
- Other Asian
- Other race
- Don't know
- Prefer not to say

What is the highest grade of schooling that you have completed? (Choose one)

- None
- 1st grade
- 2nd grade
- 3rd grade
- 4th grade
- 5th grade
- 6th grade
- 7th grade
- 8th grade
- 9th grade
- 10th grade
- 11th grade
- 12th grade
- In post secondary or vocational training
- In 2 year college
- In 4 year college
- In graduate/professional school
- Don't know
- Prefer not to say

What is the highest degree that you have received? (Choose one)

- None
- GED or alternative credential
- High school diploma (regular 12 year program)
- Associate/Junior college degree (AA, AS)
- Bachelor’s degree (BA, BS)
- Master’s degree (MA, MS, MEng, MBA, MPH, MEd, MSW, MPA, etc.)
- Professional Degree (DDS, LLB, JD, MD, OD, DVM, or other Advanced Professional Degree

- Doctorate (PhD, EdD)
- Don't know
- Prefer not to say

For UW students ONLY: As of today, are you enrolled in college or university courses?
- Yes
- No
- Prefer not to say

For UW students ONLY: In what general area does your first major or intended major field of study fall?
- Arts & Humanities
- Engineering & Information Sciences
- Natural & Health Sciences
- Professional Studies
- Social Sciences
- Don't know
- Prefer not to say

Hint: If you have not yet declared a major, please give your best estimate of what you might choose for your major. Please select a general area from this menu, then select a specific major in the next question.

For UW students ONLY: If Arts & Humanities: Specifically, what is your major or intended major in Arts & Humanities?
- Arts (Visual)
- Classics
- English
- Foreign Language
- Graphic Design / Digital Arts
- History
- Music
- Performing Arts
- Philosophy
- Other

For UW students ONLY: If Engineering & Information Sciences: Specifically, what is your major or intended major in Engineering & Information Sciences?
- Computer Science
- Engineering
- Information Science & Technology
- Other

For UW students ONLY: If Natural & Health Sciences: Specifically, what is your major or intended major in Natural & Health Sciences?
- Environmental Studies
- Statistics
- Nursing
- Physics

- Chemistry
- Other
- Mathematics
- Biology
- Public Health

For UW students ONLY: If Professional Studies: Specifically, what is your major or intended major in Professional Studies?

- Accounting
- Architecture
- Business
- Education
- Landscape Architecture
- Library Science
- Regional Planning
- Social Work
- Urban Design
- Other

For UW students ONLY: If Professional Studies: Specifically, what is your major or intended major in Social Sciences?

- Anthropology
- Communication
- Criminal Justice / Socio-Legal Studies
- Economics
- Ethnic Studies
- International Studies
- Political Science / Government
- Psychology
- Sociology
- Women's Studies / Gender Studies
- Other

For UW students ONLY: What is your current class standing?

- Freshman
- Sophomore
- Junior
- Senior
- Prefer not to say

Screen 20: Basic Demographic Questions, Part III

For MTurk ONLY: In what U.S. state or territory do you currently reside? (Choose one)
[Dropdown List with all U.S. states and territories with a "prefer not to say" option at the bottom]

Are you the head of your household?

- Yes
- No
- Don't know
- Prefer not to say

Including yourself, how many people currently live in your household at least 50% of the time?

If you don't know or prefer not to say how many people currently live in your household at least 50% of the time, choose one of the following:
- Don't know
- Prefer not to say

Now we would like to ask you some questions about your income and employment status.

Please remember that all of the information you provide to us will be stored on a secure database and any information that could identify you will not be shared with others outside the research team.

What is your best estimate of your household income last year? Consider income from all sources before taxes. (Choose one)
- Less than $5,000
- $5,000 to $7,499
- $7,500 to $9,999
- $10,000 to $12,499
- $12,500 to $14,999
- $15,000 to $19,999
- $20,000 to $24,999
- $25,000 to $29,999
- $30,000 to $34,999
- $35,000 to $39,999
- $40,000 to $49,999
- $50,000 to $59,999
- $60,000 to $74,999
- $75,000 to $84,999
- $85,000 to $99,999
- $100,000 to $124,999
- $125,000 to $149,999
- $150,000 to $174,999
- $175,000 or more
- Don’t know
- Prefer not to say

What is your current employment status? (Choose one)

- Working – as a paid employee
- Working – self-employed
- Not working – on temporary layoff from a job
- Not working – looking for work
- Not working – retired
- Not working – disabled
- Not working – other
- Prefer not to say

About how many hours do you work in an average week?

