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Income Inequality and Generalized Trust: a Spurious Relation Explained by Cultural Values

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Income Inequality and Generalized Trust: a Spurious Relation Explained by
Cultural Values

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Management

by

Konrad Jamro

Dissertation Committee:
Professor Jone Pearce, Chair
Professor Gerardo Okhuysen
Professor Denis Trapido

2016

DEDICATION

Dla mojej żony i naszych dzieci,

W podziękowaniu za ich miłość i nieustanne wsparcie.

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ABSTRACT OF THE DISSERTATION

Income Inequality and Generalized Trust: a Spurious Relation Explained by Cultural Values

By

Konrad Jamro

Doctor of Philosophy in Management

University of California, Irvine, 2016

Professor Jone Pearce, Chair

This dissertation found support for an alternative explanation of a country-level negative relation between income inequality and generalized trust, claimed in the literature as causal. In Study 1, it was found that the relationship between income inequality and generalized trust was confounded by cultural values. Specifically, in cross-country analyses, the cultural dimension of autonomy-embeddedness was negatively related to income inequality and positively to generalized trust, and the cultural dimension of harmony-mastery was negatively related to income inequality. Moreover, it was found that within-country changes of embeddedness were positively related to generalized trust measured four years later. In Study 2, the theoretical model proposed in the literature to explain the observed relationship between income inequality and generalized trust was not supported, which was consistent with the significant findings for the alternative model in Study 1. Implications for scholars and policy makers are discussed.

CHAPTER 1: Introduction

The topic of economic inequality has become very visible in public discourse. Indeed, huge disparities in salaries and extreme wealth concentration attract attention: the US CEO-to-worker compensation ratio equals 273-to-1, which is almost fourteen times more than in 1960s (Mishel & Sabadish, 2013); and the two richest Americans accumulate as much wealth as the poorest 120 million US citizens (Wilkinson & Pickett, 2009, p. viii). The common perceptions are that these high inequalities are undesirable for the economy, democracy and society. For instance, a *Financial Times* columnist sees economic inequality as "the new apartheid" that determines one's life before birth (Kuper, 2014). Another commentator is concerned that, after the Supreme Court's abolition of the limits for individual donations to political campaigns, high economic inequality transforms American democracy from "one person one vote" to "one dollar one vote*"* (Luce, 2014). Furthermore, in his popular book, Stiglitz (2012:125) emphasizes "By allowing inequality to metastasize unchecked, America is choosing a path of the destruction of social capital, if not social conflict" and, for the latter, gives an example of the "Occupy Wall Street" movement. Therefore, it is no surprise that, in a recent State of the Union Address, US President Obama spoke about reversing the trends in income inequality as one of the most important government priorities for 2014.

In the past two decades, increasing inequalities have captured scholars' attention, too. In multiple studies, researchers have reinforced common perceptions and have associated income inequality with several adverse consequences such as low generalized trust, slow economic growth, political instability and worse average health of a society (Alesina & Rodrik, 1994; Milanovic, 2005; Uslaner, 2002; Wilkinson, 2006). Due to the seriousness of these consequences, all of them deserve further attention, but in this dissertation research I will focus only on the

relationship between income inequality and generalized trust (see Figure 1 for illustration of the observed relationship between income inequality and generalized trust).

First, generalized trust, understood as "general willingness to trust others" (Mayer, Davis and Schoorman, 1995, p. 715), is relevant to a range of social science disciplines. Economists, management scholars, political scientists and sociologists argue that generalized trust is essential for large-scale cooperation as it reduces transaction costs such as monitoring, control, protecting assets, and litigation (Knack & Keefer, 1997). Indeed, scholars have demonstrated that generalized trust relates positively to the development of democratic societies and prosperous economies (Nannestad, 2008; Putnam, 1993; Robbins, 2012; Sztompka, 2007; Zak & Knack, 2001) as well as organizational performance (Bromiley & Cummings, 1995; Colquitt, Scott & LePine, 2007; Dirks & Ferrin, 2002). I was motivated to study the link between income inequality and generalized because several frequently cited studies interpreted that relationship as causal such that the higher income inequality, the lower generalized trust (Bjørnskov, 2006; Delhey & Newton, 2005; Gustavsson & Jordahl, 2008; Knack & Keefer, 1997; Uslaner, 2002; Zak & Knack, 2001). However, as I argue in Chapter 3, these causal claims have been based on underspecified theoretical arguments and have been supported with insufficient analyses. In particular, the aforementioned papers claim that, on the aggregate (country) level, income inequality is one of the strongest or even "by far the strongest determinant of [generalized] trust" (Uslaner, 2002, p. 236). However, I argue that this conclusion is based on the spurious relationship, and propose and test that cultural values are the missing variables that explain the relationship between income inequality and generalized trust on the aggregate level.

Moreover, existing, individual-level, theoretical underpinnings for the causal relationship between income inequality and generalized trust have never been tested, and their boundary

conditions and possible inhibiting mechanisms have not been discussed in the current literature. Therefore, in Chapter 4, I provide a more nuanced theoretical support and empirical evidence for the individual-level mechanisms proposed to explain the aggregate-level relationship between income inequality and generalized trust.

In the subsequent sections of this chapter I discuss theoretical and empirical motivations for this research. In Chapter 2, I provide theoretical background for variables of interest, i.e. income inequality (independent variable), generalized trust (outcome variable), and cultural values (missing variables that clarify the relationship between income inequality and generalized trust). In Chapter 3, I argue that the observed relationship between income inequality and generalized trust on an aggregate (country) level is spurious, and I propose and test an alternative explanation for this phenomenon (Study 1). Study 1 is an archival, cross-national, country-level analysis of the relationship between income inequality and generalized trust, which, I argue, is confounded by cultural values. I analyzed both cross-sectional data (to test some of the hypotheses on a bigger sample of countries from virtually all cultural regions) and panel data (to test causal hypotheses with longitudinal data available for European countries only). In Chapter 4, I switch from country-level to individual-level analysis, and formulate hypotheses to test two mechanisms proposed in the literature to explain relationships between income inequality and generalized trust (Study 2). Study 2 is experimental and employs individual-level, single-country analysis because the focal mechanisms have been proposed on this level, and their theoretical underpinnings are Western-centric, which does not allow for cross-cultural conclusions. In Chapter 5, I discuss the implications of both studies and provide suggestions for future studies.

Motivations for Dissertation

Before discussing motivations for this dissertation research, I will present existing

empirical evidence for the relationship between income inequality and generalized trust. I choose six studies for presentation. The first three papers by Knack and Keefer (1997), Uslaner (2002) and Zak and Knack (2001) are chosen because they are the earliest studies on the relationship between income inequality and generalized trust, and have exerted profound influence on the academic and policy-makers communities. These three papers alone have almost 12,000 citations by June 2016, as reported by Google Scholar, and their findings have been generally accepted (see, for example, a review of social capital literature, including generalized trust, by Häuberer, 2011). The other three papers by Bjørnskov (2006), Delhey and Newton (2005) and Gustavsson and Jordahl (2008) are discussed because they try to address some of the limitations of those previous studies including endogeneity, omitted variable bias and cross-sectional nature of data, however, they do carry their own problems. The most important findings and limitations of these six studies are presented in Table 1.

In this paragraph, I will briefly summarize limitations of these studies that motivated this dissertation research, and will discuss these limitations in more detail in the following paragraphs. First, in all six cases authors are generally confident about negative causal relationship from income inequality to generalized trust, although Delhey and Newton (2005) and Zak and Knack (2001) advise caution when concluding about the causality. As an illustration of this general confidence, I quote Uslaner (2002, p. 236) who wrote that "economic inequality is a powerful predictor of [generalized] trust. Yet trust has no effect on economic inequality. The direction of causality goes only one way". However, all of these six studies are prone to omitted variable bias for at least one of the following two reasons. The first is that none of the statistical models includes all significant variables used in previous analyses (Delhey & Newton, 2005; Knack & Keefer, 1997; Uslaner, 2002). Such omission is well documented as a source of biased results

(Kennedy, 2008). For example, Knack and Keefer (1997) excluded ethnic homogeneity from models where income inequality was included, even though both had significant coefficients and are expected to have differential effects on generalized trust (cf. Alesina and La Ferrara, 2002). Second, as I will argue in detail in Chapter 3, all of these studies omit a well-documented confounding variable, i.e. culture. On top of these problems, theoretical mechanisms, which I will discuss in Chapter 4, and which have been proposed in the literature to explain the observed country-level relationship between income inequality and generalized trust, operate at the individual level, however, to my best knowledge, they have never been tested explicitly at that level.

In this dissertation research I aim to address the aforementioned limitations. First and foremost, I argue that the observed negative relationship between income inequality and generalized trust at the aggregate level is explained by a set of omitted variables, i.e. cultural values. I will define cultural values in Chapter 2 and, in Chapter 3, I will provide detailed arguments for why cultural values positively influence income inequality and negatively affect the average levels of generalized trust in societies around the world. Here I will only signal my motivation to include cultural values as a third, clarifying, variable, which comes from suggestions and evidence in the literature that generalized trust and income inequality are shaped by culture.

Scholars seem to agree that cultures emphasize certain rules or value systems that shape generalized trust (Doney, Cannon, & Mullen, 1998; Johnson & Cullen, 2002; Kramer, 1999). For example, Kramer (1999) argues that both formal and informal cultural rules shape common understandings and expectations regarding appropriate behavior and, thus, may facilitate or impede the development of generalized trust. Similarly, Johnson and Cullen (2002) and Doney et

al. (1998) propose that cultural values establish standards for acceptable behaviors and beliefs, which, in turn, facilitate or inhibit the development of generalized trust.

In addition, several scholars have suggested that income inequality is an outcome of cultural norms and values. For example, Schwartz (2007b) argues that cultural values shape income inequality indirectly through a preferred economic system, i.e. cultures that emphasize competition encourage unequal allocation of resources as a legitimate way to motivate and coordinate activities of people. Similarly, Stiglitz (2012) argues that cultural norms influence government policies that deal with inequalities, and the general acceptance of large income disparities in a society. Finally, Oyserman and Uskul (2008) propose a model of culture as a societal-level process directly and indirectly influencing societal-level outcomes such as income inequality.

As I will further discuss in Chapter 3, there are empirical studies that demonstrate the influence of culture on generalized trust (e.g. Gheorghiu et al., 2009; Schwartz, 2011; Uslaner, 2002; Yamagishi & Yamagishi, 1994), and other papers that argue for the relationship between cultural values and income inequality (e.g. Oyserman & Uskul, 2008; Stiglitz, 2012; Schwartz, 2007b). However, to my knowledge, there is no study that analyzes income inequality, generalized trust and cultural values together in one study to demonstrate whether or not cultural values clarify the relationship between the other two variables.

I will also discuss and enrich the existing theoretical underpinnings of the causal relationship between income inequality and generalized trust. Although these theoretical mechanisms have been proposed to operate on an individual level, they have not been tested on that level. In this dissertation, I will test these mechanisms and, in addition, discuss system justification theory, a theory rooted in the social psychology literature that should provide more

nuanced view of these existing mechanisms. I will provide detailed argumentation in Chapter 4, and here I will only introduce these topics. Scholars proposed several theoretical mechanisms explaining the observed negative influence of income inequality on generalized trust including social similarity and inference on social relations (Jordahl, 2007). The first causal mechanism, social similarity, means that people tend to trust those who are similar to themselves, such as those who have similar income or wealth (Knack & Keefer, 1997; Zak & Knack, 2001). For example, Uslaner (2002, p. 181) writes that "the rich and the poor have little reason to believe that they share common values, and thus they might well be vary of others' motives" and that they may lose "sense of common purpose and identity". The second mechanism, inference on social relations, means that people perceive income inequality as a sign of exploitation and others' unfairness and, therefore, withhold trust towards other people in general (Jordahl, 2007; Rothstein & Uslaner, 2005). However, these scholars do not clearly demonstrate (1) why income inequality leads to identity based on wealth or income, i.e. the poor versus the rich; and (2) why income inequality is perceived as unfair. I will address these questions by drawing on social categorization and justice literature.

In regard to system justification (Jost, Banaji & Nosek, 2004; Jost et al., 2010), a mechanism rooted in social psychology literature, I provide more details in Chapter 4, and argue that adding this mechanism to the existing theories of the causal relationship between income inequality and generalized trust can help us better understand this phenomenon. Explaining here briefly, system justification is a "process by which existing social arrangements are legitimized, even at the expense of personal and group interest" (Jost, Banaji & Nosek, 2004, p. 883). System justification implies that people will use stereotypes and other cognitive strategies to justify existing arrangements, including income inequality (Jost, Pelham, Sheldon & Ni Sullivan, 2003).

Indeed, in a series of experiments, Trump (2013) demonstrated that when system justification motivations are made salient, people tend to accept higher inequality. There is also evidence from field studies, which supports Trump's (2013) experimental findings. For example, Kelley and Zagorski (2004) as well as Osberg and Smeeding (2006) have found that people's preferences for acceptable ("legitimate" or "fair") inequality depend on their perceptions of actual inequality. In other words, people from different countries do not agree on the absolute level of acceptable or fair income inequality but rather adjust it to the actual proportions in their own societies. Moreover, citizens from different countries have similar notions about what constitutes the legitimate level of income inequality, i.e. they tend to accept income distribution that is on average about 25% lower than the actual one (see Figure 2). More specifically, in the study of Osberg and Smeeding (2006), the ratio of acceptable to actual inequality varies from .61 in Russia to .97 in the Philippines, with majority of countries clustered around .75. These numbers mean that people in most countries would accept income inequality if it was about 25% lower than the actual one.

In sum, this section has outlined several problems with the existing explanations of the relationship between income inequality and generalized trust, which I will address in this dissertation. First, I argue that the observed relationships on the aggregate level are confounded by cultural values, which influence both inequality and trust (Study 1). Second, I will provide a more nuanced view of theoretical mechanisms used to explain inequality-trust relationship, and I will test them in Study 2 (Chapter 4).

CHAPTER 2: Theory of Income Inequality, Generalized Trust and Cultural Values

In this chapter I will review three constructs central to this dissertation research: income inequality, generalized trust and cultural values. First, I will focus on what current literature views as one of the strongest antecedents of generalized trust, i.e. income inequality, and briefly explain the classic model of Kuznets (1955), and one of its recent critical reviews (Stiglitz, 2012). Then, I will describe the outcome variable, i.e. generalized trust, and explain how generalized trust fits into the broader nomological network of trust, its nature and why it is an interesting variable for various disciplines of social sciences. Finally, I will discuss the missing variable in the observed relationship between income inequality and generalized trust, i.e. cultural values, and explain the meaning of cultural values, their relation to culture and implications for societies and work settings.

Income Inequality

Income inequality is a term used primarily by economists and sociologists to describe the distribution of people's incomes (Kuznets, 1955), its "evolution over time, the way it interacts with other economic and noneconomic phenomena, and the way it is affected by policy." (Atkinson & Bourguignon, 2000, p. 4). There are multiple theories explaining the existence and dynamics of income inequality and they usually take into account one or more of the following elements: productive factors such as capital and labor, their different kinds, their distribution within populations, and their returns; how the returns are accumulated; and market regulations (cf. Atkinson & Bourguignon, 2000). For example, in his classic model, Kuznets (1955) proposed an inverted U-shape model for income inequality that grows with a developing economy but declines in the long run, as economies become highly developed. Kuznets (1955)

discussed two mechanisms responsible for inequality growth (i.e. concentration of savings only in the upper-income groups; and higher income disparities in urban populations) and a couple of counterbalancing forces. These counterbalancing forces include opportunities for entrepreneurs in dynamic economies where technological changes make previously accumulated wealth less productive over time; and growing importance of income from service rather than from property requires individual excellence, which is not necessarily guaranteed for descendants of a currently high paid individual. Kuznets' model is one of the most popular models in the literature but empirical results are far from conclusive (Deininger & Squire, 1996; Kanbur, 2000; Milanovic, 2005).

Stiglitz (2012) proposed more nuanced explanations of income inequality. Stiglitz (2012) argued that high income inequality in the US did not just happen as a result of economic development and demographic processes alone but was reinforced by social forces (as I will argue in details in Chapter 3), and political actions such as laws and regulations which facilitate rent seeking, i.e. a situation where the rich get richer "at the expense of the rest of us" (Stiglitz, 2012, p. 39). He even challenged the economic theory of marginal productivity, which is often used to justify income inequality (cf. Ryscavage, 2009). Marginal productivity theory implies that those who made greater contributions to the society should get more income. This argument is frequently used to justify high executive compensation because, as it is argued, they are primarily responsible for corporations' profit and growth. However, Stiglitz (2012, p. 78) argues that "one can't really separate any individual's contributions from those of others. Even in the context of technological change, most inventions entail the synthesis of preexisting elements rather than innovations de novo." As an example, he gives the case of Mark Zuckerberg, Facebook cofounder and CEO, who made his fortune on the shoulders of Tim Berners-Lee, an

inventor of the World Wide Web, who "could have become a billionaire but chose not to – he made his idea freely available, which greatly speeded up the development of the Internet" (Stiglitz, 2012, p. 41). As another illustration of why marginal productivity alone cannot justify current income inequality in the US, we may look at the changes in the relationship between the annual real GDP per capita growth and the CEO-to-employee salary ratio in the US. More specifically, the average GDP growth in 1960s was about 2.5% (Gordon, 2012) and the CEO-to-employee salary ratio was about 20:1 (Mishel & Sabadish, 2013). However, the most recent average GDP growth was close to 1.2% but CEO-to-employee salary ratio jumped to 270:1. This disconnected dynamic between GDP growth and CEO-to-employee salary ratio is a clear sign that marginal productivity alone cannot justify current income inequality in the US.

Regardless of these different theories there are issues related to measurement of income inequality. The fundamental question here is: "What is being distributed amongst whom?" (Cowell, 2000, p. 93). Scholars have proposed multitude, often incompatible, answers to that question (Cowell, 2000; Deininger & Squire, 1996; Milanovic, 2005). First, scholars have considered the following kinds of income: monetary, non-monetary (e.g. subsidized housing, public health insurance), wage-based, non-wage-based (such as self-employment and property rents), where monetary wage-based income is most commonly used (Deininger & Squire, 1996). However, not including other types of income may artificially increase income inequalities, for example in countries with strong social programs such as subsidized housing (a case of Greece in 1970s described in Deininger & Squire, 1996). In addition, there is a question whether inequalities should be calculated based on income or expenditure. It is argued that using income rather than expenditures produces higher measured income inequality (Deininger & Squire, 1996). Therefore, it is important to use consistent data in cross-cultural studies, i.e. all countries

in a study should have income inequality calculated based on the same underlying category.

In regard to measures of inequality, the most common one is the Gini index, introduced by an Italian scholar, Corrado Gini. The Gini index is a dimensionless measure represented as a fraction or percentage, and ranges from 0 (a state of perfect equality, e.g. everybody receives the same income) to 1 (perfect inequality, e.g. one person receives all the income and others have nothing) (Ceriani & Verme, 2012). In mathematical terms, Gini coefficient represents "a weighted sum of all the incomes in the population where the weights depend on the rank of the income-receiving unit in the distribution" (Cowell, 2000, p. 112), and is sensitive to the middle of income distributions (Jordahl, 2007). As a single number, Gini coefficient has some limitations that social scientists should worry about. In particular, Gini index cannot capture the exact differences in the underlying income distribution. For example, redistributions from the top to the middle can represent the same change in Gini index as redistributions from the middle to the poor (Deininger & Squire, 1996). As a solution, scholars proposed complementary measures such as income shares and income ratios by quintiles or deciles, because these measures provide additional information about the underlying distribution of income (Deininger & Squire, 1996; Gustavsson & Jordahl, 2008). Indeed, in their study of Swedish society, Gustavsson and Jordahl (2008) have found no significant relationships between (1) the Gini index and generalized trust, and between (2) the ratio of 90th to 50th income percentile, but they reported significant negative relationship between the ratio of 50th to 10th income percentile and generalized trust. These results demonstrate that the Gini index, as an aggregate measure, can hide the nuanced relations between different parts of income distribution and variables of interest.

To conclude, in this paper I will focus on one particular source of income inequality, i.e. culture, and will argue in Chapter 3 that culture is an important factor influencing income

inequality directly (through cultural norms and beliefs) and indirectly (e.g. through economic system and other societal institutions).

Generalized Trust

In the beginning of this section I will briefly explain how generalized trust fits into the nomological network of trust. Next, I will focus on the definition and nature of generalized trust. Finally, I will summarize briefly theoretically suggested and empirically tested consequences of generalized trust in various contexts.

The great number of independent studies across and within disciplines has inevitably led to multiple and, often, incompatible definitions and conceptualizations of the trust construct (Bigley & Pearce, 1998; Nannestad, 2008). Among others, trust has been defined as psychological state (Kramer, 1999), moral commandment (Uslaner, 2002), rational belief and expectation (Hardin, 2002; Yamagishi & Yamagishi, 1994), and multidimensional construct consisting of rational expectations, psychological predispositions or cultural norms (Jones, 1996; Sztompka, 2007). Regardless of these different conceptualizations, most scholars agree that the basic nomological network of trust on the individual level consists of the following elements: trustworthiness (i.e. perceived characteristics of the trustee), generalized trust (trustor's general disposition to trust unfamiliar others), trust itself (trustor's willingness to be vulnerable to trustee) and risk taking (behavioral manifestation of trust) (Mayer et al., 1995; Colquitt et al., 2007). The basic components of the trust model proposed by Mayer et al. (1995) are depicted on Figure 3.

This dissertation is focused on *generalized trust*. Knowing how generalized trust fits in the broader nomological network of trust, I will briefly discuss contexts where generalized trust is important. Since generalized trust refers to abstract others, not specific people or groups, it

seems to be the most salient in the relationships with unfamiliar others when the information about others' trustworthiness is not yet available (Bigley & Pearce, 1999) and, as such, it has been proposed as an essential element of prosperous and democratic societies (Gambetta, 1988; Paxton, 2007; Putnam, 1993; Sønderskov, 2011; Uslaner, 2002). However, generalized trust has been also found important in established relationships with familiar others as it works as a "filter that alters interpretations of others' actions" (Colquitt et al. 2007, p. 911). In the context of organizations and relationships with familiar others such as manager-subordinate relationships, studies show that generalized trust is related positively to subordinates' task and contextual performance, job satisfaction, organizational commitment, and negatively with their counterproductive behaviors and intentions to quit (Colquitt et al., 2007; Van Dyne, Vandewalle, Kostova, Latham & Cummings, 2000; Yakovleva, Reilly, & Werko, 2010).