If you don't know or prefer not to say how many hours you work in an average week, choose one of the following:

- Don't know
- Prefer not to say

Screen 20: Political Background Questions

Now we would like to ask you some questions about your political attitudes and opinions. Generally speaking, do you usually think of yourself as politically liberal, conservative, moderate, or something else?

- Extremely liberal
- Liberal
- Slightly liberal
- Middle of the road
- Slightly conservative
- Conservative
- Extremely conservative
- Other political views
- Don't know
- Prefer not to say

Generally speaking, do you usually think of yourself as a Democrat, Republican, Independent, or something else?

- Strong Democrat
- Moderate Democrat
- Leaning Democrat
- Undecided or Independent
- Leaning Republican
- Moderate Republican
- Strong Republican
- Other political party
- Don't know

- Prefer not to say

Are you a citizen of the United States?
- Yes
- No
- Prefer not to say

If yes: Were you born a United States citizen or are you a naturalized U.S. citizen?
- Born a U.S. citizen
- Naturalized U.S. citizen
- Prefer not to say

Screen 21: Opinions about Others, Part I

Now we would like to ask you some questions about your opinions regarding friends, family, and other groups of people.

Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?
- Most people can be trusted
- Need to be very careful
- Don't know

We'd like to ask you how much you trust people from various groups. Could you tell us for each whether you trust people from this group completely, distrust people from this group completely, or neither trust nor distrust people from this group?

	Complete distrust 0	10	20	30	40	**Neither trust nor distrust** 50	60	70	80	90	**Complete trust** 100	**Don't know**
Your family	O	O	O	O	O	O	O	O	O	O	O	O
Your friends	O	O	O	O	O	O	O	O	O	O	O	O
Your neighbors	O	O	O	O	O	O	O	O	O	O	O	O
People you know personally	O	O	O	O	O	O	O	O	O	O	O	O
People you meet for the first time	O	O	O	O	O	O	O	O	O	O	O	O
Strangers	O	O	O	O	O	O	O	O	O	O	O	O
People of another religion	O	O	O	O	O	O	O	O	O	O	O	O
People of another nationality	O	O	O	O	O	O	O	O	O	O	O	O

Screen 21: Opinions about Others, Part I

Now we'd like to ask you how much you trust certain organizations and institutions. Could you tell us for each whether you trust these organizations and institutions completely, distrust these organizations and institutions completely, or neither trust nor distrust these organizations and institutions?

	Complete distrust 0	10	20	30	40	**Neither trust nor distrust** 50	60	70	80	90	**Complete trust** 100	**Don't know**
Congress and the Senate	O	O	O	O	O	O	O	O	O	O	O	O
Public authorities	O	O	O	O	O	O	O	O	O	O	O	O
Courts	O	O	O	O	O	O	O	O	O	O	O	O
Large companies	O	O	O	O	O	O	O	O	O	O	O	O
Churches	O	O	O	O	O	O	O	O	O	O	O	O
Schools and the educational system	O	O	O	O	O	O	O	O	O	O	O	O
Press	O	O	O	O	O	O	O	O	O	O	O	O
The media	O	O	O	O	O	O	O	O	O	O	O	O
Labor unions	O	O	O	O	O	O	O	O	O	O	O	O
Police	O	O	O	O	O	O	O	O	O	O	O	O

Screen 22: Prior Behaviors

Now we'd like to ask you some questions about prior behaviors. Could you tell us whether you do the following very often, often, sometimes, infrequently, or never?

How often do you lend personal possessions to your friends (tools, books, your car or bicycle, etc.)?

- Never
- Infrequently
- Sometimes
- Often
- Very often
- Prefer not to say

How often do you lend money to your friends?

- Never
- Infrequently
- Sometimes
- Often
- Very often
- Prefer not to say

How often do you leave your door unlocked?

- Never
- Infrequently
- Sometimes
- Often
- Very often
- Prefer not to say

How often do you volunteer for local clubs or social services?

- Never
- Seldom
- At least once a month
- At least once a week
- Daily
- Prefer not to say

Please identify the average number of hours you spend volunteering per week.

If you don't know or prefer not to say the average number of hours you spend volunteering per week, choose one of the following:

- Don't know
- Prefer not to say

Screen 23: Beliefs and Expectations

To what degree do you agree with the following statements?