Over the past few decades, scholars have also referred to generalized trust as *social trust* (Delhey & Newton, 2005), *general trust* (Yamagishi & Yamagishi, 1994), and *propensity to trust* (Mayer et al., 1995; Colquitt et al., 2007). The term *generalized trust* is used in the most recent conversations between its advocates and critics (Hardin, 2002, 2006; Nannestad, 2008; Uslaner, 2002, 2008), and I will keep using *generalized trust* in this dissertation. Even though there is no universally accepted definition of generalized trust, scholars have conceptualized it as a unidimensional construct and understood as "faith in people" (Rosenberg, 1957; Uslaner, 2002), "expectancy that the oral or written statements of other people can be relied upon" (Rotter, 1967), "general willingness to trust others" (Mayer et al, 1995), and "positive expectations of the trustworthiness, cooperativeness, or helpfulness of others" (Hardin, 2006). These different, yet overlapping definitions, lead to the widespread use of two different operationalizations. On one hand, the most popular operationalization of generalized trust in

sociology is a single-question instrument introduced by Rosenberg (1957): "Generally speaking, do you believe that most people can be trusted, or can't you be too careful in dealing with people". On the other hand, the most popular operationalization of generalized trust in psychology (and the management literature, too) is propensity to trust scale. There have been several propensity to trust scales, but Frazier, Johnson and Fainshmidt (2013) claim that their recently developed measure is the most parsimonious and generalizable. Frazier et al. (2013) included four, 5-point Likert-type items such as "I usually trust people until they give me a reason not to trust them", "Trusting another person is not difficult for me", "My typical approach is to trust new acquaintances until they prove I should not trust them" and "My tendency to trust others is high".

As for the nature of generalized trust, there are three main approaches in the literature. The first approach treats generalized trust as a rational extrapolation of past experiences (Hardin, 2002, 2006; Glanville & Paxton, 2007; Rothstein & Stolle, 2008; Rotter, 1967). It is explained by social learning theory, where "based on their trust of different groups of people in different settings and circumstances, individuals gradually develop a generalized expectations of what others, on average, are alike" (Glanville & Paxton, 2007). The second perspective views generalized trust as a stable psychological trait developed early in life, primarily as a response to benign treatment by the caregivers, and remains relatively stable over time (Farris, Senner & Butterfield, 1973; Uslaner, 2002). According to the third approach, both personality and life experiences are the sources of generalized trust (Nooteboom, 2006; Sztompka, 2007). Sztompka (2007) questions a monocausal theory of trust and proposes a theory that combines several sources of trust including rational calculations, psychological predisposition, cultural norms and quality of institutions. Sztompka (2007) argues that all these sources are interacting with each

other and are constantly influenced by the accumulation of experiences (in the case of predispositions it is about individual experiences; in the case of cultural norms it is about common history of groups or societies). Similarly, Nooteboom (2002) argues that rational reasons and psychological causes of trust operate concurrently and also influence each other. The former includes, among others, norms, values, contracts, supervision, and reputation, and the latter consists of instinct, inclinations (e.g. belief in a just world), feelings and emotions (e.g. empathy, love).

Empirical evidence seems to support the third approach, i.e. that both personality and life experiences are the sources of generalized trust. Glanville and Paxton (2007) analyzed three independent samples using confirmatory tetrad analysis, a technique based on the structural equation modeling, and compared statistical fit of two tetrad-nested models of generalized trust: one of social learning and one of psychological propensity. They find the former model fits better, and conclude that social learning model is more appropriate for generalized trust than the psychological propensity model. The results of Glanville and Paxton (2007) suggest to me that even though generalized trust is indeed influenced by contemporary life experiences (primarily by relationships with local communities), it can be viewed as a relatively stable propensity, too. Similarly, Uslaner (2002) provides support for both the psychological propensity and social learning theory. Using several panel datasets from American National Election Studies (ANES) in 1970s as well as Niemi-Jennings socialization study of high-school students and their parents from mid 1960s to early 1980s, Uslaner (2002) shows that generalized trust remains relatively stable, with 64 to 74 percent congruent responses, depending on the panel study and demographics. Then, Uslaner (2002) contrasts these results with trust in government, with only 30 to 45 percent congruent responses over time. He concludes that generalized trust is a

relatively stable core value developed early in life and independent of recent adult life experiences. However, in another chapter of his book, Uslaner (2002, p. 189) also demonstrates that generalized trust has roots in everyday life and changes with *collective experiences*. Uslaner (2002, p. 175) shows that over the course of one's life until the year of 2000, the number of people who trust others in general has decreased by about 40% and 10% for 1920s and 1960s generations, respectively, and increased for Early Baby Boomers (1946-1955 generation) by around 15%.

Taking these different theoretical perspectives and empirical evidence into consideration, I agree with Sztompka (2007) and Nooteboom (2006) that generalized trust is a complex phenomenon with multiple influences. Specifically, the theory and evidence suggests that generalized trust is shaped early in life, however, it changes little over time, which means that both past and present experiences matters. This conclusion is important for this dissertation research, since I will argue later in Chapter 3 that culture shapes people's generalized trust during their lives.

Cultural Values

Although there are multiple definitions of culture, scholars generally agree that culture refers to relatively stable common experiences and shared meanings that differentiate one group from another (Sztompka, 2002; Triandis, 1994; Tsui, Nifadkar & Ou, 2007). These common experiences and shared meanings are molded through historical experiences, religion, language as well as natural environment and climate (Oyserman & Uskul, 2008). The central features of culture are values (Thomas, 2008, p. 47). These cultural values are "conceptions of what is good and desirable" and are "appropriate for identifying societal differences in preferred ways of attaining key societal goals" (Schwartz, 2011, p. 469). Since the number of key societal goals is

limited, it is reasonable to expect finite number of ways in which a society can achieve these objectives and, thus, a limited number of underlying values (Thomas, 2008).

A pioneering framework of values underlying the ways societies achieve their goals was created almost 80 years ago (Koneczny, 1935, 1962). However, cross-cultural research in management took off only in early 1980s after Hofstede's (1980) seminal work, and as a response to accelerating development of a globalized economy (Earley & Gibson, 1998; Thomas, 2008). Yet, recent reviews of the field show that the majority of studies rely narrowly on Hofstede's individualism-collectivism dimension (Gelfand, Erez & Aycan, 2007; Tsui, Nifadkar & Ou, 2007). Indeed, Hofstede's cultural dimensions have been criticized from the very beginning for, among others, its incompleteness, loose theoretical base, the Western bias, and oversimplified statistical analysis (Ailon, 2008; Kirkman, Lowe & Gibson, 2006; Thomas, 2008). Since then, researchers have developed alternative cultural frameworks (e.g. Bond, 1988; House, Hanges, Javidan, Dorfman & Gupta, 2004; Schwartz, 2006; Triandis, 1995).

In particular, Schwartz' (2006, 2011) framework has addressed the aforementioned shortcomings of Hofstede's approach and, with no surprise, has been gaining prominence recently (Tsui et al., 2007). One of the other important advantages of Schwartz' framework is the conceptual difference between individual (personal) and cultural values (Schwartz, 2011, 2014; Smith & Schwartz, 1997). The difference comes from the fact that values at these two levels reflect different goals and requirements of individuals and societies. At the individual level, personal values help to explain individual differences in attitudes and behaviors, and are defined as "trans-situational goals, varying in importance, that serve as guiding principles in the life of a person" (Schwartz, 2011, p. 464). Drawing on previous work of scholars such as Spranger, Allport and Rokeach, Schwartz (2011) has defined and found empirical evidence for ten basic

individual values that (1) are recognized in all societies around the world, and that (2) create a coherent circular structure: congruent values are adjacent to each others, while conflicting ones are on the opposite sides of the circle's center (Fischer, Vauclair, Fontaine & Schwartz, 2010; Maio et al., 2009; Schwartz, 2011). These ten individual values include power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity and security, as depicted on Figure 4.

At the societal level, cultural values reflect the underlying forces influencing how people respond to basic societal problems in regulating individuals' activities within a larger group such as society. Schwartz (2011) draws on the work of sociologists and philosophers such as Comte, Durkheim, Weber and Parsons, and identifies three such problems: (1) creating and maintaining boundaries between a person and a group, (2) coordinating people's activities in a way that preserves social fabric, and (3) managing human and natural resources used in those activities. Schwartz (2008) defines six cultural value orientations which are located on the opposite poles, and which relate to the aforementioned three societal problems: (1) autonomy-embeddedness dimension, (2) egalitarianism-hierarchy dimension, and (3) harmony-mastery dimension, as shown on Figure 5 (taken from Schwartz, 2008). This "opposite pole" classification means that values on the same dimension are incompatible, i.e. cultures high on autonomy are more likely to be low on embeddedness, those high on harmony are more likely to be low on mastery, and those high on egalitarianism are more likely to be low on hierarchy (see Figure 5). However, those values that are adjacent to each other share some basic assumptions. For example, egalitarianism and harmony emphasize self-transcendence and concern for others' welfare.

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Schwartz (2014) argues that culture and, thus, cultural values, are not shared between individuals, and cannot be treated as psychological variables. Rather, Schwartz (2011) defines culture as external (societal) stimuli that influence individual's values, beliefs, thinking and behaviors. This influence (socialization) takes place through social institutions such as families, economic, legal and school systems, where individuals are "continually exposed to primes and expectations that promote the underlying cultural values" (Schwartz, 2008, p. 5). In this view, cultural values create a context in which people live, and represent central tendencies of the normative system prevailing in a given society. Empirically, Fischer and Schwartz (2011) have found some support for culture as external stimuli. Specifically, they analyzed individual values reported in many countries from three independent sources: Schwartz Value Survey, European Social Survey and World Value Survey. They have found that some individual values exhibit low to moderate within-country consensus, a pattern congruent with culture viewed as the latent normative value system rather than shared meaning. More specifically, Fischer and Schwartz (2011) have found that the average consensus of individual values within countries, measured by the agreement index a_{wg} equaled .59, but varied across different values from .36 to .71. The a_{wg} index has been developed by Brown and Hauenstein (2005), who defined it as the ratio of observed agreement to maximum possible disagreement, and ranges from -1 (maximum disagreement) to 1 (maximum agreement), and recommended that a_{wg} smaller than .6 should be considered as unacceptable agreement. In sum, the theoretical view of culture as external stimuli and its empirical support suggest that culture is responsible for the cross-cultural (cross-country) differences in attitudes such as generalized trust, and the ways social institutions are organized such as whether or not higher income inequality is accepted or promoted, which will be discussed in details in the following Chapter 3.

Event though individual and cultural values respond to different goals and requirements of individuals and societies, Schwartz (2011) argues that there should be some degree of similarity between values on individual and cultural level because of interdependencies: "cultural orientations help to shape the reinforcement contingencies to which individuals in a society are exposed in their daily" and, at the same time, "the psychological requirements of human nature place constraints on the normative demands that cultural orientations can make if they are to be effective" (Schwartz, 2011, p. 478). Moreover, Schwartz (2014) argues that it is acceptable to infer cultural values from the aggregation of personal values measured on individual level:

> The major component that emerges in the mean sample scores is what has influenced all individuals, the latent cultural values to which all have been exposed. The observed differences between societies on these mean scores reflect the differences between the latent value cultures in the societies. The means themselves are not the cultural values, but they are observable consequences from which we infer cultural values. (p. 5)

Indeed, Fischer et al. (2010) have found that values across these two levels have substantial structural similarity, however, there are notable differences, because some values have completely different functions at the individual and cultural level.

Finally, in this section, I will explain in more details all six of Schwartz' cultural value dimensions (see Figure 5), because I will consider them as independent variables in Study 1 (Chapter 3). The first dimension defines the nature of the relations and boundaries between a person and a group. One of the polar locations is autonomy. In autonomy culture people "are encouraged and cultivate and express their own preferences, feelings, ideas, and abilities, and find meaning in their own uniqueness" (Schwartz, 2008). As an example of theoretical and

practical implications of cultural values, I will use organizational context. Thus, in cultures high on autonomy employees are more likely to value work as less important and significant than leisure, but are more effectively motivated by intrinsic rewards since they expect interesting and meaningful work (Schwartz, 1999). The other polar location of the first dimension is embeddedness. Cultures high on embeddedness emphasize social relationships, identifying with the group, especially the extended family, its goals and way of life. These cultures emphasize maintaining the status quo, and restraining actions that might disrupt in-group solidarity or the traditional social order (Sagiv & Schwartz, 2007). Therefore, in cultures high on embeddedness people would value work as less important than devotion to family or traditional values (Schwartz, 1999). Moreover, they would treat their work as an obligation, because embeddedness underlines that each person is "an integral part of the larger collective who is required to behave according to the expectations attached to his or her role" (Schwartz, 1999, p. 42); and would prefer extrinsic rewards to intrinsic ones, because the former provide more stability and security, which are emphasized by embeddedness, while the latter are more aligned with autonomy which emphasizes self-expression.

The second dimension answers the question how people deal with others and how they manage their interdependencies. One of the polar orientations addressing this question is egalitarianism. In egalitarian cultures, people treat others as moral equals, feel concern for and act for the benefit of others' welfare (Schwartz, 2011). Therefore, employees would value work as less important and significant than involvement in community; on the other hand, they would expect to have interesting and meaningful work, and would expect rewards for their contribution to society (Schwartz, 1999). The other polar location of the second dimension is hierarchy. In cultures high on hierarchy the unequal distribution of power, roles and resources is legitimate

and taken for granted (Schwartz, 2011). In hierarchical societies, employees would value work more than anything else because, work is the most common way to increase one's power and wealth, as emphasized by hierarchy values; they would treat their work as obligation because of the normative emphasis on fitting into the provided institutional arrangements, regardless of personal preferences and satisfaction; and they would prefer extrinsic rewards to gain power, wealth and prestige (Schwartz, 1999).

The third dimension responds to the question how people manage human and natural resources. One of the polar orientations answering this question is harmony that which means accepting and preserving the world as it is rather than changing or exploiting it (Schwartz, 2011). Employees in harmony cultures value work as less important and significant than anything else, and view their jobs in the perspective of contributing to society (Schwartz, 1999). The other polar location of the third dimension is mastery, which means attaining personal goals and ambitions by changing and directing the environment, and expecting social recognition (Schwartz, 2011). Employees in mastery cultures value work more than anything else, because work is the most natural way to fulfill personal goals and ambitions to change the environment; and would appreciate the rewards of power and prestige as signals of personal success (Schwartz, 1999).

As a final note, I will underline that cultural values are not static. Even though scholars define culture as "the fairly stable characteristics of a group that differentiate it from other groups" (Tsui, 2007, p. 429), they also argue that culture changes in time, albeit slowly (House et al., 2004, p. 53, Sztompka, 2007, p. 272). Indeed, Inglehart and Baker (2000) have provided empirical evidence for those claims and demonstrated that cultural values in countries that experienced economic development shifted towards self-expression (vs. survival) and secular-

rational (vs. traditional) directions. Inglehart and Welzel (2005) give further evidence that socioeconomic progress makes cultural values of self-expression more important across societies. In addition, Schwartz (2008) has reported that the correlations between cultural values for 21 countries over a period of eleven years from 1988 to 1999 varied from .85 to .90, which suggest slow but significant changes in cultural values. These theoretical expectations and empirical evidence of dynamic cultural values are important for this paper because I argue that changes in cultural values explain changes in income inequality and generalized trust, which are observed in different countries over time.

In conclusion, in this dissertation paper I draw on Schwartz (2011) who suggested that cultural values are societal-level forces, which manifest through social institutions such as family, markets, political and legal systems, education, etc. As I will argue further in Chapter 3, these social institutions, in turn, influence beliefs and attitudes (e.g. generalized trust), and other societal-level outcomes (such as income inequality).

CHAPTER 3: Study 1, Inequality and Trust at the Aggregate Level

As I have discussed earlier, scholars have observed, on an aggregate level, a negative relationship between income inequality and generalized trust, and made causal claims that higher income inequality decreases generalized trust (Bjørnskov, 2006; Gustavsson & Jordahl, 2008; Knack & Keefer, 1997; Uslaner, 2002; Zak & Knack, 2001). In this chapter I argue that the causal claims have been based on a spurious relationship between income inequality and generalized trust, and I propose and test an alternative explanation for this phenomenon.

In particular, drawing on studies in cross-cultural psychology and sociology (Carson & Banuazizi, 2008; House, Hanges, Javidan, Dorfman & Gupta, 2004; Marková & Gillespie, 2008; Schwartz, 2008, 2011; Yamagishi & Yamagishi, 1994) I argue that cultural values are driving both generalized trust and income inequality. Thus, I contend that the observed, between-country, negative relationship between generalized trust and income inequality is a statistical artifact resulting from cultural values acting as confounding variables (Cook & Campbell, 1979, p. 59). In the subsequent sections, I will (1) argue why cultural values directly influence both generalized trust and income inequality; (2) provide theoretical support that cultural values rather than income inequality are country-level antecedents of generalized trust, and (3) propose and test a series of hypotheses to support my claims.

Cultural Values and Generalized Trust

Several scholars argue that generalized trust is influenced, at least to some extent, by culture. Uslaner (2002, p. 231) writes: "Beyond economic inequality and optimism, I posit a cultural basis for generalized trust". The common argument is that cultures have rules or value systems that shape generalized trust (Doney, Cannon, & Mullen, 1998; Johnson & Cullen, 2002;

Kramer, 1999; Sztompka, 2007). Kramer (1999) argues that both formal and informal rules embedded in societies enable shared understanding and expectations regarding appropriate behavior and, thus, facilitate general willingness to trust others. In similar vein, Sztompka (2007) make the case that generalized trust is shaped by two informal rules: (1) one shall trust others unless they prove to be untrustworthy, and (2) one shall reciprocate trust of others unless their trust proves false. When the members of a society commonly accept these two rules, the development of generalized trust is facilitated. However, when these rules are not widespread, *culture of distrust* develops (Sztompka, 2007, p. 272), because when people are suspicious about others' motives and intentions they are more likely to break commitments, disregard expectations and cheat partners. Finally, Johnson and Cullen (2002) and Doney et al. (1998) focus on cultural values as sources of influence on generalized trust, and propose that generalized trust is shaped, inter alia, by Hofstede's (1980) cultural values of individualism, uncertainty avoidance and power distance. These cultural values establish standards for appropriate behaviors and beliefs, which in turn facilitate or inhibit the development of generalized trust (Doney et al., 1998). Indeed, there is a vast empirical evidence that norms with regards to whom, when and how to trust differ across countries (Huff & Kelly, 2003; Inglehart, 2000; Kasser, Cohn, Kanner & Ryan, 2007; Schwartz, 2007b, 2011; Yamagishi, Cook & Watabe, 1998; Yamagishi & Yamagishi, 1994; Zaheer, McEvily & Perrone, 1998).

Dynamic Relationship

Most of the aforementioned arguments address the expected relationships between cultural values and generalized trust from a static perspective, as if cultural values were constant. However, as I have explained in Chapter 2, Theory and Definitions, cultural values change in time, albeit slowly. Since cultural values influence people's beliefs and attitudes through

socialization (Schwartz, 2014), it is plausible to expect that temporal changes in cultural values will also be reflected in temporal changes of generalized trust.

Specifically, Schwartz (2011, 2014) and Oyserman and Uskul (2008) argue that culture shapes individual's beliefs and values primarily through formal and informal institutions but also through common practices, symbols and language. Thus, every member of a society is socialized according to the underlying cultural values. For example, in the case of egalitarianism, Schwartz (2007b) writes:

> The assumptions underlying a cultural emphasis on egalitarianism values is that people can and should be socialized to transcend their selfish interests voluntarily and promote the welfare of others. Thus, [generalized trust] is greater to the extent that the cultural value orientations in a country emphasize the expectations that individuals will voluntarily promote the welfare of others rather than the expectations that social controls are necessary to prevent the breakdown of interpersonal ties. (p. 193)

Implicit for socialization is time (Sztompka, 2002). It is important to have more accurate assessment of the time lag between the change in cultural values and its effects on generalized trust. Sztompka (2002) argues that socialization in modern societies occurs quicker than it used to, because changes in cultural norms and values are transmitted much faster through mass media, bypassing traditional, slower, channels of socialization such as parents, peers, education system and religious institutions. Moreover, in addition to the traditional, top-down, direction of socialization, contemporary societies experience bottom-up socialization where younger generations influence older ones (Sztompka, 2002, p. 402). Thus, on one hand, it is plausible to expect that people adjust to changes in cultural values sooner than after a generation or decade.

On the other hand, research on organizational adjustment of newcomers suggests that socialization is a relatively fast process, with effects of adjustments visible after several months (Bauer, Bodner, Erdogan, Truxillo & Tucker, 2007). Thus, in the context of cultural values, the question is whether socialization can happen within months. I would argue that years instead of months would be more appropriate in this case. There are a couple of reasons for this assertion. First, newcomers adjust not only through their own efforts to reduce uncertainty but also through deliberate organizational tactics such as series of training programs, boot camps, feedback sessions and social events (Bauer et al., 2007). However, these deliberate actions seem to be much more diffused in a society. Moreover, traditional institutions responsible for socialization such as schools, universities and religious organizations respond much slower to changes, because their response comes as a compromise between different, often conflicting, interest groups. Therefore, my conclusion is that members of society will need at least a couple of years to respond to the changes in cultural values and to adjust their attitudes and beliefs (such as generalized trust).

To summarize, in the following paragraphs, I will discuss aforementioned studies and their implications, and hypothesize about the static and dynamic relationships between Schwartz' cultural values and generalized trust. I will address these relationships in the following order. First, I will discuss cultural values reflecting the underlying forces influencing how people create and maintain boundaries between a person and a group, i.e. the autonomy-embeddedness dimension, and how they influence generalized trust. Second, I will look at the egalitarianism-hierarchy dimension, i.e. cultural values that influence how people manage their interdependencies and how they coordinate their activities, and how they impact trust towards other people. Finally, I will discuss the harmony-mastery dimension that shapes the ways in

which people manage human and natural resources in their activities, and its influence on generalized trust.

Autonomy-Embeddedness

Schwartz (2008, p. 7) argues that cultures high on embeddedness, i.e. cultures where "people are viewed as entities embedded in the collectivity" and which emphasize "maintaining the status quo and restraining actions that might disrupt in-group solidarity or the traditional order" are more likely to rely on strong social controls as a means of preserving the traditional social norms, values and in-group social relationships. These social controls make generalized trust less important: one does not really need to trust others to cooperate, because powerful social controls guarantee that other people will behave appropriately.

Yamagishi et al. (1998) proposed additional explanations why cultures, in which people prefer to be part of a group, rather than independent from a group, such as embedded or collectivistic cultures, do not facilitate the development of generalized trust. Yamagishi et al. (1998, p. 166) argued: "intense group ties, often observed in collectivist cultures, prevent trust from developing beyond group boundaries". To explain this phenomenon, Yamagishi and Yamagishi (1994) differentiated between (1) trust, i.e. an expectation of others' benign behavior based on their goodwill, and (2) assurance, i.e. an expectation of others' benign behavior for reasons other than goodwill such as the incentive structure surrounding the relationships (e.g. cultural norms). As an illustration, guanxi in China constitutes a very strong cultural norm and obliges everybody in a particular social network to exercise in-group favoritism and reciprocity (Gu, Hung & Tse; 2008). A breach of guanxi may lead to *face loss*, a very powerful mechanism of social exclusion (Gu, Hung & Tse; 2008).

Yamagishi and Yamagishi (1994) as well as Yamagishi et al. (1998) argue that in collectivistic cultures, to avoid social uncertainty (i.e. a situation where is not easy to correctly assess others' intentions), people develop stable and committed relationships. On one hand, these committed relationships create sense of assurance, because they are embedded in a system of social sanctioning that guarantees mutual cooperation in such stable and committed groups (Yamagishi et al., 1998; Schwartz, 2008). On the other hand, these stable relationships are not conducive for building trust towards other people in general (i.e. strangers) because (1) strong loyalty towards and identity with the in-group discourage cooperation with the out-group even at the cost of better opportunities outside committed relationships, and because (2) formal and informal social monitoring and sanctioning is much weaker in the relationships between strangers (Yamagishi & Yamagishi, 1994; Yamagishi et al., 1998).

In contrast to cultures high on embeddedness, generalized trust is more likely to develop in cultures high on autonomy. According to Schwartz (2011, p. 471) cultures high on autonomy (and, thus, low on embeddedness) "treat people as autonomous, bounded entities" and encourage people "to cultivate and express their own preferences, feelings, ideas and abilities, and to find meaning in their own uniqueness". This autonomy and independence from the group makes generalized trust more relevant for cooperation. The first reason is that closed, committed relationships governed by social monitoring and sanctioning are less likely to develop in autonomous cultures. Therefore, to reduce social uncertainty in the absence of assurance from committed relationships, generalized trust becomes necessary (Yamagishi, 2011). The second, related, reason is that there are incentives to develop generalized trust in situations when the opportunity cost of staying in the committed relationship is high. In such circumstances, generalized trust emancipates a person from *relational confinement* (Yamagishi, 2011, p. 54) and

allows for building new, more beneficial, relationships. This is less likely to happen in embedded cultures, since even when the opportunity cost of the committed relationship is high, it is difficult to build a new relationship because: (1) potential new partners are already in committed relationships closed to outsiders, and (2) breaking a committed relationship is discouraged by strong social norm of loyalty (Yamagishi et al., 1998).

The theory outlined by Schwartz (2008), and Yamagishi et al. (1998) has been supported by Huff and Kelly (2003), and Gheorghiu, Vignoles and Smith (2009). Huff and Kelly (2003) studied six Asian countries in comparison with the US, and they underlined the role of in-group loyalty and commitment as the main reason for lower, on average, generalized trust in collectivistic cultures. One caveat of Huff and Kelly's (2003) study is that they assumed that all six Asian countries are more collectivistic than the US, but found that generalized trust in the US was not significantly different than in Malaysia and China. Similarly, Gheorghiu, Vignoles and Smith (2009) have studied 31 European countries and found that, controlling for individual-level individualism/collectivism orientations, generalized trust is lower in collectivistic countries. Gheorghiu et al. (2009) used Schwartz' embeddedness/autonomy dimensions as a measure of country-level collectivism/individualism.

In sum, even though the relationship between autonomy-embeddedness dimension and generalized trust has been studied, I will formally state the following hypotheses to build a logical flow of the arguments in this chapter, and to conduct a replication:

Hypothesis 1A: Autonomy is positively related to generalized trust.

Hypothesis 1B: Embeddedness is negatively related to generalized trust.

Hypothesis 1C: An increase in the cultural value of autonomy is related to an increase in generalized trust a few years later.

Hypothesis 1D: An increase in the cultural value of embeddedness is related to a decrease in generalized trust a few years later.

Egalitarianism-Hierarchy

According to Schwartz (2011, p. 472) egalitarian cultures "urge people to recognize one another as moral equals who share basic interests as human beings". Thus, people in egalitarian cultures are expected to "transcend their selfish interests voluntarily and promote the welfare of others" (Schwartz, 2007b, p. 193). On the other hand, cultures that endorse hierarchy "rely on hierarchical systems of ascribed roles to ensure responsible, productive behavior" (Schwartz, 2011, p. 472). Thus, generalized trust should be greater in egalitarian cultures because cultural value of egalitarianism emphasizes voluntary concern rather than social controls (such as hierarchical systems) for maintaining responsible relationships and promoting others' welfare. Similarly, drawing on Yamagishi and Yamagishi's (1994) assertion that collectivistic cultures with their strong social controls do not facilitate generalized trust, I infer that less intense social controls in egalitarian cultures make generalized trust more important for managing interdependencies between people and for coordinating their activities.

The aforementioned theoretical explanations have received mixed empirical support. Even though Schwartz (2007b) found that egalitarianism is positively related to generalized trust in 31 European countries, Gheorghiu et al. (2009) did not found any significant relationship. One possible explanation for null findings by Gheorghiu et al. (2009) is that they combined egalitarianism and harmony cultural values in a single scale, which might have obscured the results. More specifically, even though egalitarianism and harmony are adjacent values in Schwartz' cultural values model and can be considered compatible to some extent (see Figure 5),

combining them on a single scale may reduce the power of detecting different mechanisms through which egalitarianism and harmony influence generalized trust.

Putnam (1993) and Inglehart (2000) also suggested that hierarchical, centralized organizations do not facilitate generalized trust, while more egalitarian, locally controlled organizations are conducive to generalized trust. As Putnam (1993, p. 174) argues, hierarchical (vertical) organizations cannot facilitate generalized trust because information flow and control mechanisms are asymmetrical which, oftentimes, create perceptions of unfairness and suspicion (e.g. subordinates may withhold information to hedge against exploitation by those higher in the hierarchy; at the same time subordinates have less power in conflict resolution than their superiors). In addition, Rothstein and Uslaner (2005) argued that hierarchical cultures are not conducive to generalized trust:

> Such societies have rigid social orders marked by strong class divisions that persist across generations. Feudal systems and societies based on castes dictate what people can and cannot do depending on the circumstances of their birth. When economic resources are stratified – or when people believe that others have unfair advantages – trust will not develop. (p. 47)

In sum, egalitarian cultures are more likely to promote the development of generalized trust than hierarchical ones because of much weaker social controls and more real opportunities for crossing boundaries of a given social order.

Finally, even though the relationship between egalitarianism-hierarchy dimension and generalized trust has been studied already (with mixed empirical results), I will formally state the following hypothesis to build a logical flow of the arguments in this chapter and conduct a replication:

Hypothesis 2A: Egalitarianism is positively related to generalized trust.

Hypothesis 2B: Hierarchy is negatively related to generalized trust.

Hypothesis 2C: An increase in the cultural values of egalitarianism is related to an increase in generalized trust a few years later.

Hypothesis 2D: An increase in the cultural value of hierarchy is related to a decrease in generalized trust a few years later.

Harmony-Mastery

According to Schwartz (2011, p. 472) harmony cultures "emphasize fitting into the social and natural world, accepting, preserving and appreciating the way things are" and "encourage maintaining smooth relations and avoiding conflict". Schwartz (2008) suggested that cultures high in harmony promote collaboration rather than competition, and contribution to the common good rather than pursuing one's own ambitions. Collaboration and contribution for the common good, in turn, are conducive for the development of trust through transparent communication and open information-sharing (Schwartz, 2008; Zaheer, McEvily & Perrone, 1998). The aforementioned theoretical explanations have not received empirical support. Schwartz (2007b) and Gheorghiu et al. (2009) have not reported harmony as a statistically significant variable explaining generalized trust. One possible explanation for null findings by Gheorghiu et al. (2009) is that they combined harmony with egalitarianism in a single scale, which might have obscured the results, as explained in the previous section.

In contrast, cultures valuing mastery "encourage groups and individuals to master, control, and change the social and natural environment through assertive action. They view seeking competitive advantage through such action as legitimate" (Schwartz, 2007a, p. 53). Kasser et al. (2007) suggested that cultures emphasizing mastery are not only more competitive

and unequal but also produce poorer interpersonal relationships. This is because financial success, image and reputation are oftentimes identified as one's goals in life, which make people less empathetic and more cynical in the context of interpersonal relationships. What is more, such attitudes and poorer relationships undermine trust in the long run (Kasser et al., 2007; Sztompka, 2007). As a result, I propose:

> *Hypothesis 3A: Harmony is positively related to generalized trust.*

> *Hypothesis 3B: Mastery is negatively related to generalized trust.*

> *Hypothesis 3C: An increase in the cultural value of harmony is related to an increase in generalized trust a few years later.*

> *Hypothesis 3D: An increase in the cultural value of mastery is related to a decrease in generalized trust a few years later.*

Cultural Values and Income Inequality

In the previous section I have argued that underlying cultural values in a society influence the average level of generalized trust in that community. As I have stated at the beginning of this dissertation, my goal is to demonstrate that the observed negative relationship between income inequality and generalized trust is confounded by cultural values. In other words, using Schwartz' (2011) cultural framework, I argue that both generalized trust and income inequality are shaped by the underlying cultural values of a society. Therefore, after discussing the relationship between cultural values and generalized trust in the previous section, here I will argue that cultural values influence income inequality, too.

Indeed, scholars have suggested and provided some empirical evidence that income inequality is an outcome of cultural norms and values. Schwartz (2007b, p. 56) argues: "Compared with societies characterized by more strategic collaboration among actors, more

competitive, market driven societies show a stronger cultural preference for (…) allocating roles and resources hierarchically and unequally as the way to motivate and elicit cooperative behavior". In his recent book, Stiglitz (2012) named societal norms as well as market forces, government and institutions as factors determining inequalities in the US. Stiglitz (2012) argues in line with Schwartz' theorizing about cultural preferences for inequalities:

This meant that when social mores changed in ways that made large disparities in compensation more acceptable, executives in the United States could enrich themselves at the expense of workers or shareholders more easily than could executives in other countries". (p. 66)

Furthermore, I would argue that societal norms determine inequalities also indirectly through other factor mentioned by Stiglitz (2012) such as market forces and government. Stiglitz (2012) proposed that government policies correspond to societal norms:

"Indeed, politics, to a large extent, reflects and amplifies societal norms. In many societies, those at the bottom consist disproportionally of groups that suffer, in one way or another, from discrimination. The extent of such discrimination is a matter of societal norms". (p. 53)

Finally, drawing on existing empirical studies, Oyserman and Uskul (2008) proposed a theoretical model of culture as a societal-level process influencing societal-level outcomes such as income inequality. Oyserman and Uskul (2008) proposed direct and indirect paths through which culture influences societal-level consequences. The discussion of all of these paths is beyond the scope of this paper but one path is especially relevant here, i.e. a link from culture through cultural values to societal-level outcomes. In Oyserman and Uskul's (2008) model, culture (i.e. history, religion and language) influences cultural values that are emphasized in a

given society (e.g. egalitarianism vs. hierarchy), which, in turn, influence societal-level consequences (e.g. income inequality). The implications of Oyserman and Uskul's (2008) model are similar to the conclusions from Schwartz (2007b) theoretical arguments, i.e. that cultural values influence income inequality.

In addition to these theoretical models, scholars have conducted empirical studies and found that cultural values are associated with income inequality (Carson & Banuazizi, 2008; Erez, 1997; Fershtman & Weiss, 1993; Fiske, 1992; Kasser, Cohn, Kanner & Ryan, 2007; Triandis, 2002). These scholars have found that the influence of cultural values on income inequality happens through preferred rules for rewarding performance (e.g. equity vs. equality), expectations about distribution of resources and power (e.g. egalitarian vs. hierarchical cultures), and emphasis on the type of the economic system (e.g. competitive vs. collaborative). In other words, cultural values can, on one hand, facilitate, encourage and cause acceptance of income inequalities and, on the other hand, inhibit, discourage and cause rejection of income inequalities.

Dynamic Relationship

The aforementioned studies addressed the expected relationships between cultural values and income inequality from a static perspective, as if cultural values were constant. However, in Chapter 2, I argued that cultural values change in time, albeit slowly. Therefore, it is plausible to expect that temporal changes in cultural values will also be reflected in temporal changes of income inequalities.

One potential problem with this expectation is that scholars suggested a reciprocal relationship between economic development (thus, potentially, income inequality) and culture (Schwartz, 2008; Triandis, 1995). Schwartz (2008) writes:

[Economic development] gives people both the opportunities and the means to make choices, enabling them to pursue autonomy and to take personal responsibility. From the viewpoint of society, economic development makes it desirable to cultivate individual uniqueness and responsibility. (…) Hence, economic development fosters cultural autonomy and egalitarianism and curbs embeddedness and hierarchy. But culture also influences development. Cultures that persist in emphasizing embeddedness and hierarchy stifle the individual initiative and creativity needed to develop economically. (p. 35)

However, I do not expect that income inequality per se exerts similar direct pressures on cultural values of autonomy, egalitarianism and harmony, because income inequality is a consequence of economic development, public policies (Kelley & Zagorski, 2004; Kuznets, 1955) and cultural norms (Stiglitz, 2012). Therefore, income inequality should not have exogenous influence on culture. It is rather growing opportunities and affluence that may reinforce or undermine cultural values. As an illustration, rising economic prosperity in Japan was related to the erosion of collectivism and increase in individualism (Oyserman & Uskul, 2008), where individualism and collectivism overlap, to a certain extent, with Schwartz' autonomy and embeddedness, respectively. As another example, Inglehart and Baker (2000) related economic development to the drop of traditional and survival values (e.g. emphasis on religion and economic security, respectively) and rise of the opposite secular and self-expression values. However, as Inglehart and Baker (2000) underline, the changes in traditional vs. secular values are smaller in magnitude than changes in survival vs. self-expression values, and seem bounded by historical heritage of societies. The first conclusion from Inglehart and Baker's (2000) study is that economic development influences cultural values but mostly in survival/self-

expression dimension (which has some overlap with Schwartz autonomy/embeddedness values).

Second, even though income inequality was not statistically controlled in the analyses, similar patterns of changes across different countries, as observed by Inglehart and Baker (2000), suggest these changes are unrelated to income inequality.

Moreover, in the light of system justification theory (Jost, Banaji & Nosek, 2004), even relatively high levels of income inequality are unlikely to influence people's cultural values, because most people accept existing inequalities as a natural consequence of the economic and social system they live in. Indeed, in a longitudinal cross-cultural study Kenworthy and McCall (2008) found no relationship between growing income inequality and people's acceptance of it and their preferences for distribution. This finding would suggest no or, at best, very weak influence of income inequality on cultural values.

However, there might be situations, especially in modern democracies, when income inequality draws the attention of the society, media and decision makers, who can introduce new laws and regulations that, in turn, can influence cultural values through institutional pressures (Schwartz, 2014). One of these situations is the relative misfortune of the poorest people in the country when income inequality is growing, i.e. when the real incomes of people at the bottom of income distribution decline while others' incomes grow. Mutz and Mondak (1997) have found that citizens are sensitive to those scenarios and tend to punish incumbents at the subsequent elections. But how frequent are these situations? Deininger and Squire (1996) analyzed more than hundred countries over four decades and found that the income of the bottom quintile of a population declined in one third of the cases when income inequality was growing (meaning that in two thirds of the cases when income inequality has been growing, income of the poorest has also grown). In those thirty percent of cases, public claims that excessive inequality is

detrimental to economies and societies (Milanovic, 2005; Uslaner, 2002; Wilkinson, 2006) may trigger incumbents' actions such as new political, educational, and economic regulations. For example, in cultures high in mastery a very competitive economic system is likely to develop (Schwartz, 2008), what may lead to relatively high levels of income inequality (Rothstein & Uslaner, 2005). When income inequality becomes an issue, incumbents may come up with regulations that will deemphasize the underlying cultural value of mastery, for example, by introducing higher income and capital gain taxes, which discourage entrepreneurship (Gentry & Hubbard, 2000; Keuschnigg & Nielsen, 2004). According to Schwartz' (2014) cultural model, these tax regulations can have reciprocal influence on cultural value of mastery by demotivating people to master and change the environment. Nonetheless, these new regulations will likely come from a compromise between different, often conflicting, interest groups. Thus, the real impact of these institutional pressures on cultural values may be low. Moreover, these regulations will likely operate only temporarily until inequality reaches an acceptable level in a given political, social and cultural context. This temporal presence will also weaken the reciprocal influence of income inequality on cultural values.

Finally, Milanovic, Lindert and Williamson (2007) demonstrate that inequality patterns from pre-industrial times have been perpetuated, i.e. income inequalities have been lower in East Asia than in the Middle East and Latin America, and similar patterns are still observed today. This may suggest that cultural differences between these regions have deep influence on income inequality patterns, but not the other way around.

To summarize, in the following paragraphs, I will discuss implications of these studies and hypothesize about the static and dynamic relationships between all six Schwartz' cultural values and income inequality. I will address these relationships in the same order as in the

previous section when I discussed generalized trust. First, I will discuss cultural values reflecting the underlying forces influencing how people create and maintain boundaries between a person and a group, i.e. the autonomy-embeddedness dimension, and how they impact income inequality. Second, I will look at the egalitarianism-hierarchy dimension, i.e. cultural values that influence how people manage their interdependencies and how they coordinate their activities. Finally, I will discuss the harmony-mastery dimension, which shapes the ways in which people manage human and natural resources.

Autonomy-Embeddedness

Schwartz (2007b, p. 54) argues that cultures high on autonomy encourage people to "cultivate their own uniqueness and express their own preferences", while cultures high on embeddedness encourage people to identify with a larger group and to "maintain group traditions and solidarity, and restrain potentially disruptive actions". The first conclusion from these definitions is that people in societies scoring higher on autonomy are more likely to challenge the status quo and work relentlessly to achieve their goals than in societies scoring higher on embeddedness. Therefore, it is plausible to expect that people in autonomous societies will be more likely to question high and unjust income inequality, and that their actions will sooner or later influence tax and distribution policies as well as other non-distributive laws, which, in turn, will decrease income inequality over time.

Other arguments for the influence of autonomy-embeddedness dimension on income inequality include Kasser et al. (2007) and Schwartz (2007b) assertions that some aspects of embeddedness facilitate the development of competitive capitalism, which, in turn, is related to higher levels of income inequality (Rothstein & Uslaner, 2005). Kasser et al. (2007) propose that some aspects of embeddedness such as social pressures to conform and meet expectations for

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financial success, obtaining advertised goods and achieving model lifestyles, are the underlying values of competitive capitalism, such as exists in the US. Kasser et al. (2007, p. 14) argue and cite empirical evidence that people respond to these social pressures not because they freely choose to do so but because they feel pressured and coerced. In other words, social pressures (aspects of embeddedness) are incompatible with and, thus, can undermine freedom and self-expression (aspects of autonomy), and this configuration is related to competitive capitalism. In addition, competitive capitalism often leads to higher levels of income inequality for reasons such as very high compensations of executives justified by widely accepted economic theory of marginal productivity (Stiglitz, 2012); flexible labor market and less government regulations in general (Hall & Gingerich, 2004); and inefficient welfare system (Rothstein & Uslaner, 2005).

Schwartz (2007b) implied that when the aforementioned aspects of embeddedness do not undermine autonomy, then less competitive and more collaborative kinds of capitalism develop. In a more collaborative capitalism ownership is relatively concentrated, stock markets are smaller, unionization is higher and labor turnover is lower (Hall & Gingerich, 2004). These factors, in turn, are more likely to result in lower inequality as economic outcomes depends on strategic collaboration and negotiations between many actors, which is in contrast to competitive capitalism where coordination is often achieved through market competition (Hall & Gingerich, 2004, Schwartz, 2007b).

It is not clear, however, how the arguments of Kasser et al. (2007) and Schwartz (2007b) apply to other economic systems. On the other hand, different forms of capitalism are present in majority of countries, including post-communists countries such as China and Russia (Kasser et al., 2007). With this premise, the aforementioned arguments could be applied more universally. Therefore, formally stated:

Hypothesis 4A: Autonomy is negatively related to income inequality.

Hypothesis 4B: Embeddedness is positively related to income inequality.

Hypothesis 4C: An increase in cultural values of autonomy is related to a decrease in income inequality a few years later.

Hypothesis 4D: An increase in cultural values of embeddedness is related to an increase in income inequality a few years later.

Egalitarianism-Hierarchy

According to Schwartz (2011) egalitarian cultures socialize people to treat each other as moral equals and to take into account the welfare of others. On the other hand, cultures that endorse hierarchy rely on:

> differential, hierarchical allocation of roles and resources to groups and individuals as the legitimate, desirable way to regulate interdependencies. People are expected to meet role obligations, accepting external social control. (…) Cultures high on hierarchy emphasize authority, social power, wealth, and humility. (Schwartz, 2007b, p. 54)

Thus, it is plausible to expect that cultures valuing egalitarianism will facilitate and accept lower levels of inequalities, while cultures valuing hierarchy will endorse and accept higher levels of inequalities, in particular, income inequalities.