	Strongly disagree 0	1	2	3	4	**Neutral** 5	6	7	8	9	**Strongly agree** 10	**Don't know**
Overall, I expect strangers to be more trustworthy than untrustworthy.	O	O	O	O	O	O	O	O	O	O	O	O
I am optimistic about the trustworthiness of strangers.	O	O	O	O	O	O	O	O	O	O	O	O
If someone offends me, I will also offend him or her.	O	O	O	O	O	O	O	O	O	O	O	O
I am trustworthy.	O	O	O	O	O	O	O	O	O	O	O	O
Wages and incomes should be made more equal.	O	O	O	O	O	O	O	O	O	O	O	O
Overall, I expect more good things to happen to me than bad.	O	O	O	O	O	O	O	O	O	O	O	O

Are you, generally speaking, a person who avoids taking risks, or a person who is fully prepared to take risks?

Avoid taking risks										Fully prepared to take risks	Don't know
0	1	2	3	4	5	6	7	8	9	10	
O	O	O	O	O	O	O	O	O	O	O	O

Screen 23: Beliefs and Expectations

Decision making does not take place in a vacuum: individual desires and beliefs, along with social context, greatly impact the decision process. In order to facilitate our research on decision making we are interested in knowing certain factors about you, the decision maker. Specifically, we are interested in whether you read survey directions; if not, then some of our manipulations that rely on changes in instructions were ineffective. So, in order to demonstrate that you have read the instructions, please ignore the question below. Instead, select "Other..." from the options provided and type "Instructions processed." Thank you very much.

What is your favorite color?
- Blue
- Green
- Red
- Yellow
- Don't know
- Other:_________________________

Screen 24: Background Questions, Part I

In this next task we ask you to imagine that you have been randomly paired with another person, whom we will refer to simply as the "Other." This other person is someone you do not know and that you will not knowingly meet in the future. Both you and the "Other" person will be making choices by choosing either the letter A, B, or C. Your own choices will produce points for both yourself and the "Other" person. Likewise, the other's choice will produce points for him/her and for you. Every point has value: the more points you receive, the better for you, and the more points the "Other" receives, the better for him/her.

Here's an example of how this task works:

A	B	C
You get: 500 Other gets: 100	You get: 500 Other gets: 500	You get: 550 Other gets: 300
O	O	O

In this example, if you chose A you would receive 500 points and the other would receive 100 points; if you chose B, you would receive 500 points and the other 500; and if you chose C, you would receive 550 points and the other 300. So, you see that your choice influences both the number of points you receive and the number of points the other receives.

Before you begin making choices, please keep in mind that there are no right or wrong answers—choose the option that you, for whatever reason, prefer most. Also, remember that the points have value. The more of them you accumulate, the better for you. Likewise, from the other's point of view, the more points s/he accumulates, the better for him/her.

Click "Next>>" below to begin.

Screen 25: Background Questions, Part II

For each of the nine choice situations below, choose A, B, or C, depending on which column you prefer most:

	A	**B**	**C**
Choice #1	You get: 460 Other gets: 80 O	You get: 540 Other gets: 280 O	You get: 480 Other gets: 480 O

	A	**B**	**C**
Choice #2	You get: 560 Other gets: 300 O	You get: 500 Other gets: 500 O	You get: 500 Other gets: 100 O

	A	**B**	**C**
Choice #3	You get: 520 Other gets: 520 O	You get: 520 Other gets: 120 O	You get: 580 Other gets: 320 O

	A	**B**	**C**
Choice #4	You get: 500 Other gets: 100 O	You get: 560 Other gets: 300 O	You get: 490 Other gets: 490 O

	A	**B**	**C**
Choice #5	You get: 560 Other gets: 300 O	You get: 500 Other gets: 500 O	You get: 490 Other gets: 490 O

	A	**B**	**C**
Choice #6	You get: 500 Other gets: 500 O	You get: 500 Other gets: 100 O	You get: 570 Other gets: 300 O

	A	**B**	**C**

	A	B	C
Choice #7	You get: 510 Other gets: 510 O	You get: 560 Other gets: 300 O	You get: 510 Other gets: 110 O
	A	**B**	**C**
Choice #8	You get: 550 Other gets: 300 O	You get: 500 Other gets: 100 O	You get: 500 Other gets: 500 O
	A	**B**	**C**
Choice #9	You get: 480 Other gets: 100 O	You get: 490 Other gets: 490 O	You get: 540 Other gets: 300 O

Screen 26: Background Questions, Part III

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to your personality. It's best to go with your first and immediate judgment.