Indeed, Fiske (1992, p. 691) has suggested that in cultures where people construct social relationship based on hierarchy ("authority ranking"), inequalities in wealth and social status are legitimate and higher than in relationships based on egalitarianism ("equality matching"). Similarly, Erez (1997) and Triandis (2002) have suggested that hierarchical cultures allow for large inequalities of income and social status, using examples of the US (hierarchical culture and

higher inequality) and Sweden (egalitarian culture with lower inequalities). Therefore, formally stated:

Hypothesis 5A: Egalitarianism is negatively related to income inequality.

Hypothesis 5B: Hierarchy is positively related to income inequality.

Hypothesis 5C: An increase in cultural value of egalitarianism is related to a decrease in income inequality a few years later.

Hypothesis 5D: An increase in cultural values of hierarchy is related to an increase in income inequality a few years later.

Harmony-Mastery

Harmony cultures "encourage maintaining smooth relations and avoiding conflict" (Schwartz, 2011, p. 472). Schwartz (2008) also suggested that cultures high in harmony promote collaboration rather than competition and contribution to the society rather than pursuing one's own ambitions. This collaborative approach and the need for smooth relations are not conducive for outcome disparities. For example, in an experimental study on resource distribution, Carson and Banuazizi (2008) have found that participants from the Philippines preferred equal distribution of resources because they were more concerned about negative interpersonal relationships and negative feelings as a result of unequal distribution. This type of preference is typical for harmony cultures since they encourage smooth relations and avoiding conflict. Moreover, as the second most preferred distribution the Filipinos chose was need-based distribution whereas the Americans selected merit-based distribution. The former choice is more typical for harmony cultures but the latter choice is common in cultures valuing mastery. According to Schwartz (2007a, p. 53), cultures valuing mastery "encourage groups and individuals to master, control, and change the social and natural environment through assertive

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action. They view seeking competitive advantage through such action as legitimate". Thus, in cultures high on mastery, outcomes based on equity rules are more desirable and, therefore, higher inequalities (including income inequalities) are expected and accepted (Kasser et al., 2007). Preliminary empirical evidence for the assertion that cultures promoting harmony rather than mastery produce lower income inequality comes from Uslaner (2002) who has found that Muslim societies are more equal than others. Uslaner (2002, p. 233) argues that Muslim societies place greater emphasis on "one's economic responsibility to the larger community (as reflected in the prohibition on charging interest on loans)". Such responsibility to the larger community could be taken as a sign of maintaining smooth relationship and fitting into social world rather than exploiting it, which are both characteristics of harmony cultures.

Similarly, Fershtman and Weiss (1993) have argued that the more people value social status, the higher income inequalities are. More specifically, they have proposed a simplified economic model with one high and one low status industry, where social status is based primarily on the proportion of educated (skilled) employees in an industry. Based on supply and demand laws, Fershtman and Weiss (1993) have argued that when social status becomes culturally important, wages of skilled workers in low status industry have to rise to attract sufficient number of employees (otherwise, too many workers in low status industry will give up salary for social status). The consequence of this increase in wages is higher income inequality between these two industries and also within the low status industry. Since social status in terms of recognition and prestige is, by definition, an important element of the cultural value of mastery (Schwartz, 2008), I conclude that findings of Fershtman and Weiss (1993) give additional support for the proposition that mastery facilitates income inequalities. Therefore, formally stated:

Hypothesis 6A: Harmony is negatively related to income inequality.

Hypothesis 6B: Mastery is positively related to income inequality.

Hypothesis 6C: An increase in cultural value of harmony is related to a decrease in income inequality a few years later.

Hypothesis 6D: An increase in cultural values of mastery is related to an increase in income inequality a few years later.

Cultural Values, Income Inequality and Generalized Trust

Finally, if Hypotheses 1 to 6 are correct, i.e. if cultural values confound the relationship between income inequality and generalized trust or, in other words, if cultural values are causally related to both generalized trust and income inequality, I propose that:

Hypothesis 7: The negative relationship between income inequality and generalized trust reported in cross-country studies disappears once the cultural values are controlled.

Method

Study 1 is an archival, cross-national, country-level test of the relationship between income inequality and generalized trust. The statistical analysis is done on both cross-sectional data (to test some of the hypotheses on a bigger sample of countries from all cultural regions) and panel data (to test causal hypotheses with longitudinal data available for a limited number of countries). Hypotheses H1 to H6 (A and B, only) and H7 are tested using cross-sectional data, and hypotheses H1 to H6 (C and D, only) are tested using panel data. Since all the hypotheses are country-level, all statistical analyses are done on a country level, too, and no individual level variables are used.

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I created two datasets (Dataset 1 and Dataset 2) to test hypotheses H1 to H6 (A and B, only) and H7, and another dataset (Dataset 3) to test longitudinal hypotheses H1 to H6 (C and D, only). The reason for having two datasets for testing hypotheses H1 to H6 (A and B, only) and H7 is that I will use two different measures of generalized trust to make more informed conclusions. Dataset 2 includes a subset of countries available in Dataset 1, and has a different measure of generalized trust. The reason for having Dataset 3 for longitudinal hypotheses is that the time series data on cultural values and generalized trust are limited to 26 countries from the European Social Survey. For all datasets, I matched the years when the variables of interest were collected, as much as it was possible. The exact process of year-matching is described in Measures section below.

The Dataset 1 and Dataset 2 consist of 73 countries for which the core variables of interests are collected from the following sources: World Value Survey (WVS, 2009), Delhey, Newton & Welzel (2011), Standardized World Income Inequality Database (Solt, 2009), and Schwartz (personal communication, August 2014). The Dataset 3 consists of the data on generalized trust and cultural values for 26 countries measured up to six points in time, every other year starting from 2002 until 2012, and come from the European Social Survey (European Social Survey Cumulative File, ESS 1-6, 2014).

In the following paragraphs I describe in more details the core databases that are the sources for dependent and independent variables.

The World Values Survey

As a source of generalized trust, in Dataset 1 and 2, I will use The World Values Survey (WVS, 2009). The WVS is a worldwide survey of human beliefs, values and motivations

conducted by an international network of social scientists. The survey has been administered in six waves, roughly every 5 years, to more than 400,000 participants in 100 countries (WVS, 2014). Samples were drawn from the population of 18 years and older and stratified random sampling was used based on population registers, geographical regions and national registers, with weights calculated to compensate for deviation in distribution of important demographic parameters in actual versus target samples, such as gender, age, urban versus rural location. For each wave, a master questionnaire was developed in English first, and then the questionnaire was translated into the different languages and, in many cases, back translated for quality purposes.

Standardized World Income Inequality Database

As a source of the Gini index of income inequality I used the Standardized World Income Inequality Database, which was designed especially for cross-cultural studies (Solt, 2009). The SWIID includes several measures of income inequality and addresses the issue of comparability of income inequality across countries and years. In particular, SWIID applies standardization procedures to existing data sources to create the database of gross and net Gini coefficient for 173 countries for as many years as possible starting from 1960 (Solt, 2009). The problem with other existing inequality databases is that different countries used different units of analysis (e.g. household vs. individual), had non-representative samples, and used different measures of income (e.g. pre-tax or after-tax; wages only vs. wages and other sources of income). These differences have obvious negative impact on the quality of comparative, cross-country studies (Deininger, & Squire, 1996). The SWIID (Solt, 2009, p. 10) provides much more homogenous database of Gini coefficients, and their standard errors are quite small: "about 30% of the observations have associated standard errors of 1 point or less on the 0 to 100 scale of the Gini index. Over 60% of the standard errors are less than 2 points, and more than 85% are less than 3

points".

Schwartz' Cultural Values Database

As a source of cultural values in Dataset 1 and 2, I will use the database created by Schwartz (personal communication, August 2014). Schwartz (2011) collected the data from 55,022 respondents to his fifty-seven-item Schwartz Value Survey (SVS). Responses were collected in 233 samples drawn from seventy-three countries between 1988 and 2005. Out of these 233 samples, 88 were drawn from schoolteachers, 132 from colleague's students, and 16 were representative national samples. In heterogeneous countries samples were drawn from the most dominant groups (e.g. Israel Jews and Arabs). Using multidimensional scaling on individual level, Schwartz (2011) concluded that, out of fifty-seven items in SVS, forty-six are cross-culturally equivalent in the within-sample analyses, i.e. the location of these items match exactly the theoretical model of ten basic individual values (see Figure 4) in at least 75 percent of samples. Therefore, those forty-six items were used for subsequent multidimensional scaling analysis at the culture level. That analysis confirmed the theoretical circular model of six cultural values, where values that are correlated positively are adjacent, and those that are correlated negatively are placed on the opposite side of the circle (see Figure 5).

To test longitudinal hypotheses using Dataset 3, I will calculate cultural values based on 21 items of Human Values Scale from European Social Survey. Schwartz (2006, 2007b) confirmed that cultural values derived from Human Values Scale also support the theorized model, and the multidimensional scaling produced identical order of three bipolar cultural dimensions.

European Social Survey

Finally, as a source of cultural values and generalized trust in Dataset 3, I will use the European Social Survey (European Social Survey Cumulative File, ESS 1-6, 2014). The ESS measures attitudes, beliefs and behavioral patterns in thirty-two European countries. The ESS has been intended to produce rigorous data that can be used for comparative research by (1) having complete coverage of the national population of 15 years and older for each country sample, (2) using simple random sampling method, and (3) collecting minimum of 1500 responses per country (Häder & Lynn, 2007). These ambitious goals were met with complex reality and, therefore, not every country dataset meets these goals. For example, in several countries there was no regularly updated and complete sampling frame (such as national registers) so area-based sampling was used. Simple random sampling was possible only in nine countries, and systematic random sampling in another two states. Researchers in the other countries used multi stage stratified, clustered design. Typically, strata were formed from geographic regions and several classes of population sizes; clusters within strata were selected with the probability proportional to their population size; and individuals within clusters were selected by systematic random selection process. The ESS researchers calculated design weights for unequal inclusion probabilities (e.g. due to over-representation of single-person households) and minimum effective sample size due to clustering and non-response bias (Häder & Lynn, 2007). The ESS investigators devoted special attention to questionnaire design such as assessing constructs reliability and validity and run two large-scale national pilots using split-run, multitrait-multimethod surveys; translating by experts in questionnaire design and topics covered; and adding supplemental questions to gauge any systematic country-related errors due to possible different interpretations of certain questions (Saris & Gallhofer, 2007). The ESS data were

collected through face-to-face interviews either in paper-and-pencil or computer-assisted form (Billiet, Koch & Philippens, 2007). Commercial and non-profit survey agencies, university institutes, or national statistical institutes conducted those interviews. The ESS researchers also addressed non-response bias, and Billiet, Koch and Philippens (2007) found that the bias differed across countries, however, there were no clear effects for the outcome variables.

Measures

After describing sources of variables for statistical analysis in Study 1, now I describe each of these variables in more details.

Generalized Trust

I used three different measures of generalized trust, depending on the available sources. First, in Dataset 1 I used the most common measure of generalized trust, a dichotomous item from World Values Survey (WVS, 2009): "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?". This measure of generalized trust has been used in multiple studies (Delhey & Newton, 2005; Uslaner, 2002; Zak & Knack, 2001).

Second, to address problems with the meaning and scope of "most people" (Delhey, Newton & Welzel, 2011; Sturgis & Smith, 2010), I used a modified version of generalized trust measure in Dataset 2. The problem with the phrase "most people" is that it triggers different meaning and, thus, influences responses on generalized trust. Sturgis and Smithy (2010) have found those who think about known individuals report substantially higher trust than those who think about unfamiliar others. Therefore, Delhey et al. (2011), used additional questions on trust in family, friends, neighbors, people of another religion, nationality and people met for the first time, which were asked by the World Values Survey between 2005 and 2007, and proposed a

corrected measure. The correction accounts for "trust radius". Trust radius is an estimation of the relative connotations of "most people": radius equal to 0 means that someone thinks only about people known to him or her (e.g. friends or family), while radius equal to 1 means that someone thinks only about unknown people (e.g. people of another religion). For example, China and Switzerland have almost the same generalized trust in a response to the original question (51% vs. 55% of population trusts other people in general). However, many Chinese thought about familiar people when answering the generalized trust question in contrast to Swiss who thought mostly about unfamiliar others. Therefore, after correction, generalized trust in China becomes much lower than in Switzerland, 19% vs. 48%, respectively (Delhey et al., 2011). To verify whether the bias introduced by different meaning of "most people" is strong enough to influence the hypothesized relations, I used both version of the dichotomous measure of generalized trust.

Third, in Dataset 3, I used an instrument from the European Social Survey (European Social Survey Cumulative File, ESS 1-6, 2014) in Dataset 3. Each data wave of the ESS includes three items to measure generalized trust, where each item is an eleven-point Likert type scale. These items answer the following questions:

(1) Would you say that most people can be trusted, or that you can't be too careful in dealing with people? (0 = you can't be too careful, 10 = most people can be trusted),

(2) Do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair? (0 = most people would try to take advantage of me, 10 = most people would try to be fair), and

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(3) Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves? (0 = people mostly look out for themselves, 10 = people mostly try to be helpful).

Even though Uslaner (2002) treated these three items as different constructs, other scholars used all of them to create a scale for generalized trust. For example, Gheorghiu et al. (2009) conducted both individual and country level factor analysis and found one factor solutions for all countries with the Cronbach alpha ranging from weak .60 to strong .85, with an acceptable mean of .73. Similarly, on country level, factor analysis of country means also led to one factor solution with very strong alpha equal to .97. As another example, Reeskens and Hooghe (2008) found that three-items ESS generalized trust scale met metric invariance, which means that it refers to the same latent construct across most European countries and in time, and could be used meaningfully for comparisons between countries. In my Dataset 3, the individual-level factor analysis revealed a reliable one-factor generalized trust solution with the average Cronbach alpha between .76 and .78 across the waves, and ranging from .63 for France to .82 for Greece. Similarly, country-level factor analysis revealed a reliable one-factor solution for each wave with the average Cronbach alpha across the waves equal to .97. Therefore, I conclude that I can use the three-item generalized trust measure for the subsequent analysis. As a final note, to address missing data cases, I interpolated generalized trust in ESS Wave 3 for two countries, i.e. I calculated the mean of generalized trust from the two adjacent waves, i.e. ESS Wave 2 and 4.

Income inequality

In the cross-cultural studies, income Gini coefficient is the most frequently used one (Delhey & Newton, 2005; Uslaner, 2002). For all hypotheses related to income inequality as dependent variable, I will use after-tax-and-transfers Gini coefficient from Standardized World

Income Inequality Database, version 4.0 (Solt, 2009). There are few reasons for using after-tax-and-transfers Gini rather than pre-tax (gross) Gini coefficient. First, all scholars who claimed negative causal relation between income inequality and generalized trust used after-tax Gini, even though often they did not discuss their choice (e.g. Bjornskov, 2006; Delhey & Newton, 2005; Uslaner, 2002). Second, after-tax Gini coefficient is more appropriate in this study because, as I argued earlier, cultural values can shape tax and redistributive policies and, thus, can significantly influence after-tax income inequality. Third, the theoretical mechanisms proposed to explain the influence of income inequality on generalized trust, discussed and tested as a part of this dissertation in Study 2, assume that people's trust is shaped by their perceptions of inequality. That implies after-tax inequality, where people can see and experience differences in disposable income, after all transfers and taxes. As an illustration, Denmark, a country known for low inequality, has in fact very high pre-tax Gini coefficient of 48.4 (as of 2011, which was higher than in the US) but very low after-tax Gini of 26.1, and this is what matters for people's perceptions of inequality.

On the other hand, this is not to say that pre-tax income inequality cannot be influenced by cultural values. For example, non-redistributive government policies such as public education and public healthcare could depend on cultural values emphasized in a country (Solt, 2009). However, this study is focused on after-tax inequality that is supposed to influence people's perceptions and, subsequently, their generalized trust.

Cultural Values

The measure of cultural values depends on the dataset. In Dataset 1 and Dataset 2 I use cultural values provided by Schwartz (personal communication, 2014). I report bivariate correlations of these cultural values in Table 2.

Since Schwartz collected the data over the period of multiple years, I calculated the "middle" year for each country. For example, in Hungary the data were collected in roughly equal sample sizes in year 1990 and 1995, so I chose the "middle" year to be 1993. The information about the year when cultural values have been collected is important because I argue that cultural values influence both income inequality and generalized trust. Therefore, in Dataset 1, I made an effort for each country to match the "middle" year of cultural values to the years when income inequality Gini coefficient (Solt, 2009) and generalized trust (WVS, 2009) have been collected. I was able to get a year-to-year match for all 73 countries for cultural values and Gini coefficient. However, it was possible to match only 51 countries for cultural values and generalized trust (both variables collected within +/- five year period). For the remaining twenty-one countries I was able to get generalized trust scores that were collected between five to ten years after cultural values were assessed. In addition, for eleven countries (among all 73) I had to look for other sources of generalized trust as those countries were not included in the World Values Survey. Those other sources included European Values Study (EVS, 2011a, 2011b), LatinBarometro (2016), and World Data Atlas (2016).

In Dataset 3, I used the European Social Survey (European Social Survey Cumulative File, ESS 1-6, 2014). The ESS includes 21 items of Human Values Scale, an instrument designed by Schwartz (2007b) to capture individual level values (see Appendix A). Each item includes a brief description of a person's goals, and a respondent is asked about how much is that person like him or her, on a 6-point Likert-type scale where "1" means "Very much like me" and "6" means "Not like me at all". For example, "Thinking up new ideas and being creative is important to him. He likes to do things in his own original way". I included data from 26 countries that participated in at least three consecutive ESS waves. The items can be transformed into Schwartz'

cultural values by aggregation, and by applying a within-person correction for individual response tendency. The correction is done by subtracting the mean of all 21 items for a given individual (personal communication with prof. Schwartz, January 2014, see Appendix A). As a final note, to address two missing data cases, I imputed cultural values in ESS Wave 3 for two countries by calculating the means of these values from two adjacent ESS waves: ESS Wave 2 and Wave 4.

Control Variables

Drawing on existing studies the following controls will be used:

Ethnic heterogeneity, to control for within-country ethnic/racial heterogeneity effects on the average levels of generalized trust in that country (Alesina & La Ferrara, 2002). The data are available from Alesina et al. (2003), which reflects the probability that two randomly selected individuals belong to different ethnic group, where ethnic groups are defined based on race and, to lesser extent, on language.

Religion, measured as two separate variables equal to percent of Protestants, and Muslims, respectively, to control for possible positive effects of Protestant ethic and negative effects of Muslims seeing themselves as a community apart in a given country (Uslaner, 2002). The data on religious composition was taken from the CIA World Factbook (CIA, 2012). All non-Catholic Christians were counted as Protestant.

Advanced economy, a dummy variable set to one for advanced economies, to control for wealth effect on generalized trust (Steijn and Lancee, 2011), and for the effects of wealth, export structure, and financial integration on income inequality (Neckerman and Torche, 2007). I used the International Monetary Found indicator (IMF, 2011), which takes into account per capita income, export diversification, and degree of integration into the global financial system.

Gross Income Inequality, measured by pre-tax Gini coefficient, to control the effects of globalization, technology and economic transformations on after-tax-and- transfers income inequality (Neckerman and Torche, 2007). Gross Gini is taken from the same source as after-tax-and-transfers Gini, i.e. from Solt's database (Solt, 2009).

Bivariate correlations, means and standard deviations for all variables used in Dataset 1, Dataset 2 and Dataset 3 are reported in Table 3, Table 4 and Table 5, respectively. In addition, I summarize the sources of data for all datasets in Table 6.

Results

I did the statistical analysis in SPSS version 23. I tested cross-sectional hypotheses using generalized linear models with robust standard errors to account for linear model violations. To test longitudinal hypotheses, and to account for non-independency and heteroscedasticity of the panel data as well as non-balanced design (i.e. not equal number of observations per country), I run generalized linear mixed effects models with robust estimations of fixed effects standard errors.

The Dataset 3 used for testing longitudinal hypotheses consists of up to six data points taken every other year for each of 26 countries. I treated control variables such as country's ethnic heterogeneity, percent of Protestants and Muslims as time-invariant, which is an acceptable assumption given relatively short time frame of analysis (i.e. 12 years).

I run separate models for two sets of cultural values. The first set of cultural values consists of autonomy, egalitarianism and harmony, and the second one includes the opposite values of embeddedness, hierarchy and mastery, respectively. There are a couple of reasons for running separate models for each of these two sets of values. First, these six cultural values occupy three bipolar dimensions (Schwartz, 2011), which means that, for example, a society

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emphasizing autonomy is less likely to emphasize embeddedness at the same time. However, it is possible that characteristics of autonomy have different relations with generalized trust and income inequality than embeddedness, and this applies to other cultural dimensions, too (Schwartz, 2008; Schwartz, personal communication in June, 2016). Therefore, it might not be appropriate to treat bipolar values as exact opposites. The second reason for running separate models for these two sets of cultural values is that they are moderately and strongly correlated, what creates problems of multicollinearity. Splitting these six cultural values into two groups and running separate models solves the multicollinearity problem.

Hypotheses 1A – 1D

Hypothesis 1A proposed that autonomy is positively related to generalized trust. I tested this hypothesis using two different measures of generalized trust. In the first analysis, I used Dataset 1 that included the original measure of generalized trust (a dichotomous variable from VWS, 2009) and the results of a series of generalized linear models are reported in Table 7. In the second analysis I used Dataset 2 that included a corrected measure of generalized trust (Delhey et al., 2011), and the results of generalized linear models are reported in Table 8.

To formally test Hypothesis 1A, I looked at the coefficient of autonomy. In the case of the original dichotomous measure of generalized trust it is a positive coefficient of 9.77 and significant at p < .05 (Model 4, Table 7). In the case of the adjusted generalized trust measure it is a positive coefficient of 10.52 and significant at p < .01 (Model 4, Table 8). Therefore, I conclude that Hypothesis 1A is supported. Based on the results from the Dataset 2, the interpretation is that if Country A's autonomy score is one standard deviation higher than in Country B, then we can expect that generalized trust in Country A will be higher by 4.1

percentage points than in Country B (in other words, 4.1 % more people will trust others in general).

Hypothesis 1B proposed that embeddedness is negatively related to generalized trust. The coefficient of embeddedness in Model 5, Table 7 is not significant, however, it is negative and significant in Model 5, Table 8. Since the results in Table 8 are based on Dataset 2 that used a corrected, thus, more trustworthy measure of generalized trust, I conclude that Hypothesis 1B is supported.

Hypothesis 1C proposed that an increase of the cultural value of autonomy is related to an increase in generalized trust a few years later. Before discussing the results of the tests for longitudinal hypotheses, I have to explain that I transformed cultural value of autonomy into within- and between-country representation (Bartels, 2008). More specifically, for each country, I used a country mean as between-country representations, and deviations from the country mean as within-country representations. This transformation was necessary to make meaningful conclusion whether Hypothesis 1C could be supported or not. On the one hand, between-country cultural values representations are useful for inferences about the relations between the average scores of cultural values and the average generalized trust (such as Hypotheses 1A-B, 2A-B, and 3A-B). On the other hand, within-country representations are useful for inferences about relations between within-country changes in cultural values and within-country changes in generalized trust. Therefore, they are better suited for testing Hypotheses 1C-D, 2C-D, and 3C-D. As for random effects, I included intercepts for countries, to account for unobserved country-level heterogeneity. In addition, I assumed first-order autoregressive covariance matrix of the residuals to address serial correlation of observations within countries. The results of generalized linear mixed effects models are reported in Table 9 and 10.

To formally test Hypothesis 1C I looked at the within-country coefficients of autonomy in Model 3 and Model 4, Table 9. The difference between models lies in the specification of time lag for within-country variables and equals to 2 years and 4 years for Model 3 and 4, respectively. As I discussed earlier, Schwartz (2014) and Oyserman and Uskul (2008) argue that culture shapes individuals' beliefs and values primarily through formal and informal institutions but also through common practices, symbols and language. However, socialization takes time and even if it could be relatively quick in modern societies (Sztompka, 2002), we should expect months and years for socialization to have an effect. Therefore, to explore this time-lag relation I run two different models with two-year and four-year lag for within-country transformations of cultural values. All within-country coefficients of autonomy are nonsignificant, therefore, I conclude that Hypothesis 1C is not supported.

Hypothesis 1D proposed that an increase of the cultural value of embeddedness is related to a decrease in generalized trust a few years later. To formally test Hypothesis 1D I looked at the within-country coefficients of embeddedness in Model 3 and Model 4, Table 10. The within-country coefficient of embeddedness is negative and significant in Model 4, which means that an increase in the cultural value of embeddedness is related to decreased generalized trust four years later. Therefore, I conclude that Hypothesis 1D is supported. As a robustness check I run Model 2 and Model 3 with exactly the same cases as in Model 4 (n = 88) and received nonsignificant within-country embeddedness coefficients, which makes the significant result in Model 4 less likely an artifact of a sample selection bias.

Hypotheses 2A – 2D

Hypotheses 2A – 2D are analogous to H1A – H1D and relate to egalitarianism-hierarchy dimension. To formally test Hypothesis 2A, whether egalitarianism is positively related to

generalized trust, I verified the coefficient of egalitarianism. It was nonsignificant in Model 4, both in Table 7 (original generalized trust measure) and Table 8 (adjusted measure of generalized trust). Therefore, I conclude that Hypothesis 2A is not supported. To formally test Hypothesis 2B, whether hierarchy is negatively related to generalized trust, I looked at the coefficient of hierarchy. Since it was nonsignificant for both original and adjusted generalized trust measures (Model 4, Table 7 and Table 8, respectively), I conclude that Hypothesis 2B is not supported, either. There is also no evidence of temporal relations between egalitarianism-hierarchy dimension and generalized trust, as corresponding within-country coefficients in Model 3 and 4 in Table 9 and Table 10 are nonsignificant. Therefore, I conclude that Hypotheses 2C and 2D are not supported, either.

Hypotheses 3A – 3D are analogous to H1A – H1D, and relate to harmony-mastery dimension. To formally test Hypothesis 3A, i.e. whether harmony is positively related to generalize trust, I looked at the coefficient of harmony. It was nonsignificant in Model 4, both in Table 7 (original generalized trust measure) and Table 8 (adjusted measure of generalized trust). Therefore, I conclude that Hypothesis 3A is not supported. To formally test Hypothesis 3B whether mastery is negatively related to generalized trust, I looked at the coefficient of mastery. Since it was nonsignificant for both original and adjusted generalized trust measures (Model 4, Table 7 and Table 8, respectively), I conclude that Hypothesis 3B is not supported, either. There is also no evidence of temporal relations between harmony-mastery dimension and generalized trust, as corresponding within-country coefficients in Model 3 and 4 in Table 9 and Table 10 are nonsignificant. Therefore, I conclude that Hypotheses 3C and 3D are not supported, either.

Robustness checks for H1- H3 (A & B, only)

I run two additional models on Dataset 1 reported in Table 7. To check whether the results from Dataset 1 are sensitive to sample selection, I run Model 6 and Model 7 where I included only those countries that were also present in Dataset 2 (n = 40). In Model 6, the coefficient of autonomy was positive but became nonsignificant, the coefficient of egalitarianism became significant but contrary to the hypothesis, and harmony was positive and significant (as hypothesized). The conclusion is that when generalized trust is measured by an original dichotomous variable the coefficients of autonomy, egalitarianism and harmony are very sensitive to sample selection. That sensitivity is most likely due to an inaccuracy of the original dichotomous measure of generalized trust. This is because the results of analyses based on the other two datasets (Dataset 2 and Dataset 3), each using appropriate measures of generalized trust, are consistent. More specifically, in models based on Dataset 2 and Dataset 3 autonomy is positively related to generalized trust but egalitarianism and harmony are not related. Therefore, the conclusion is that the original dichotomous measure of generalized trust should be used with caution as it can produce misleading results.

In sum, the significant relation between autonomy-embeddedness cultural dimension and generalized trust in Hypothesis 1A-1B replicated the findings of Huff and Kelly's (2003), Gheorghiu et al. (2009) and Schwarz (2007b). The nonsignificant relation between egalitarianism-hierarchy dimension and generalized trust is consistent with results of Gheorghiu et al. (2009) but not of Schwartz (2007b). The nonsignificant relation between harmony-mastery dimension and generalized trust is consistent with results of both Gheorghiu et al. (2009) and Schwartz (2007b). Out of six longitudinal hypotheses H1C-D, H2C-D and H3C-D only one, pertaining to embeddedness, was supported. This is somehow consistent with the results of

Hypotheses H1A-B, H2A-B and H3A-B, and provides more nuanced view of the relation between autonomy-embeddedness dimension with generalized trust: it suggests that socialization could be stronger and quicker for embeddedness than autonomy.

Hypotheses 4A – 4D

Hypotheses 4A proposed that autonomy is negatively related to income inequality. In the analysis I used both Dataset 1 and Dataset 2, and the results of a series of generalized linear models are reported in Table 11.

To formally test Hypothesis 4A, I looked at the coefficient of autonomy in Model 2 (Dataset 1) as well as Model 5 (Dataset 2). In both models the coefficient of autonomy was negative and significant at $p < .01$. Therefore, I conclude that Hypothesis 4A is supported. Based on the results from Model 5, the interpretation is that if Country A's autonomy score is one standard deviation higher than in Country B, then we can expect that net income inequality Gini coefficient in Country A will be lower by 2.3 points than in Country B.

Hypothesis 4B proposed that embeddedness is positively related to income inequality. To formally test Hypothesis 4B, I looked at the coefficient of embeddedness in Model 3 and Model 6, Table 11. In both models, the coefficient of embeddedness was positive and significant (although, in Model 3, only marginally at $p < .10$). Therefore, I conclude that Hypothesis 4B is supported. Based on the results from Model 6, the interpretation is that if Country A's embeddedness is one standard deviation higher than in Country B, then the net income inequality Gini coefficient in Country A will be higher by 1.7 point than in Country B.

Hypothesis 4C proposed that an increase of the cultural value of autonomy is related to a decrease of income inequality a few years later. Hypothesis 4D proposed that an increase of the

cultural value of embeddedness is related to an increase of income inequality a few years later. I tested these hypotheses using panel data in Dataset 3 where gross income Gini coefficient was included as a control variable, and cultural values, i.e. predictors, have been transformed into within- and between-country representation (Bartels, 2008), as already described when testing longitudinal hypotheses related to generalized trust. In addition, I assumed first-order autoregressive covariance matrix of the residuals to address serial correlation of observations within countries. I did not include a random intercept because models did not converge when run in SPSS. The results of generalized linear mixed effects models are reported in Table 12 and Table 13.

To formally test Hypothesis 4C and 4D I looked at the within-country coefficients of autonomy in Model 3 and Model 4, Table 12, and the within-country coefficient of embeddedness in Model 3 and Model 4, Table 13, respectively. The difference between models lies in the specification of time lag for within-country variables and equals to two-year and for-year lag for Model 3 and 4, respectively. As I discussed earlier, scholars have found that the influence of cultural values on income inequality happens through preferred rules for rewarding performance, expectations about distribution of resources and power, and emphasis on the type of the economic system (Carson & Banuazizi, 2008; Erez, 1997; Fershtman & Weiss, 1993; Fiske, 1992; Kasser, Cohn, Kanner & Ryan, 2007; Triandis, 2002). It is less clear, however, how quick this influence happens. Therefore, I run two different models to explore this relationship. As a result, I received a nonsignificant coefficient of autonomy in both models. Therefore, I conclude that Hypothesis 4C is not supported. Similarly, I received a nonsignificant coefficient of embeddedness in both models. Therefore, I conclude that Hypothesis 4D is not supported, either.

Hypotheses 5A – 5D

Hypotheses 5A – 5D are tested in a similar way as Hypotheses 4A – 4D. Hypothesis 5A proposed that egalitarianism is negatively related to income inequality. Hypothesis 5B proposed that hierarchy is positively related to income inequality. To formally test Hypothesis 5A and 5B, I looked at the coefficient of egalitarianism in Model 2 and Model 5, Table 11, and at the coefficient of hierarchy in Model 3 and Model 6, Table 11, respectively. The coefficient of egalitarianism is nonsignificant in both models, therefore, I conclude that Hypothesis 5A is not supported. The coefficient of hierarchy is positive and significant in both models, therefore, I conclude that Hypothesis 5B is supported. Based on the results from Model 6, the interpretation is that if Country A's hierarchy score is one standard deviation higher than in Country B, then we can expect that net income inequality Gini coefficient in Country A will be higher by 1.7 points than in Country B.

Hypothesis 5C proposed that an increase of the cultural value of egalitarianism is related to a decrease of income inequality a few years later. Hypothesis 5D proposed that an increase of the cultural value of hierarchy is related to an increase of income inequality a few years later. To formally test Hypothesis 5C and 5D I looked at the within-country coefficients of egalitarianism in Model 3 and Model 4, Table 12, and the within-country coefficient of hierarchy in Model 3 and Model 4, Table 13, respectively. All coefficients are nonsignificant, therefore, I conclude that Hypothesis 5C and Hypothesis 5D are not supported.

Hypotheses 6A – 6D

Hypotheses 6A – 6D are tested in a similar way as Hypotheses 4A – 4D. Hypothesis 6A proposed that harmony is negatively related to income inequality. Hypothesis 6B proposed that mastery is positively related to income inequality. To formally test Hypothesis 6A and 6B, I

checked the coefficients of harmony in Model 2 and Model 5, Table 11, and the coefficients of mastery in Model 3 and Model 6, Table 11, respectively. The coefficient of harmony was negative and significant in both models, therefore, I conclude that Hypothesis 6A is supported. The interpretation of this result is that if Country A's harmony score is one standard deviation higher than in Country B, then we can expect that net income inequality Gini coefficient in Country A will be lower by 1.4 points than in Country B. The coefficient of mastery was positive and significant in model 3 but nonsignificant in Model 6, therefore, I conclude that Hypothesis 6B is partially supported.

Hypothesis 6C proposed that an increase of the cultural value of harmony is related to a decrease of income inequality a few years later. Hypothesis 6D proposed that an increase of the cultural value of mastery is related to an increase of income inequality a few years later. To formally test Hypothesis 6C and 6D I looked at the within-country coefficients of harmony in Model 3 and Model 4, Table 12, and the within-country coefficients of mastery in Model 3 and Model 4, Table 13, respectively. All coefficients were nonsignificant, therefore, I conclude that Hypothesis 6C and Hypothesis 6D are not supported.

Hypothesis 7

Hypothesis 7 proposed that the negative relationship between income inequality and generalized trust, reported in cross-country studies, disappears once the cultural values of autonomy, egalitarianism and harmony are controlled. To formally test Hypothesis 7, I compared coefficients of after-tax-and-transfers income inequality (Net Gini) from: (1) Model 3, 4 and 5 in Table 7; (2) Model 3, 4 and 5 in Table 8, and (3) Model 1 and 4 in Table 9. In the paragraphs below, I report the results of comparisons of all these models, and conclude about the hypothesis in the final paragraph.

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As for the first comparison of models built on Dataset 1 (Table 7), we have to note that net income inequality is indeed related to generalized trust (Model 2, Table 7) but once we control for advanced economy this relation disappears (Model 3, Table 7), and remains nonsignificant in Model 4 and Model 5 (although it is marginally significant in Model 5). Therefore, I conclude that the relation between income inequality and generalized trust observed by other scholars was in fact a confounded effect of pooling two clusters: one cluster of advanced, wealthy economies, and the other cluster of developing countries. Once this clustering was controlled the effect of income inequality became nonsignificant.

As for the second comparison of Model 3, 4 and 5 built on Dataset 2 (Table 8), net income inequality has significant (at $p < .05$) and negative relation with generalized trust (Model 2), which remains such after controlling for advanced economy (Model 3). Net income inequality becomes nonsignificant once cultural values of autonomy, egalitarianism and harmony are controlled (Model 4). However, it stays significant once cultural values of embeddedness, hierarchy and mastery are controlled (Model 5).

Finally, when comparing Model 1 and Model 4 built on Dataset 3 (Table 9), I see a pattern that resembles findings from Dataset 1. More specifically, since Dataset 3 consists of a relatively homogenous sample of European countries, mostly advanced economies, the relation between income inequality and generalized trust is nonsignificant even before entering cultural values to the models.

In addition, I run a robustness check on Dataset 1 limited to the same countries as in Dataset 2. My aim was to see whether the significant coefficient of income inequality in Dataset 2 was due to a smaller, and possible biased, sample (40 countries when compared to 73 countries in Dataset 1). However, I found that in Dataset 1 reduced to 40 countries (the same ones as in

Dataset 2) – and after including all control variables – income inequality coefficient was still nonsignificant. Therefore, I concluded that the fact of a significant income inequality coefficient in Dataset 2 was more likely due to a different, and theoretically more appropriate, measure of generalized trust than due to sample selection bias.

Taking into account the discussion in previous paragraphs, I conclude that – in the case of models using Dataset 2, where generalized trust is corrected to reflect the meaning and scope of "most people" (Delhey et al., 2011) – Hypothesis 7 is partially supported. In other words, the negative relationship between income inequality and generalized trust, reported in cross-country studies, disappears once the cultural values of autonomy, egalitarianism and harmony are controlled. However, this relationship does not disappear when the cultural values of embeddedness, hierarchy and mastery are controlled.

In the case of models using Dataset 1 and Dataset 3, I cannot draw any conclusions about Hypothesis 7 because income inequality coefficient was nonsignificant in relation to generalized trust even before entering cultural values into the models. On the one hand, it means that the prior causal claims about negative influence of income inequality on generalized trust (e.g. Uslaner, 2002) were based on mis-specified models. On the other hand, it does not mean that previous conclusions about Hypotheses 1 to Hypotheses 6 are invalid.

Study 1 Discussion

The aim of Study 1 was to test a series of hypotheses to demonstrate that the negative relation between income inequality and generalized trust claimed as causal by several scholars (Bjørnskov, 2006; Gustavsson & Jordahl, 2008; Knack & Keefer, 1997; Uslaner, 2002; Zak & Knack, 2001) was, in fact, confounded by cultural values. The study employed three different datasets: two cross-sectional datasets and one based on panel data.

To summarize the results, in cross-sectional analysis, the cultural dimension of autonomy was positively related to generalized trust and negatively related to income inequality, as hypothesized, and those results were consistent across datasets. Similarly, the cultural value of embeddedness was negatively related to generalized trust and positively related to income inequality, as hypothesized, and those results were consistent across datasets. The cultural values of egalitarianism and its bipolar counterpart, hierarchy, were not related to generalized trust. Egalitarianism was not related to income inequality, either. However, hierarchy was positively related to income inequality, as hypothesized. The cultural values of harmony and its bipolar counterpart, mastery, were not related to generalized trust. However, harmony was negatively related to income inequality and mastery was positively related to income inequality, as hypothesized. In the panel data analyses, it has been found that the cultural dimension of embeddedness was negatively related to generalized trust as measured four years later. Temporal changes in other dimensions were not related to generalized trust and income inequality measured four years later. Finally, in one of the models for generalized trust based on Dataset 2, I found that once cultural dimensions were included in the model, the coefficient of income inequality became nonsignificant, which makes previous claims about casual negative relation between income inequality and generalized trust unwarranted. I could not make the same conclusions for models based on Dataset 1 and Dataset 3 because income inequality was nonsignificant even before cultural dimensions were included in the model.

There are several conclusions from these results. First, the autonomy-embeddedness dimension plays a dominant role as a cultural value that relates to generalized trust. Recalling Schwartz' theory (Schwartz, 2011), cultural values reflect the underlying forces how people cope with three basic societal problems: (1) creating and maintaining boundaries between a person

and a group, (2) coordinating people's activities in a way that preserves social fabric, and (3) managing human and natural resources used in those activities. The autonomy-embeddedness dimension addresses the first problem, and defines whether individuals in a given society should be treated primarily as autonomous and unique entities or as embedded in and identified through social groups they belong to. These two choices are incompatible and only one of them can be dominant in a society (Schwartz, 2011). The significant and dominant relation of the autonomy-embeddedness dimension to generalized trust, as demonstrated in this empirical study, reaffirms theoretical arguments that autonomy and independence from a group facilitate the development of generalized trust and make it more relevant for the existence and thriving of an autonomous than an embedded society (Schwartz, 2008; Yamagishi & Yamagishi, 1994; Yamagishi, 2011).

Second, the egalitarianism-hierarchy and harmony-mastery dimensions did not show any relationships with generalized trust. It could mean that once the autonomy-embeddedness dimension creates a basis for the development (or suppression) of generalized trust other cultural dimensions have little additional effects on trust. We have to keep in mind that Schwartz' (2011) cultural model is circular, meaning that adjacent values are related to each other and may have similar implications (see, for example, bivariate correlations in Table 2). As for the egalitarianism-hierarchy dimension, it relates to different ways how societies elicit individuals' commitment to cooperation and responsible, productive behaviors (Schwartz, 2011), which overlap with autonomy-embeddedness implications for trust, namely the existence of social mechanisms (or lack thereof) that guarantees mutual cooperation. As for harmony-mastery dimension, it focuses its attention on the extent to which societies desire to control and change their natural and social environments, which may have some implications for trust but these effects are most likely too small to be detected in this study.

Third, another important finding of this study is that within-country changes of embeddedness are negatively related to generalized trust measured four years later. To author's best knowledge, this is one of the first studies demonstrating specific temporal effects of a cultural dimension on generalized trust. This empirical evidence corresponded to scholars' expectations that culture, a relatively stable societal characteristics, may change in time, albeit very slowly (House et al., 2004, Sztompka, 2007). The time needed for generalized trust to be affected by changes in embeddedness is found to be four years. Such delay seems plausible, and confirms expectations that socialization takes years rather than months to affects people's beliefs and attitudes. Future research should explore why similar relations have not been found for autonomy and the other two cultural dimensions of egalitarianism-hierarchy and harmony-mastery. One explanation for why autonomy was unrelated to generalized trust years later could be the fact that it takes more time for short-term changes of autonomy to be reflected in generalized trust. Another reason could be that short-term effects of embeddedness are stronger than the effects of autonomy. As for the lack of temporal relations between the other two cultural dimensions and generalized trust, one of the possible explanations, as discussed in the previous paragraph, could be the fact that autonomy-embeddedness has the strongest implications for the relationship with generalized trust and overshadows the effects of other dimensions.

Fourth, in most models based on Dataset 1 and Dataset 2 both the autonomy-embeddedness and harmony-mastery dimensions relate to net income inequality. This result strengthen theoretical expectations that income inequality should be lower in societies scoring higher on autonomy and harmony than in societies scoring higher on embeddedness and mastery, due to higher level of collaboration in the market, lower pressures to meet expectations of financial success, and greater need for maintaining smooth relations and avoiding conflict

(Schwartz, 2011; Kasser et al., 2007; Uslaner, 2002). The results from Dataset 1 and Dataset 2 were confirmed by the results based on Dataset 3 but only for the cultural values of autonomy, embeddedness and mastery. The fact that the cultural value of harmony was not related to income inequality in Dataset 3 was most likely due to homogeneity of the sample in regard to this cultural value (i.e. the standard deviation of harmony, as a percentage of the mean, in Dataset 3 was four time smaller when compared to Dataset 1 and 2).

Fifth, the cultural value of egalitarianism turned out to have a nonsignificant relationship with income inequality, while its polar counterpart, hierarchy, was positively and significantly related to income inequality in Dataset 1 and Dataset 2. The nonsignificant coefficient of egalitarianism looks like a surprise, especially if we take into account that inequality is at the core of the egalitarianism-hierarchy dimension. Recalling theoretical arguments, Schwartz (2011) proposed that in egalitarian societies people are more likely to treat each other as moral equals and to express concern for the welfare of others, which facilitate development of more equal societies, also in terms of income distribution. On the other hand, Fiske (1992) suggested that in hierarchical societies inequalities in wealth and social status are legitimate and higher that in egalitarian societies. Future studies should explore why only hierarchy turned out to have significant relationship with income inequality while its polar counterpart, egalitarianism, did not. One possible explanation is that egalitarianism represents aspirations for equal opportunities, fair justice system and honest and loyal relationships with other people rather than expectations of equality of income or wealth. On the other hand, societies valuing hierarchy make unequal distribution of status and power as taken for granted and legitimate. Moreover, people in hierarchical societies are encouraged to gain status by becoming wealthy, thus, creating strong societal incentives for income inequality. Another possible explanation is that the other adjacent

values of autonomy and harmony have picked up some aspects of egalitarianism, which seems plausible due to moderate correlations between egalitarianism, autonomy, and harmony (see Table 2 and 3).