	True	**False**
I'm always willing to admit when I make a mistake.	O	O
I always try to practice what I preach.	O	O
I never resent being asked to return a favor.	O	O
I have never been annoyed when people expressed ideas very different from my own.	O	O
I have never deliberately said something to hurt someone's feelings.	O	O
I like to gossip at times.	O	O
There have been occasions when I took advantage of someone.	O	O
I sometimes try to get even rather than forgive and forget.	O	O
At times I have really insisted on having things my own way.	O	O
There have been occasions when I felt like smashing things.	O	O

Vignette Dimensions for 'Car Repair' Scenario

Dimension	Level	Text
Age	0-4	20 year old (0), 30 year old (1), 40 year old (2), 50 year old (3), or 60 year old (4).
Race	0-3	white (0), black (1), Hispanic (2), or Asian (3).
Gender	0-1	male (0) or female (1).
Reputation	0	As far as you know, none of your friends have used the auto mechanic's services before.
	1	Some of your friends have used the auto mechanic's services before and they were satisfied with the work.
Halo	0	Blank (respondent shown nothing)
	1	The auto mechanic sold you a used computer before but you were dissatisfied with the computer.
	2	The auto mechanic sold you a used computer before and you were satisfied with the computer.
Perceived Motivations	0	The auto mechanic has never serviced or repaired your car before.
	1	The auto mechanic has serviced your car before but provided fraudulent and costly repairs.
	2	The auto mechanic has serviced your car before and always provides justifiable repairs.
	3	The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic is interested in your future business.
	4	The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic genuinely cares for and is concerned about your interests. You know this since the auto mechanic has repaired your car for free when you couldn't afford the cost of repairs.
	5	The auto mechanic has serviced your car before and always provides justifiable repairs because the auto mechanic genuinely cares for and is concerned about the interests of all customers. You know this since the auto mechanic has repaired your car and other customers' cars for free when customers couldn't afford the cost of repairs.
Competence	0	Blank (respondent shown nothing)
	1	[And or but], as best you can tell, is a competent machinist.
Exertion	0	Blank (respondent shown nothing)
	1	[And or but], as best you can tell, is a hard-working machinist.
Contract	0	Blank (respondent shown nothing)
	1	The auto mechanic verbally promises you that the repairs and new engine parts will last for at least 50,000 miles.
	2	The auto mechanic signs a limited warranty outlining how the auto mechanic will be subject to costly professional penalties if the repairs and new engine parts do not last 50,000 miles.
Regulations	0	An automotive agency does not regulate services at The Autoshop.
	1	An automotive agency regulates services at The Autoshop by teaching auto mechanics who provide fraudulent services to their customers about business ethics and professional integrity.
	2	An automotive agency regulates services at The Autoshop by fining auto mechanics who provide fraudulent services to their customers.

Vignette Dimensions for 'Group Project' Scenario

Dimension	Level	Text
Age	0-4	20 year old (0), 30 year old (1), 40 year old (2), 50 year old (3), or 60 year old (4).
Race	0-3	white (0), black (1), Hispanic (2), or Asian (3).
Gender	0-1	male (0) or female (1).
Reputation	0	As far as you know, none of your friends have worked on a group project with the student before.
	1	Some of your friends have worked on a group project with the student before and they were satisfied with the student's contribution.
Halo	0	Blank (respondent shown nothing)
	1	The student sold you a used computer before but you were dissatisfied with the computer.
	2	The student sold you a used computer before and you were satisfied with the computer.
Perceived Motivations	0	The student has never worked on a group project with you before.
	1	The student has worked on a group project with you before but failed to complete the assigned data analysis task.
	2	The student has worked on group projects with you before and always completes the assigned data analysis task.
	3	The student has worked on group projects with you before and always completes the assigned data analysis task because the student is interested in working with you as a partner on future group projects.
	4	The student has worked on group projects with you before and always completes the assigned data analysis task because the student genuinely cares for and is concerned about your interests. You know this since the student has completed your assigned task when you were too overwhelmed with other obligations and commitments to finish it yourself.
	5	The student has worked on group projects with you before and always completes the assigned data analysis task because the student genuinely cares for and is concerned about the interests of all group members. You know this since the student has completed your assigned task and tasks assigned to other group members when group members were too overwhelmed with other obligations and commitments to finish it themselves.
Competence	0	Blank (respondent shown nothing)
	1	[And or but], as best you can tell, is a competent data analyst.
Exertion	0	Blank (respondent shown nothing)
	1	[And or but], as best you can tell, is a hard-working data analyst.
Contract	0	Blank (respondent shown nothing)
	1	The student verbally promises you that the data analysis for the group project will be completed on time.
	2	The student signs an academic honor pledge outlining how the student will be subject to costly academic penalties if the data analysis for the group project is not completed on time.
Regulations	0	The college does not regulate contributions to group projects.
	1	The college regulates contributions to group projects by teaching students who don't turn in their assigned tasks about academic ethics and educational integrity.
	2	The college regulates contributions to group projects by revoking financial aid and academic scholarships from students who don't turn in their assigned tasks. And, as far as you know, the student receives financial aid.