Finally, only a model based on Dataset 2 supported Hypothesis 7 that proposed that the negative relationship between income inequality and generalized trust would disappear once the cultural values were controlled. Models in Dataset 1 and Dataset 3 revealed that income inequality coefficient was nonsignificant after control variables and before cultural values were included. Additional analysis reported earlier suggested that, at least in the case of Dataset 1, the fact of nonsignificant income inequality coefficient was due to a different and theoretically less appropriate measure of generalized trust. In sum, there are a few conclusions from testing Hypothesis 7. First, the fact that the relation between income inequality and generalized trust was nonsignificant in Dataset 1 and Dataset 3 before entering cultural values into the models, does not invalidate earlier inferences on Hypotheses 1 to Hypotheses 6. Moreover, these results demonstrate that the claims for the casual relation between income inequality and generalized trust (e.g. Knack & Keefer, 1997; Uslaner, 2002; Zak & Knack, 2001) are unwarranted. Second, further studies are needed to assess the impact of different measure of generalized trust on the coefficients of its predictors. It is worth to note that the coefficients of cultural values of autonomy, egalitarianism and harmony were sensitive to different measures of generalized trust.

CHAPTER 4: Study 2, Inequality and Trust at the Individual Level

As discussed in Chapter 1, scholars such as Bjørnskov (2006), Delhey and Newton (2005), Gustavsson and Jordahl (2008), Knack and Keefer (1997), Uslaner (2002) and Zak and Knack (2001) have observed, on the aggregate level, negative relationship between income inequality and generalized trust. In Chapter 3, I argued and empirically demonstrated that the observed relationship, and so the causality many assume, is confounded by cultural values. Here, in Chapter 4 I discuss Study 2 and test two individual-level mechanisms, i.e. social similarity and inference about social relations, proposed by Delhey and Newton (2005), Knack and Keefer (1997) and Uslaner (2002) to explain the observed (aggregate-level) relationship between income inequality and generalized trust. In this study, I switch to an individual-level, single-country analysis because the proposed mechanisms operate on this level, and their theoretical underpinnings are Western-centric, which does not allow for cross-cultural conclusions.

Existing Causal Mechanisms

Scholars have proposed several theoretical mechanisms that mediate the effects of income inequality on generalized trust. In a review of the relevant literature, Jordahl (2007) classified four such mechanisms: (1) social similarity, (2) inference about social relations, (3) conflict over resources, and (4) opportunity cost of time. In the following paragraphs I focus on the first two mechanisms, relate them to arguments made by Bjørnskov (2006), Delhey and Newton (2005), Gustavsson and Jordahl (2008), Knack and Keefer (1997), Uslaner (2002) and Zak and Knack (2001), and root them in existing literature on social categorization and justice. Finally, I introduce system justification as a moderator of these two mediation mechanisms and propose formal hypotheses about moderated mediation.

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Social Similarity Mechanism

Social similarity is claimed as the most important causal mechanism explaining the relationship between income inequality and generalized trust (Jordahl, 2007). It means that people are "more willing to trust those who are similar to themselves, including in terms of income and wealth" (Jordahl, 2007, p. 4). Bjornskov (2006, p. 5) claims that "anything that reduces the social distance between the citizens of a country could be expected to lead to more trust", and list income inequality and ethnic heterogeneity as the reasons for increased social distance and, thus, for less trust. Delhey and Newton (2005, p. 312) argue that "the greater the perceived similarity of other people, the more they are trusted. The greater the dissimilarity, the more suspicion and distrust. Therefore, the more homogenous a society, the higher its trust, and vice versa", and uses income inequality and ethnic fractionalization as signs of social heterogeneity. Gustavsson and Jordahl (2008, p. 348) claim "Differences between people seem to generate distrust", and also use income inequality and ethnic heterogeneity as a measure of differences between people. Knack and Keefer (1997, p. 1278) argue "In polarized societies, individuals are less likely to share common backgrounds and mutual expectations about behavior, so it is more difficult to make self-enforcing agreements", and used income inequality and ethnic heterogeneity as proxy for social polarization. Uslaner (2002, p. 181) writes that "the rich and the poor have little reason to believe that they share common values, and thus they might well be vary of others' motives". Finally, Zak and Knack (2001) propose that trust would be lower in societies where social distance between people is larger, and demonstrate that Gini coefficient for income inequality and ethnic heterogeneity are negatively related to trust. All of the aforementioned arguments imply that social distance has to be internalized or perceived people to affect their generalized trust. In the context of income inequality, it implies that people are

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able to perceive income disparities, and the greater these inequalities are, the lower generalized trust people have.

The arguments that social similarity breeds generalized trust and social distance decreases generalized trust sound convincing and are supported by common experiences of bonding and trusting to those who are similar rather than different from us. This is because familiarity (closer social distance to others) provides better knowledge and incentives for trustworthiness of those who are socially close to each other (Hardin, 2006). Moreover, I argue that social similarity argument implicitly draws on the theory of social categorization (Tajfel & Turner, 1986; Ashforth & Mael, 1989), even though Jordahl (2007) and other scholars do not explicitly reference it. According to the social categorization theory, members of a group (in-group members) may perceive the members of other groups (out-group members) as less trustworthy, especially when there is a competitive interdependence between the groups such as conflict of interests, values incongruence and competition for resources (Kramer, 1999; Williams, 2001). Indeed, there is empirical evidence for this assertion. For example, Muethel and Bond (2013) have reported that people in collectivistic countries, who tend to identify strongly with their in-group, express lower trust towards out-groups such as people of different religion, nationality and people met for the first time.

However, the underlying assumption of this social similarity mechanism is that the particular identity on which the parties are similar has to be salient (Cropanzano & Stein, 2009; Riketta, 2005). In a review of empirical studies, Cropanzano and Stein (2009) suggested that the salience of social identity is important for preferential treatment of in-group versus out-groups members: "In essence, we allow our social identities to circumscribe our behavior. Loosely, we may say that there are rules for people who lie within our "moral community" (…) and different

rules for those who lie outside of it". In this vein, studying a culturally homogeneous sample, Riketta (2005) has found that people are more likely to ascribe negative traits to the members of out-group when they identify strongly with their in-group.

If Cropanzano and Stein (2009) and Riketta (2005) are right, the strength of social similarity mechanisms will depend on whether income inequality leads to stronger identity based on wealth or income, for example an identity of belonging to the poor versus the rich. Even though theory and evidence about social identity suggest that demographics are the strongest identity drivers, with race or ethnicity being the primary social identity (McPherson, Smith-Lovin & Cook, 2001; Mollica, Gray & Trevino, 2003), there are studies showing that income-based identity can also become more salient (Schmitt, Branscombe & Kappen, 2003). More specifically, McPherson et al. (2001) list education and occupation, which are potential sources of identity related to income inequality, only after race, ethnicity, age and religion. Similarly, Mollica et al. (2003), who studied differences in network formation between racial minorities and majority, reported that most frequently participants chose race (above gender and religion) as the primary social identity. On the other hand, Schmitt et al. (2003) reported that, when thinking about inequalities in general, white undergraduates in the Mid-West American university mention social class, which is primarily measured by income and education (Costa-Lopez et al., 2013), as the second most frequently referenced group. Therefore, it is plausible to expect that when the information about income inequality becomes more salient and accessible – for example, through frequent media coverage or personal experience – income-related social identity will become stronger or more frequent. Such situation is especially likely in times where people perceive income inequalities as a reason for unhealthy competition for resources and conflict of interests between different groups in a society. It could have been recently the case of

the US, where journalists, scholars and even the President have pointed out dangers of high income inequality (e.g., Luce, 2014; Kuper, 2014; Stiglitz, 2012).

Inference about Social Relations

The second proposed causal mechanism, inference about social relations, suggests that people perceive income inequality as "a sign of exploitation, i.e. of untrustworthy behavior" and others' unfairness, what, in turn, leads to lower generalized trust (Jordahl, 2007, p. 4). Scholars argue that inequality may be perceived as unfair, both in outcomes and procedures. In particular, Uslaner (2002) writes:

> If everyone is poor, we're all in the same boat together an there is no reason to
> believe that others have exploited you to get where they are (which is where you
> are). Inequality, on the other hand, gives you evidence that some people may well
> be out to get you – hence that trust may not be a good risk. (p. 253)

He also adds "those at the bottom have little reason to believe that they will get a fair shake" (Uslaner, 2002, p. 181). Finally, Rothstein and Uslaner (2005, p. 52) argue "In highly unequal societies, people are likely to stick with their own kind. Perceptions of injustice will reinforce negative stereotypes of other groups, making social trust and accommodation more difficult". Zak and Knack (2001) have provided some evidence for inferences on social relations mechanism, and found that perceptions of economic discrimination (although for non-economic reasons such as age, gender, race discrimination) are related to lower trust in a society. As another example, Gustavsson and Jordahl (2007) have demonstrated that people who believe that income inequality is unfair and who prefer more equal distribution of income have lower generalized trust than those who do not perceive inequalities as unfair.

Although not explicitly referenced by Jordahl (2007), inference about social relations mechanism seem to draw on justice literature, particularly related to distributive and procedural justice. In general, justice is primarily seen as a subjective construct, viewed from the perspective of a recipient, where distributive justice represents fairness of outcomes, and procedural justice relates to the fairness of procedures that led to the outcomes. Distributive justice depends on the rules, which are used to determine fairness of outcomes, such as equity (one's outcomes should be proportional to one's inputs), equality (everybody get the same outputs regardless of his or her inputs) and need (distribution of outcomes depends on people needs and not their inputs) (Colquitt et al., 2001). On the other hand, procedural justice depends on the fairness of procedures that led to the outcomes, where procedure is perceived as fair when it is: (1) applied consistently across people and time, (2) free of personal bias, (3) based on accurate information and opinions of groups affected by the procedure, (4) correctable by some mechanisms, and (5) does conform to standards of ethics or morality (Colquitt et al., 2001).

Moreover, fairness is one of the most fundamental human needs necessary for cooperation and reciprocity, and its lack may undermine trust (Costa-Lopes, Dovidio, Pereira & Jost, 2013; Ferris, Spence, Brown & Heller, 2012; Schmitt, Baumert, Gollwitzer & Maes, 2010). In the management literature, scholars have found that fairness positively influence trust in a manager and organization (Colquitt, LePine, Piccolo & Zapata, 2012; Pillai, Schriesheim & Williams, 1999; and reviews by Colquitt et al., 2001; Pearce, Branyiczki & Bigley, 2000). On the other hand, a recent longitudinal study reported non-significant relationships between distributive and procedural justice and trust (Colquitt & Rodell, 2011). However, Colquitt and Rodell (2011) used a more nuanced model where trust and trustworthiness were separated, and trust was conceptualized as *willingness to be vulnerable* in contrast to *positive expectations*

about others used in other papers. Interestingly, Colquitt and Rodell (2011) have found that procedural justice is significantly and positively related to integrity, one of trustworthiness dimensions. Both integrity and generalized trust are conceptually closer to trust defined as positive expectations about others (Colquitt & Rodell, 2011; Nannestad, 2008), and strongly correlated with each other as reported in experimental studies (Sapienza, Toldra-Simats & Zingales, 2013). Therefore, we may expect by analogy that perceptions of fairness of procedures that led to inequality (i.e. economic and political systems) relate positively to generalized trust.

However, it is not clear why or when income inequality is perceived as unfair. Uslaner (2002, p.181) and Steijn and Lancee (2011) argue that, in the context of income inequality, those with low income believe that they are not getting a *fair shake*. However, they do not specify why it might be the case. One reason could be that inequality aversion is socially constructed because people tend to avoid being over- or under-rewarded relatively to others, taking into account their effort and the outcomes they achieved (Adams, 1963; Choshen-Hillel & Yaniv, 2011; Fehr, Naef & Schmidt, 2006). Another reason could be the differences in terms of inequality preferences, i.e. some people put more effort than would be necessary to achieve certain outcomes, while others prefer to receive more output than would be expected from a given effort (Huseman, Hatfield & Miles, 1987; Schmitt, Baumert, Gollwitzer & Maes, 2010). People also differ in terms of inequality sensitivity, i.e. some people perceive the same stimulus as fair while others perceive it as unfair (Jeon, 2011; Hatfield, Salmon & Rapson, 2011; Oyserman & Lee, 2008).

Regardless of these differences in preferences and sensitivity, people are able to assess how different groups fare in a society. Munz & Mondak (1997) have found that when people see the change in the economic situation of disadvantaged groups is not happening in the same direction as for the rest of society, they perceive such growing inequalities as unfair and blame

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incumbents by voting against them in the next elections. Nonetheless, there is a question: why people who perceive income inequality as unfair would blame people in general (strangers, unknown others) for the existing inequalities and, as a consequence, trust them less? In the case of organizations, we have a clear situation: when employees perceive a manager behaving unfairly, he or she is to blame, and they have reasons not to trust him or her anymore. So, why in the case of income inequality people would resent against unspecified others? Drawing on Rothstein (2000), one can argue that it is because people would perceive income inequality as an outcome of an unfair social, political, and economic systems. The frustration with unfair systems leads people to compensate by focusing on trust-based networks with their families and closed friends (Rothstein & Stolle, 2008), effectively developing so called particularized trust. When this particularized trust grows, generalized trust is unlikely to develop because these close relationships discourage cooperation with strangers, especially when formal monitoring and sanctioning systems are expected to be unfair and, effectively, nonexistent (Yamagishi et al., 1998). In addition, when people believe that the economic system supported by state institutions is unfair, they are more likely to believe that others can get away with opportunistic behavior and, thus, more likely to conclude that others cannot be trusted (Rothstein & Stolle, 2008).

System Justification as a Moderator

While scholars have proposed that social similarity and inferences about social relations mediate the negative relation between income inequality and generalized trust, they have not discussed boundary conditions for that relationship. I propose to include system justification as a moderator. System justification is a socio-psychological mechanism that explains people's motivated tendencies to justify, support and perpetuate social, economic and political systems that produce inequalities (Costa‑Lopes, Dovidio, Pereira & Jost, 2013; Trump, 2013). In the light

of system justification theory, the negative relation between income inequality and generalized trust could become much weaker or even turn positive when system justification tendencies are high.

System justification is defined as a "process by which existing social arrangements are legitimized, even at the expense of personal and group interest" (Jost, Banaji & Nosek, 2004, p. 883). System justification differs from other similar concepts and theories such as status quo bias and social identity theory. While status quo bias is a tendency to treat any deviation from status quo as a loss, system justification is a desire to see the existing social systems in positive light (Proudfoot & Kay, 2014). System justification differs from social identity theory because it posits that people are not only motivated to maintain their self-esteem through identifying with and belonging to socially valued groups but also to see in the positive light their social, economic and political systems (Proudfoot & Kay, 2014). Moreover, in contrast to system justification theory, social identity theory fails to explain empirical evidence of outgroup favoritism (Jost et al., 2004) as well as lack of interest to challenge the status quo by those who are worst off in society (Toorn et al., 2015).

System justification could manifest both unconsciously and through cognitive efforts to justify the existing state of affairs such as judging likely events as more desirable, stereotyping groups to justify differences between them, and defending and justifying the social systems when its existence is threatened, even when one belongs to a disadvantage group (Jost et al., 2003, 2004). People are motivated to engage in system justification as it "helps people avoid the psychological threat or anxiety produced by acknowledging that the system they are embedded in may be flawed, corrupt, or otherwise suboptimal" (Proudfoot & Kay, 2014, p. 174). Further, this motivation could stem from "basic epistemic, existential, and relational needs, including

needs to reduce uncertainty, manage threat, and uphold a sense of socially shared reality" (Toorn et al., 2015, p. 3). In the case of income inequality, even if people perceive it as too high, they are likely to justify it by "exaggerating [its] virtues, downplaying [its] vices, and seeing the societal status quo as more fair and desirable than it actually is" (Costa-Lopez et al., 2013, p. 233).

In the context of this study, system justification implies that negative relationships between income inequality and generalized trust could be much weaker for individuals with strong system justification tendencies. More specifically, in the case of social similarity mechanism, the individuals with strong system justification tendencies will be less likely to perceive income inequality as a reason for unhealthy competition for resources and conflict of interests between different income-related social groups and, thus, they will be less likely to identify with these groups and, consequently, not likely to believe that others are less trustworthy. Therefore, formally stated:

Hypothesis 8: The relationship between perceived income inequality and generalized trust, partially mediated by social similarity, will be weaker when system justification tendencies are high compared to when they are low.

Similarly, in the context of the other mediation mechanism of inference about social relations, individuals with high system justification tendencies will be less likely to perceive income inequality as unfair and as a sign of exploitation by others and, thus, less likely to decrease their trust towards other people. Therefore, I propose:

Hypothesis 9: The relation between perceived income inequality and generalized trust, partially mediated by inferences about social relations, will be weaker when system justification tendencies are high compared to when they are low.

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Figure 6 shows the conceptual model for Hypothesis 8 and 9. A direct link between income inequality and generalized trust is included in the model to explain any remaining effects after accounting for social similarity and inferences on social relation (this could reflect, for example, the mechanisms of conflict over resources and the opportunity cost of time, which are not studied in this research, as discussed below).

Conflict over Resources and Opportunity Cost of Time

In the literature, there are two additional causal mechanisms proposed to explain the relationship between income inequality and generalized trust: conflict over resources, and the opportunity cost of time. However, I will not test these two mechanisms because previously discussed mechanisms of social similarity and inference on social relations, have received most attention in existing research (Bjornskov, 2007; Delhey & Newton, 2005; Gustavsson & Jordahl, 2007; Zak & Knack, 2001), and they are claimed to be the strongest explanations for the negative relationship between income inequality and generalized trust (Jordahl, 2007; Uslaner, 2002). Moreover, conflict over resources seems to share some underlying assumptions with social similarity mechanism, and the opportunity cost of time has mixed theoretical implications and does not have clear empirical support. More specifically, conflict over resources means that the poor have economic incentives to cheat the rich and, therefore, are not trusted by the rich (Jordahl, 2007). It also implies political struggles for public goods, which derail solidarity between different groups in a society (Jordahl, 2007; Knack & Keefer, 1997), and increase rent-seeking activities (Knack & Keefer, 1997). In this vein, Delhey and Newton (2005) proposed that social strain or internal conflicts would be detrimental to trust. Even though they have found that civil wars were correlated with lower generalized trust, that relationship disappeared once ethnic heterogeneity had been controlled for. Since the lack of solidarity between different

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societal groups shares the underlying assumption with social similarity mechanism, i.e. that strong identity with one's (ethnic) group is related to lower trust towards members of other (ethnic) groups (Alesina & La Ferrara, 2002), it suggests that some of the expected effects of conflict over resources are already accounted for by the social similarity mechanism.

The remaining causal mechanism, the opportunity cost of time, suggest that people's trust is sensitive to their incomes (Jordahl, 2007). More specifically, Jordahl (2007) draws on the argument of Zak and Knack (2001) who proposed that a decrease of a certain amount in wages of the poor would decrease their trust more than the growth of the same amount in wages of the rich would increase their trust. This occurs, they argue, due to the difference in the relative impact of the same amount of salaries on the wellbeing of the rich and the poor. Zak's and Knack's (2001) further assumed that the poor will end up having lower generalized trust because they perceive income distribution as unfair and as a sign of exploitation by others. Therefore, it is plausible to expect that at least a portion of the effects of "the opportunity cost of time" is already accounted for by the inference on social relation mechanism.

Method

Study 2 is designed as an experimental, single-country, individual-level test of the two mechanisms that were suggested by the existing literature to explain the negative relation between income inequality and generalized trust, i.e. social similarity and inference about social relation. Study 2 is a single-country study because its primary goal is to test psychological mechanisms that has been initially proposed for the US (Uslaner, 2002), and only later used for cross-cultural studies (Jordahl, 2007).

Sample

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Participants were recruited through Amazon Mechanical Turk in April 2015. Recent analyses have shown that MTurk can be used to collect high quality data when workers with good reputation are hired (Peer, Vosgerau & Acquisti, 2013). Buhrmester, Kwang and Gosling (2011) have demonstrated that MTurk provides more diverse sample that allows more confident generalization than typical American college samples used for experiments, that the data from MTurk are at least as reliable as from traditional sources, and that compensation levels do not affect data quality. In addition, Aguinis and Lawal (2012) observed that MTurk improves confidence regarding the nature of causal relationships, and addresses other challenges such as participant bias. Even though some challenges were reported, such as not honest responses about the current location or possible smaller effect sizes for experienced MTurk workers (Stewart et al., 2015), an overall conclusion is that MTurk is a good source of data (Shapiro, Chandler & Mueller, 2013).

I limited the pool of subjects to those who registered at Mechanical Turk with a US address and, following good practices in the field, had a history of more than 1000 submitted work requests with at least 97% acceptance rate. In total, 237 participants started the survey and 224 completed it. This difference is primarily due to the fact that some participants could not finish their survey because it was closed once it reached the requested number of responses. The estimated time needed for completion was six minutes. Participants who answered all questions received sixty cents.

As for the quality of data, three respondents did not provide usable responses (e.g. they did not pay attention to reverse coded questions and provided $1 as an annual salary for each of the seven occupations), so they were deleted from further analysis. In addition, after checking for duplicated Internet Protocol addresses, I found that two respondents apparently submitted the

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survey twice, so their later responses were excluded from the analysis. As a result, subsequent statistical analyses have been done based on responses from 219 participants. All these 219 participants correctly responded to a quality-checking question (i.e. selecting a predetermined answer).

The average age of all participants was 33 years, 30% of them were women, and 51% of them attended college. Seventy percent of subjects identified themselves as White, 8% were Hispanic, 12% were Black, 6% were Asians and 4% identified themselves as others. As for household income, 60% of participants lived on less than $50,000 per year, and the average household size was 2.45 persons. In Table 14 below, subjects' demographic data are shown separately for each experimental condition.

I also report other sample characteristics for both experimental conditions. In Table 15 below, I include system justification beliefs and estimated salaries for seven occupations, which were collected before the manipulation took place. Those two groups agreed very well on average annual salaries of skilled factory worker, doctor in general practice and member of the cabinet in the federal government.

In Table 15, I also reported the perceived income inequality reported by the subjects before the manipulation took place. To calculate income inequality from the income data on six occupations, I follow procedures used by Osberg and Smeeding (2006) and Trump (2013). More specifically, I calculated an income inequality index equal to natural logarithm of the income ratio of the highest earning occupation to the lowest earning occupation (in most cases it was the ratio between chairman's and unskilled worker's salary).

Data Collection Procedure

Participants started their survey through Amazon Mechanical Turk website and, after giving consent, they were sent to a survey on the Qualtrics platform. The survey consisted of several sections (see Appendix B). First, all participants answer questions about system justification beliefs (a moderating variable). Then, subjects have been randomly assigned to one of the two conditions. In the first, low inequality condition, subjects read the information about alleged annual incomes for six occupations, which were lower than actually exist in the US (i.e. the highest to lowest salary ratio in this condition was 100:1 compared to 625:1 in reality). In the second – "high inequality" – condition, subjects read similar information but with higher numbers than in reality (i.e. the highest to lowest salary ratio in this condition was 917:1). I determined lower and higher salaries drawing on existing studies (Trump, 2013) and a pilot study. Subsequently, subjects answered questions related to generalized trust, social identity, perceptions of fairness of inequality and a few demographic questions.

Missing Data

By survey design participants were forced to provide all answers, except for demographics. However, out of 2652 total entries for questions related to salaries, there were eight cells with salary equal to zero (any number equal or greater to zero was acceptable as an answer). The pattern of missing data does not look random, i.e. only salaries of CEOs and members of federal cabinet are set to 0. However, the percentage of missing data is very small (0.3% of all salary-related cells), therefore, I replaced them with the average salary for an occupation, given experimental condition.

Measures

All of the measures in this study have been used in previous research. In this section I assess convergent and discriminant validity of these measures as well as their reliability.

System justification beliefs (moderator)

To measure system justification beliefs I used an eight-item, six-level Likert-type scale developed by Lipkus, Dalbert and Siegler (1996). That scale is a modified version of the Global Belief in a Just World Scale (Lipkus, 1991) and has been adapted in the literature to gauge general beliefs about system justification (Jost, Banaji & Nosek, 2004; Trump, 2013). I reverse coded two questions as a quality check for the data obtained through an online survey. Those two reverse-coded questions were: (1) *I feel that people do treat each other fairly in life*, and (2) *I feel that people do treat each other with the respect they deserve* and – similarly to other questions – had six levels of agreement from "strongly disagree" to "strongly agree".

Exploratory factor analysis with varimax rotation, reported in Table 16, revealed two-factor structure. The six normally-coded questions clearly loaded on one factor, and the two reverse-coded items formed the other factor. All loadings were greater than .63, and cross-loadings were smaller than .47, as reported in the table below. One of the reasons for the two-factor structure could be the fact that those two items were reverse coded. The other reason could be that they were more concerned about how people treated others rather than how fair was "the world".

To preserve unidimensionality of a scale (Clark & Watson, 1995), I retained only six items that loaded on the first factor. The reliability of this six-item system justification scale meets recommendations for social science research (Nunnally, 1978), as its Cronbach's alpha

equals to .90. The mean value of system justification is 3.2 (close to "somehow disagree") and the standard deviation is .97.

Generalized Trust (DV)

I used two measures of generalized trust. The first one is a single-item commonly used in different studies such as the European Social Survey and the World Value Survey: "*Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?*", with a dichotomous answer: "*Most people can be trusted*" or "*Need to be very careful*" (WVS, 2009). Table 17 provides basic statistics for generalized trust. In total, forty-five percent of subjects responded that most people can be trusted, and fifty five percent chose otherwise. In high inequality condition 50% of subjects trusted most people, while in low inequality conditions it was only 41%. The difference was counterintuitive and against hypothesized direction, however, chi-square test showed that difference was not statistically significant.

The second measure of generalized trust is a three-item scale consisting of questions about trust in (1) people met for the first time, (2) people of other nationality and (3) people of other religion. These questions have been introduced in the recent round of the WVS (WVS, 2009), and are used here as a supplemental measure of generalized trust to address concerns about the validity of the single-item measure (Nannestad, 2008; Delhey, 2011). The Cronbach's alpha of this scale equals to .83. Table 18 provides basic statistics for this scale. Similarly to one-item measure of generalized trust, there was no statistical difference of three-item scale's means across experimental conditions.

Income-related Social Identity

To measure income-related social identity, I drew on Mollica et al. (2003) and Schmitt et al. (2003), and asked participants to rank order five out of fifteen social identities including race, ethnicity, gender, age, religion, occupation, political affiliation, low income, middle income, high income, the poor, lower middle class, middle class, upper middle class, and the rich. The last eight identities are income-related and will constitute one of the mediators in this study. After running descriptive statistics it became clear that in this sample income related identities are relatively infrequent when compared to social identities based on age, gender or race (see Table 19). For example, about seventy percent of participants chose age or gender as one of the five most important identities; however, only 23 percent of subject selected middle class as one of their important identities. This is inline with existing studies on social identity, which demonstrate that race, ethnicity, age and gender are the most salient identities (McPherson et al., 2001; Mollica et al., 2003).

Since participants chose income-related identities relatively infrequently (to that extent that chi-square test cannot be reliably run due to very low expected counts in some cells), I decided to create an aggregate income-related identity. The aggregation has been done for each subject by selecting the highest rank of all income-related identities reported by that subject. For example, if a subject selected the following identities: gender (1st rank), middle class (2nd), race (3rd), political affiliation (4th) and middle income (5th), the aggregated income-related identity measure indicated 2nd rank (gender as not income-related identity remained as 1st rank). To justify the aggregation I draw on Riketta (2005) and Cropanzano and Stein (2009), who found that people are more likely to treat their in-group members preferentially when their in-group identity is more salient (i.e. more important than others, as could be measured by the rankings of

identities). Therefore, people with any salient and accessible income-related identity (such as upper middle class) are more likely to ascribe negative traits to people not belonging to that particular group. This attitude, in turn, should lead to lower trust to the members of out-groups (Muethel and Bond, 2013), such as low middle class, and the poor. See Table 20 for the basic statistics of the combined measure of income-related social identity. In high inequality condition 63.5 percent of subjects ranked at least one of the income-related identity, while in low inequality conditions it was 65.4 percent. The chi-square test showed that difference in aggregate rankings between experimental conditions was not statistically significant.

For the subsequent analysis, I reversed the scale of the aggregated income-related measure, so 1 means "Not ranked", 2 means "5th Rank", 3 means "4th Rank" and so on. "Not ranked" means that a subject did not chose any income-related identity among five identities that he or she ranked. The rationale is that the effects of social identity are stronger when identification is more salient (Riketta, 2005). For example, in the context of unequal distribution of resources, Jaśko and Kossowska (2013) have found that stronger (more salient) identification with a low-status group was related to decreased legitimacy of unequal distribution of resources. However, that effect was attenuated when a superordinate identity was evoked. A superordinate identity is a common, higher level identity, and in the context of income inequality, a superordinate group for the poor could be nationality, race, ethnicity or religion.

Inference about Social Relations (Fairness of inequality)

To measure perceptions of income inequality fairness, I used the following items from Global Social Survey (questions 2 and 5 below) and Trump (2013): "*For each of the sentences I'd like you to tell me whether you strongly agree, somewhat agree, somewhat disagree, or strongly disagree. (1) Differences in income in America are too large*, (2) *Inequality continues to*

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exist because it benefits the rich and powerful, (3) Large differences in income are necessary for America's prosperity, (4) The rich pay too much in taxes, (5) Generally speaking, business profits are distributed fairly in the United States."

Exploratory factor analysis with varimax rotation revealed two-factor structure. Items 1, 2 and 4 strongly loaded on one factor (all loadings higher than .80), item 3 loaded on the second one, and item 5 cross-loaded (i.e. loaded at .32 or more on both factors) as reported in Table 21. Therefore, for the subsequent analysis only the three items clearly loading on the first factor were retained. The reliability of this three-item scale meets recommendations for social science research (Nunnally, 1978), as its Cronbach's alpha equals to .87. In high inequality condition, income inequality fairness' mean value was equal to 3.36, and in low inequality condition, it was equal to 3.39, which means that, on average, respondents agree that income inequality is too large. Welch's t-test showed no significant difference between those means (t = .27, df = 217, p = .79). Bivariate correlations, means and standard deviations for all variables used in the analysis are reported in Table 22.

Results

Manipulation Check

To assess whether income inequality manipulation was successful, I compared the difference in preferred income inequality across conditions. I followed procedures used by Osberg and Smeeding (2006) and Trump (2013), and calculated a preferred income inequality index as a natural logarithm of the preferred income ratio of the highest to the lowest earning occupation (in most cases it was the ratio between chairman's and unskilled worker's salary). It was expected that information treatment would modify people's preferences through, inter alia, psychological mechanism of status quo bias (Trump, 2013) such that information about higher

income inequality would lead to higher preferred income ratios. Indeed, subjects in low inequality condition preferred significantly lower income inequality than subjects in high inequality condition (see Table 23).

Hypotheses Testing

To test the hypotheses I used PROCESS Procedure for SPSS Release 2.15 (Hayes, 2012). The PROCESS macro is capable of running an ordinary least squares and logistic regression-based path analysis to estimate direct and indirect effects, with bias-corrected bootstrap confidence intervals. In general, to fully support moderated mediation hypotheses it is necessary to demonstrate that (1) conditional indirect effects are significant (Hayes, 2012), and that (2) the index of moderated mediation is significant (Hayes, 2015). Using the statistical model of hypothesized relationships, as depicted in Figure 7, this means that (1) indirect effects $\omega_1 = (a_{11} + a_{31} \times W) \times b_1$ and $\omega_2 = (a_{12} + a_{32} \times W) \times b_2$ have to be significant at different values of the moderator W; and that (2) the indices of moderated mediation $a_{31} \times b_1$ and $a_{32} \times b_2$ have to be significant. The PROCESS macro uses 95% bootstrap confidence intervals as the evidence for significance of indirect effects and for the significance of the index of moderated mediation.

Using this approach to mediation – such as described by Hayes (2012) – it is not necessary to have significant total effect, contrary to the traditional method by Baron and Kenny (1986). The reason is that, in reality, there could be multiple mediating mechanisms at play that may cancel each other. For example, in this study, the total effect of perceived income inequality on generalized trust is non-significant ($\chi^2 = 1.84$, df = 1, p = .18), as reported in Measures section. However, it does not make further analyses unnecessary, because there might be other mechanisms not hypothesized here, which can work in the opposite direction to those tested in

this study. In addition, there is a possibility that system justification is such a strong moderator that it cancels out the effects of social similarity and inference on social relations.

Hypothesis 8

Hypothesis 8 proposed that the negative relationship between perceived income inequality and generalized trust, mediated by social similarity, is moderated by system justification beliefs such that the relation is weaker when system justification tendencies are high compared to when they are low. In the first analysis I used a dichotomous measure of generalized trust and the regression results are reported in Table 24. To formally test Hypothesis 8, I looked first at the confidence intervals of indirect effects of income inequality on generalized trust through social similarity at three different values of the moderator (i.e. system justification, measured at the mean and plus/minus one standard deviation from the mean), as reported by PROCESS macro (See Table 25). For all three values of the moderator the 95% confidence intervals of indirect effects $\omega_1 = (a_{11} + a_{31} \times W) \times b_1$ included zero, which means that there is no evidence of mediation of the effects of income inequality on generalized trust through social similarity. Second, I checked the 95% confidence interval of the index of moderated mediation $(a_{31} \times b_1)$. Its confidence interval [-.06, .10] included zero, which means that there is no evidence of the moderation of the mediation of income inequality's effects on generalized trust through social similarity.

In the second analysis of Hypothesis 8 I used a Likert-type measure of generalized trust and the result of OLS regressions are reported in Table 26. As in the previous analysis, I checked the 95% confidence intervals for indirect effects of income inequality on generalized trust $\omega_1 = (a_{11} + a_{31} \times W) \times b_1$, as reported in Table 27, and the 95% confidence interval of the index of moderated mediation $(a_{31} \times b_1)$, which equaled to [-.05, .01]. All those confidence intervals

included zero, which means that there is no evidence of mediation and no evidence of moderated mediation, either. Therefore, I conclude that Hypothesis H8 is not supported for both measures of generalized trust.

Hypothesis 9

Hypothesis 9 propose that the negative relation between perceived income inequality and generalized trust, mediated by inference on social relations, is moderated by system justification tendencies such that the relation is weaker when system justification tendencies are high compared to when they are low. In the first analysis I used a dichotomous measure of generalized trust and the result of OLS and logistic regression are reported in Table 24. To formally test Hypothesis 9, I looked first at the 95% confidence intervals of indirect effects of income inequality on generalized trust through inference on social relations at three different values of the moderator (i.e. system justification, measured at the mean and plus/minus one standard deviation from the mean), as reported by PROCESS macro (see Table 25). For all three values of the moderator the 95% confidence intervals of indirect effects $\omega_2 = (a_{12} + a_{32} \times W) \times b_2$ included zero, which means that there is no evidence of mediation of the effects of income inequality on generalized trust through inference on social relations. Second, I checked the 95% confidence interval of the index of moderated mediation ($a_{32} \times b_2$). Its confidence interval [-.04, .09] included zero, which means that there is no evidence of the moderation of the mediation of income inequality's effects on generalized trust through inference on social relations.

In the second analysis of Hypothesis 9 I used a Likert-type measure of generalized trust and the result of OLS regressions are reported in Table 26. As in the previous analysis, I checked the 95% confidence intervals for indirect effects of income inequality on generalized trust through inference on social relations, $\omega_2 = (a_{12} + a_{32} \times W) \times b_2$, reported in Table 27, and the 95%

confidence interval of the index of moderated mediation ($a_{32} \times b_2$), which equaled to [-.01, .03]. All those confidence intervals included zero, which means that there is no evidence of mediation and no evidence of moderated mediation, either. Therefore, I conclude that Hypothesis 9 is not supported for both measures of generalized trust.

Exploratory Analyses

Even though hypothesized moderated mediations turned out to be nonsignificant for both measures of generalized trust, there is some evidence for moderation of direct effects when generalized trust is measured by a Likert-type scale. More specifically, the interaction coefficient of income inequality and system justification ($c_3{}'$) is significant at $p < .05$ (as reported in Table 12) indicating that there could be other mechanisms, not hypothesized in this study, through which income inequality influences generalized trust. More detailed analysis of the conditional direct effect based on PROCESS macro and reported in Table 28 below shows this effect is significant only when system justification beliefs are low (at or below one standard deviation from the mean). This moderation effect is illustrated on Figure 8.

In low inequality condition, system justification beliefs are positively related to generalized trust ($c_2{}' = -.15$, $p = .016$) such as that an increase of one standard deviation in system justification beliefs is related to higher generalized trust by one quarter of its standard deviation. The interpretation of this relationship is that people, who perceive their social and economic system as a fair place where individuals are rewarded (and punished) according to their effort (or lack of thereof), are more optimistic and have greater trust towards other people. But this would only hold in low inequality condition, i.e. when people are confronted with income inequality that is close to their expectations and acceptance. On the other hand, in high inequality condition, this relation is attenuated and becomes nonsignificant ($c_2{}' + c_3{}' = .03$, p

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= .66). The main effect of income inequality is present only when system justification is low (at least smaller or equal to one standard deviation below its mean). Here, the interpretation would be that people confronted with higher income inequality seem to have greater trust in others but only when their system justification beliefs are low. This paradoxical finding seems consistent with the literature on the legitimation of social inequalities where scholars have found that those belonging to the most disadvantaged groups tend to express out-group favoritism (e.g. trust in other people) to the greater extend than those belonging to less disadvantaged groups (Jost et al., 2004). Of course, the assumption here would be that people with low system justification beliefs are more likely to belong to disadvantage groups (such as those who do not get a fair share in the economy), than those with higher system justification beliefs, but such assumption seems plausible.

Finally, it is necessary to comment on the nonsignificant overall F-test for the model ($F_{5,213} = 1.62$, $p = .16$). In principle, nonsignificant F-test means that we cannot exclude the possibility that all parameter estimates are zero, which makes the model not very useful for prediction. On the other hand, discrepancy between individual t tests and the overall F test does not necessarily make earlier interpretations of conditional direct effects unwarranted. This is because the statistical model as discussed here and depicted on Figure 7 includes two nonsignificant parameters and three others that are significant just below $p = .05$ level, so when they are all combined together the overall F-test could become nonsignificant. Moreover, econometricians will argue that "The F statistic is intended to detect whether a set of coefficients is different from zero, but it is never the best test for determining whether a single coefficient is different from zero." (Wooldridge, 2015, p. 149). Since we are interested in a single interaction coefficient, it is appropriate to interpret this coefficient regardless of the overall F-test.

Study 2 Discussion

This study has been designed to test theoretical mechanisms of social similarity and inference on social relations, which were proposed by several scholars (Gustavsson and Jordahl, 2007; Uslaner, 2002; Zak and Knack, 2001) to explain the negative relation between income inequality and generalized trust. First, it is necessary to underline that the negative relation between income inequality and generalized trust was observed on a societal level (either between countries or within a country over time). However, those proposed mechanisms operate on an individual level and as such has not been tested in the literature. To the best knowledge of the author, this is the first attempt to validate those mechanisms at the level they operate.

I was unable to reject null hypotheses about those two mediation mechanisms. The first one, social similarity, was proposed to mediate the negative relation between income inequality and generalized trust because of stronger identification with one's income-related social group, which leads to less trust towards people not belonging to that group (so other people in general). However, I obtained nonsignificant results for that mediation. The second mechanism, inference on social relations, proposed to mediate the negative relation between income inequality and generalized trust through feelings of unfairness of the economic and social systems, which discourages cooperation with others and leads to less trust toward other people. However, I obtained nonsignificant results for that mediation, too. In addition, hypothesized moderation of those two mediations was not supported, either. Unfortunately, these null results do no allow for any interesting conclusions, except for not being able to reject the null hypotheses.

I can only speculate about why I obtained nonsignificant results. First and foremost, it is plausible that these theoretical mechanisms are inadequate. We have to remember that the negative relation between income inequality and generalized trust was observed on country

(societal) level but theories to explain that phenomenon were applied to the individual (personal) level. Therefore, it created a possibility of ecological fallacy, i.e. drawing incorrect individual-level inferences about human attitudes from societal-level data. It would be more acceptable to explain that observed relationship on the same level, as I have attempted in Study 1, where I proposed culture as explanatory variable behind the observed negative correlation between income inequality and generalized trust. Nevertheless, in the light on null results for hypothesized relations and significant results for conditional direct effects of income in equality on generalized trust there is a need to discuss and test alternative models. For example, income-related social identity may moderate rather than mediate the relation between income inequality and generalized trust. There are two premises for such hypothesis: (1) research on system justification demonstrated that people from low-status groups react differently to inequality and discrimination than people from high-status groups (Jost et al., 2004), and (2) there were no significant differences of social identity rankings between experimental conditions in this study, which suggest that income-related social identity is not a response to inequality but rather a response to actual and specific economic situation of an individual.

Second, theoretical mechanisms may be correct but the measures I used to capture these mechanisms are not adequate. For example, system justification measure (a moderator) is correlated with the measure of fairness of inequality (a mediator) with $r = .42$ at $p < .01$, which could create bias in statistical analysis but it is also questionable from theoretical point of view. As another example, instead of forced selection of social identities participants should have been allowed to give their own choices, too. Perhaps they would have been more adequate in describing and capturing identities related to income inequality.

Third, theoretical mechanisms and measures may be correct but there was not enough power in the statistical analysis to detect significant results. One of the reasons for low power could be the use of rank-order variables such as social similarity (operationalized by the ranking of five most important identities), generalized trust and perceptions of income inequality fairness (four level Likert-type scales yielding 9 distinct values – ordered categories – in the data). Taylor, West & Aiken (2006) have studied the impact of categorization and its distribution on the power to detect the effect of independent variables. They found that for the outcome variable represented by five categories the power to detect the effect was .75 for symmetric distribution and .49 for skewed distribution (skewness = 2.5 and kurtosis = 5.4), compared to the power of .80 for a baseline model with a continuous variable. Since generalized trust in this study has nine categories and its distribution is symmetrical (skewness = .23, kurtosis = .07), there should not be substantial loss in the power to detect the effects of independent variables. We may worry more about the ranking of identities, with six categories (including one for no identity). However, its distribution is not that skewed, either (skewness = .06, kurtosis = -1.6).

Fourth, it is possible that the manipulation was too weak or short-lived to influence people's social identity, their perception of fairness of inequality and their generalized trust. On the one hand, manipulation check demonstrated that people across experimental conditions differed on perceptions of acceptable (fair) salaries for six different occupations and that difference was in expected direction. On the other hand, there were no significant differences across conditions on generalized trust, social identities and perceptions of income inequality fairness.

Finally, it may be that the manipulation was strong enough but there are yet to be discovered mechanisms linking income inequality and generalized trust that work in the opposite

directions and that make the total effect nonsignificant. A hint for this interpretation could be found in the additional analysis of conditional direct effects, where there was a significant effect of income inequality on generalized trust but only when system justification was low.

CHAPTER 5: Conclusions

This dissertation focused on the previously claimed causal relation between income inequality and generalized trust, and addressed that phenomenon with two studies testing two mutually exclusive theories. As such, the expectation was that only one of those theories would be supported empirically, and this is what exactly happened.

In the first study I proposed an alternative explanation of a country-level negative relation between income inequality and generalized trust, which was observed in recent years (Bjørnskov, 2006; Delhey & Newton, 2005; Gustavsson & Jordahl, 2008; Knack & Keefer, 1997; Uslaner, 2002; Zak & Knack, 2001). More specifically, I argued that the relation between income inequality and generalized trust was confounded by the exogenous influence of cultural values on those two societal-level characteristics. On the other hand, in the second study, I drew on the existing theoretical arguments that tried to explain the observed negative relation between income inequality and generalized trust, and expanded its theoretical base by including literature from social identity theory, justice, and system justification theory.

As for the first study, in the series of hypotheses tested using three different databases I confirmed the validity of the alternative model: some cultural values are indeed related to both generalized trust and income inequality and their effects are in the opposite directions, as hypothesized. Moreover, I found the evidence that cultural values influence generalized trust over time, as hypothesized. These latter findings make casual claims about the exogenous influence of cultural values on generalized trust even more justified. In sum, the results of Study 1 demonstrated that "what seem to be related (interdependent) phenomena are in reality uncorrelated (independent) phenomena" (Davis, 1971, p. 322). As for the second study, I obtained nonsignificant results for the two theoretical mechanisms explaining why people

perceiving higher income inequality would have lower generalized trust. While these null results do no allow for any strong conclusions, they are coherent with the fact that the alternative theory of cultural values influencing both income inequality and generalized trust tested in Study 1 was supported. On the other hand, these null results are inconsistent with the theories of social similarity and inference about social relations suggested by Knack and Keefer (1997), Uslaner (2002) and Zak and Knack (2001) to explain how income inequality influences generalized trust.

There are a couple of implications of these results for theory and practice. First, significant relationships between cultural dimension of autonomy-embeddedness and generalized trust, between autonomy-embeddedness and income inequality as well as between harmony-mastery and income inequality may imply that scholars should routinely include cultural values in cross-cultural research. Otherwise, theories and statistical models could be mis-specified. This conclusion should not be surprising if we agree that cultural values represent central tendencies of the normative system prevailing in a given society (Schwartz, 2008), and that they are responsible not only for the cross-cultural differences in values and attitudes such as generalized trust but also for the differences in the ways social institutions are organized such as whether or not higher income inequality is accepted or promoted.

Second, a significant negative relation between within-country changes of embeddedness with generalized trust measured four years later imply that scholars should be more careful when theorizing about cultural values and their relations with other phenomena in time. More specifically, researchers should no longer assume that cultural values change very slowly and, therefore, have no temporal effects on other variables of interest. In the light of Study 1 results, even four years could make a difference in inferences about a relationship between variables. In addition, inconsistent results for egalitarianism-hierarchy in models based on Dataset 1 (see

discussion on robustness check models) may also suggest that the relationships between cultural values and variables of interest are sensitive to whether they were all measured at the same time or not, which is crucial for cross-cultural research.

Third, cultural values that form bipolar dimensions cannot be routinely treated as exact opposites. In the light of the empirical results from Study 1, scholars should not theorize about cultural values that represent opposite tendencies and are incompatible as having opposite relations with a phenomenon. For example, hierarchy was positively related to income inequality. However, egalitarianism, its polar opposite, was not. The reasons for this inconsistency require further studies. One of the plausible explanations could be that even though certain aspects of hierarchy (such as legitimatization of status and wealth differences) relate to income inequality, contrasting tendencies reflected in egalitarianism (such as expectations for equal opportunities and fair and equal treatment of others) do not relate or are too weak to form significant relationships with income inequality.

Fourth, the support for the theory of cultural values exerting exogenous influence on income inequality and generalized trust provide valuable insights for policy makers, too. Implications of the existing literature encouraged to fight income inequality, for example with distributive policies, in a hope of increasing generalized trust. However, in the light of the results of Study 1, these efforts are probably unproductive. Authorities and policy makers cannot just lower income inequality, for example, by introducing progressive tax systems, and expect that generalized trust will increase as a result of lower income inequality. The results of Study 1 such as significant relationships between cultural dimension of autonomy-embeddedness and both generalized trust and income inequality make these expectations unrealistic. Instead, policy makers should acknowledge that income inequality and generalized trust are both the results of

underlying culture, as demonstrated by significant relation of the autonomy-embeddedness cultural dimension with both generalized trust and income inequality. Therefore, in countries where low generalized trust is perceived as a problem, policy makers should rather focus on creating laws, rules and formal institutions, which will facilitate assurance (as defined by Yamagishi & Yamagishi, 1994 and discussed in Chapter 3) and, thus, complement lower levels of generalized trust. On top of that, through public institutions such as education, law and justice, local governments, etc., authorities could emphasize some aspects of autonomy, egalitarianism, and harmony and deemphasize some of the aspects of embeddedness, hierarchy and mastery, and thus facilitate the process of trust-supporting socialization. Whether this is possible and manageable in a short-term focused world of politics is out of the scope of this paper and requires further research and small-scale pilot implementations.

Future Studies

There are plenty of opportunities for future studies related to the theory of cultural values as exogenous variables explaining country-level relations between constructs that are interesting from theoretical and practical points of view. In the context of income inequality and generalized trust, the literature will benefit greatly by studying panel data from longer periods. In one of the follow up studies I will use new waives from the European Social Survey to get better understanding of temporal relations between cultural values, income inequality and generalized trust. In addition, there is some evidence that income inequality relation to generalized trust could be contingent on some yet to discover factors (i.e. recall the sensitivity of income inequality coefficient when a control for advanced economy was included in the models). Further studies with larger sample size could test more nuanced theories and possible moderating mechanisms.

As for the null findings from Study 2, it will be interesting to conduct more tests of the modified theoretical mechanisms explaining individual-level relation between perceptions of income inequality and generalized trust. For example, in addition to system justification, additional moderating variables such as "ego justification" and "group justification", and their interactions, could be tested (Jost et al., 2004). Perhaps, in some situations, system justification tendencies are suppressed by the other two justification mechanisms and income inequality can have indeed a negative influence on generalized trust. As another example, system justification literature provides some hints for social similarity working as a moderator, and not as a mediator as hypothesized in Study 2. More specifically, Jost and Thompson (2000) found that members of low status group (in the case of income inequality it could be the poor, the low income, and perhaps low middle class) can exhibit outgroup favoritism (thus, their general trust is expected to be higher) compared to high status groups (such as the rich, the middle and high income, the middle class) that can exhibit ingroup favoritism (which, by definition, can lead to lower generalized trust).

In addition, an alternative, individual-level theory parallel to the one discussed in Study 1 could be developed and tested as a follow-up to Study 2. More specifically, based on the findings from Study 1 one can hypothesize that cultural values influence individual perceptions of income inequality and individual generalized trust. To test this individual-level theory one would run a series of experiments where subjects would be primed by opposing cultural values to see whether it had any effects on perceptions of income inequality and generalized trust. Such individual-level test, if supported, would further strengthen the societal-level findings of Study 1, and would provide a stronger case for an alternative explanation for the observed relationship between income inequality and generalized trust, claimed by some scholars (e.g. Uslaner, 2002) as causal.

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TABLES

Table 1

Empirical evidence for the relationship between income inequality and generalized trust

1. Source 2. Sample & Data Sources 3. Main findings	Limitations
1. Knack & Keefer, 1997 2. 29 countries, cross-sectional; WVS[4] Wave 1-2, World Dev. Report, Milanovic (1994) 3. Income inequality is negatively associated with generalized trust	1. The quality of income inequality data might be questioned, as the sources of income inequality in different countries might not be reliable (Deininger & Squire, 1996). In addition, it's not clear whether income inequality Gini coefficient is based on gross or net income[1]. 2. None of their regression models includes all of the relevant independent variables[2]. 3. Conclusions for policy makers implied causal relationship between income inequality and generalized trust: "*Our findings also reinforce the case for reducing income disparities in developing countries*" (Knack & Keefer, 1997: 1282)[3].
1. Zak & Knack, 2001 2. 41 countries, cross-sectional; WVS Wave 1-3, Deininger and Squire (1996) 3. Greater social distance, proxied by income inequality, is negatively related to generalized trust.	1. Even though Zak & Knack (2001:314) are confident about their model, they are more cautious when interpreting their test results[3]: "*While these findings on associations between trust and formal institutions and social distance are consistent with our model, they are presented here as preliminary tests that do not fully resolve causality issues. For example, cohesive and trusting societies may more easily agree on an efficient, stable set of property rights, or on policies to reduce inequality and discrimination*". 2. It's not clear whether income inequality Gini coefficient is based on gross or net income[1].
1. Uslaner, 2002 2. Repeated, cross-sectional US data; US Dept. of Commerce, GSS[5], ANES[6] 3. Income inequality accounted for two thirds of decline of generalized trust in the US from early 1960s to late 1990s	1. It's not clear whether Gini was based on gross or net income[1]. 2. There were only two other variables in the equation namely election year (dummy), and public mood[2]. 3. Gini coefficient is based on the data from the US Department of Commerce, which changed the way how Gini is calculated in 1993. Thus, the last 6 years of data cannot be reliably compared with pre-1993 data.
1. Uslaner, 2002 2. 22 countries, cross-sectional; WVS Wave 1-2, Deininger and Squire (1996), World Bank 3. Income inequality is a significant determinant of generalized trust.	1. Post-communists countries were excluded, as they obscured the results. Therefore, the sample is biased. 2. The effects sizes are very small: the change from low inequality of .25 (e.g. Finland) to very high inequality of .6 (e.g. Brazil) is responsible for only .002 change in trust which ranged from .5 (Finland) to .05 (Brazil). 3. The issue of endogeneity is addressed by 2SLS method. The direction of causality is claimed from income inequality to generalized trust[3].

1. Delhey & Newton, 2005	1. It's not clear whether Gini was based on gross or net income[1].
2. 60 countries, WVS Wave 2-3, UNHDR[7]	2. Even though the authors tested many variables, none of their regression models includes all of the relevant independent variables[2].
3. Income inequality is a statistically significant determinant of generalized trust.	3. Gini coefficient is the weakest of all other determinants of such as Protestantism, quality of government and national wealth.
1. Bjørnskov, 2006	
2. 76 countries, cross-sectional; WVS Wave 3-4, Danish Social Capital, Deininger & Squire (1996)	1. It's not clear whether Gini was based on gross or net income[1].
3. Income inequality is the strongest determinant of cross-country differences in generalized trust.	2. Bjornskov (2006) explicitly addressed potential endogeneity problems, i.e. he estimated income inequality using two stage least squares (2SLS) method with instrumental variables of GDP per capita and political ideology of the government, and concluded that income inequality is causally related to generalized trust[3].
	1. Gini coefficient (gross and after-tax) didn't have a significant relationship with generalized trust.
1. Gustavsson & Jordahl, 2008	2. Results may suggest that what matters for generalized trust is how the poorest part of the society (10th percentile) is doing relatively to the median (50th percentile). This effect was doubled when measured for after-tax income vs. pre-tax income, what suggests that consumption potential is more important that nominal earnings. However, it may be a sign of endogeneity[1].
2. 21 Swedish counties, panel data from 1994 & 1998; Swedish Election Studies	
3. Income inequality measured by the ratio of the 50th to the 10th percentile of income earners is **negatively** related to generalized trust. However, the ratio 90/50 is **positively** related to generalized trust.	3. However, the income ratio 90/50 had positive effect on generalized trust, i.e. the more income inequality in the top comparing to the median of income distribution, the higher generalized trust. The authors have not addressed this counterintuitive finding. 4. Gustavsson & Jordahl (2008) addressed endogeneity directly, i.e. they estimated income inequality using two 2SLS method with instrumental variables of international demand for different industries. However, 50/10 ratio was only marginally significant at $p < .1$, and none of the 2SLS models include both income ratios of 50/10 and 90/50[2]. Nevertheless, authors concluded that income inequality is causally related to generalized trust.

[1] It may pose a risk of endogeneity, since some scholars argue that distribution policies are affected by generalized trust (Rothstein & Stolle, 2008). Also, if after-tax income inequality is used it creates a favorable bias towards developed countries, as the role of distributive taxes is smaller in developing countries (Deininger & Squire, 1996). [2] This is a problem of omitted variables (Kennedy, 2008), i.e. the regression coefficients of independent variables are most likely biased.

[3] Causal claims are not justified given cross-sectional data.

[4] World Values Survey

[5] General Social Survey

[6] American National Election Studies

[7] United Nations Human Development report

Table 2

Study 1, Dataset 1 & 2: Cultural Values, Descriptive Statistics and Correlations

	Variable	Mean	SD	1	2	3	4	5
1	Autonomy	3.89	.42					
2	Embeddedness	3.78	.39	-.93**				
3	Egalitarianism	4.68	.27	.43**	-.55**			
4	Hierarchy	2.35	.45	-.49**	.51**	-.54**		
5	Harmony	4.03	.30	.36**	-.43**	.34**	-.58**	
6	Mastery	3.94	.16	.07	.09	-.20	.41**	-.40**

** $p < .01$, n = 73

Table 3

Study 1, Dataset 1: Descriptive statistics and correlations

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	Generalized trust	26.07	13.98												
2	Gross Gini	42.67	8.06	-.13											
3	Net Gini	35.89	9.99	-.42**	.69**										
4	Autonomy	3.89	.42	.49**	-.16	-.54**									
5	Egalitarianism	4.68	.27	.18	-.11	-.16	.43*								
6	Harmony	4.03	.30	.14	-.19	-.39**	.36**	.34**							
7	Embeddedness	3.78	.39	-.45**	.19	.53**	-.93**	-.55**	-.43*						
8	Hierarchy	2.35	.45	-.23	.23	.56**	-.49**	-.54**	-.58**	.51**					
9	Mastery	3.94	.16	.07	-.07	.15	.06	-.20	-.40*	-.09	.41**				
10	Ethnic diversity	.38	.25	-.36**	.30*	.48**	-.53**	-.25*	-.25*	.58**	.31**	-.06			
11	% Protestant	16.12	22.75	.44**	.16	-.14	.27*	.23*	.10	-.29*	-.22	-.08	-.09		
12	% Muslim	17.37	31.28	-.12	.27*	.35**	-.48**	-.19	-.32**	.58**	.28*	-.06	.30**	-.26*	
13	Adv. Economy	.42	.50	.51**	-.30*	-.62**	.63**	.45**	.27*	-.68**	-.44**	-.01	-.51**	.29*	-.40**

* $p < .05$, ** $p < .01$, n = 73

Table 4

Study 1, Dataset 2: Descriptive statistics and correlations

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	Generalized trust	16.64	12.17												
2	Gross Gini	43.80	6.71	-.07											
3	Net Gini	36.61	9.59	-.49**	.76**										
4	Autonomy	3.97	.39	.62**	.04	-.46**									
5	Egalitarianism	4.68	.30	.37*	.18	-.25	.54**								
6	Harmony	4.03	.30	.36*	-.14	-.44**	.45**	.52**							
7	Embeddedness	3.74	.37	-.58**	-.07	.42**	-.92**	-.68**	-.49**						
8	Hierarchy	2.33	.47	-.41**	.27	.63**	-.47**	-.59**	-.62**	.45**					
9	Mastery	3.95	.16	-.20	.15	.36*	-.22	-.37*	-.59**	.13	.58**				
10	Ethnic diversity	.36	.23	-.33*	.21	.51**	-.38**	-.32*	-.38*	.49**	.28	.15			
11	% Protestant	18.19	5.01	.68**	.17	-.22	.37*	.35*	.17	-.39*	-.32	-.20	-.19		
12	% Muslim	16.45	30.95	-.19	.04	.28	-.39*	-.33*	-.20	.53**	.26	.08	.24	-.26	
13	Adv. Economy	.40	.50	.62**	-.14	-.59**	.64**	.59**	.31	-.69**	-.45**	-.15	-.50**	.49**	-.36*

* p < .05, ** p < .01, n =40

Table 5

Study 1, Dataset 3: Descriptive statistics and correlations

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1	Generalized trust	5.09	.88											
2	Gross Gini	41.86	5.18	.14										
3	Net Gini	28.97	4.47	-.38**	.50**									
4	Autonomy	6.06	.18	.69**	.15	-.43**								
5	Egalitarianism	6.65	.16	.65**	.23**	-.28**	.65**							
6	Harmony	6.60	.15	.16	-.18*	-.21*	.25**	.29**						
7	Embeddedness	6.11	.16	-.74**	-.24**	.31**	-.88**	-.54**	-.07					
8	Hierarchy	5.17	.27	-.47**	-.08	.29**	-.65**	-.74**	-.39**	.39**				
9	Mastery	5.37	.17	-21*	.05	.32**	-.43**	-.56**	-.53**	.09	.37**			
10	Ethnic diversity	.22	.16	-.21*	-.59**	.12	-.14	-.20*	.28**	.20*	.10	-.08		
11	% Protestant	23.17	29.92	.81**	.19*	-.41**	.51**	.61**	.16	-.57**	-.39**	-.20*	-.33**	
12	% Muslim	3.14	4.08	.06	.35**	.46**	.06	-.01	-.26**	-.24**	.06	-32**	.00	-.03

* $p < .05$, ** $p < .01$, n = 141 (after listwise deletion)

Table 6

Study 1, Summary Information About Datasets

Variable	Dataset 1 n = 73		Dataset 2 n = 40 (subset of Dataset 1)		Dataset 3 n = 141 (panel data)	
	Source	Matched[1]	Source	Matched[1]	Source	Matched[1]
Generalized trust	WVS	Y[2]	Delhey	Y	ESS	Y
Gross Gini	Solt	Y	Solt	Y	Solt	Y
Net Gini	Solt	Y	Solt	Y	Solt	Y
Autonomy	Schwartz	Y	Schwartz	N	ESS	Y
Hierarchy	Schwartz	Y	Schwartz	N	ESS	Y
Harmony	Schwartz	Y	Schwartz	N	ESS	Y
Ethnic diversity	Alesina	N	Alesina	N	Alesina	N
% Protestant	CIA	N	CIA	N	CIA	N
% Muslim	CIA	N	CIA	N	CIA	N
Adv. Economy	IMF	N	IMF	N	n/a	n/a

[1] This column identifies variables that have been collected in the same year (Y/N) in a given dataset.

[2] True for 51 countries where generalized trust was collected within +/-5 years comparing to other variables. For the remaining 22 countries generalized trust was collected within +/- 5 to 10 years comparing to other variables.

References for sources:
WVS: WVS, 2009
Delhey: Delhey, Newton & Welzel (2011)
Solt: Solt, 2009
Schwartz: Personal communication with Prof. Schwartz, August 2014
ESS: European Social Survey Cumulative File, ESS 1-6 (2014)
Alesina: Alesina et al. (2003)
CIA: CIA, 2012
IMF: IMF, 2011

Table 7

Study 1, Dataset 1, Results of Generalized Linear Models for Generalized Trust[1]

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6[2]	Model 7[2]
Constant	20.54** (4.22)	41.44** (5.69)	30.29** (7.72)	24.28 (35.87)	27.66 (50.07)	65.39 (40.18)	11.69 (62.27)
Ethnic diversity	-10.46 (6.52)	-12.28* (5.97)	-8.19 (6.41)	-5.13 (6.7)	-4.53 (6.c81)	-.12 (9,11)	5.74 (7.74)
% Protestant	.22** (.07)	.26** (.07)	.23** (.07)	.22** (.07)	.23** (.07)	.26** (.07)	.29** (.07)
% Muslim	0.08^{+} (.05)	0.07 (.05)	0.09^{+} (.05)	.12* (.05)	.12* (.06)	.02 (.06)	.07 (.08)
Adv. Economy	10.83** (3.50)		8.19* (3.50)	7.58* (3.13)	5.99^{+} (3.52)	11.94* (4.87)	1.57 (4.91)
Net Gini		-.45** (.16)	-.27 (.17)	-.17 (.20)	$-.37^{+}$ (.21)	-.03 (.22)	-.55* (.23)
Autonomy				9.77* (4.41)		8.05 (5.07)	
Egalitarianism				-7.09 (5.52)		-26.44** (7.58)	
Harmony				-.91 (4.29)		10.78* (5.41)	
Embeddedness					-8.20 (7.12)		-10.09 (7.53)
Hierarchy					4.07 (5.53)		7.70 (6.91)
Mastery					6.70 (10.61)		11.76 (15.39)
Likelihood Ratio Chi-square	37.1**	34.5**	39.7**	45.5**	44.6**	44.6**	27.53**
Degrees of freedom	4	4	5	8	8	8	8
Akaike's Information Criterion	566	568	565	566	567	398	319
Bayesian Information Criterion	580	583	582	589	590	417	336

$^{+}$p < .10, *p < .05, **p < .01

[1] Unstandardized coefficients with robust standard errors in parentheses. Generalized trust measured by an original variable (WVS, 2009), n = 73.

[2] As robustness checks, Model 6 and 7 include the same countries as in Dataset 2 (n = 40).

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Table 8

Study 1, Dataset 2, Results of Generalized Linear Models for Generalized Trust[1]

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	9.14** (3.32)	27.80** (5.67)	20.18** (4.38)	-18.66 (16.35)	66.10 (45.80)
Ethnic diversity	-3.61 (6.93)	-2.96 (7.60)	-.08 (7.42)	1.29 (6.60)	4.52 (7.11)
% Protestant	.25** (.07)	.29** (.05)	.26** (.06)	.25** (.06)	.26** (.06)
% Muslim	0.04 (.03)	0.03 (.04)	0.04 (.04)	.06 (.04)	.09[+] (.05)
Adv. Economy	9.25** (3.79)		6.39* (3.24)	4.35 (2.92)	1.61 (3.21)
Net Gini		-.44* (.18)	-.31* (.15)	-.20 (.15)	-.43* (.17)
Autonomy				10.52** (3.86)	
Egalitarianism				-4.84 (4.34)	
Harmony				3.95 (3.61)	
Embeddedness					-13.02* (5.73)
Hierarchy					2.50 (4.13)
Mastery					.14 (9.23)
Likelihood Ratio Chi-square	35.1**	35.4**	38.6**	46.9**	45.6**
Degrees of freedom	4	4	5	8	8
Akaike's Information Criterion	289	289	288	285	287
Bayesian Information Criterion	300	299	300	302	304

[+]$p < .10$, *$p < .05$, **$p < .01$

[1] Unstructured... Unstandardized coefficients with robust standard errors in parentheses. Generalized trust measured by a corrected variable (Delhey et al., 2011), n = 40.

Table 9

Study 1, Dataset 3, Results of Mixed Effects Models for Generalized Trust[1]

Variables	Model 1 (n = 141)	Model 2 (n = 141)	Model 3 (n = 114, cultural values lagged by 2 years)	Model 4 (n = 88, cultural values lagged by 4 years)
Constant	4.46** (.32)	-7.24* (4.03)	-6.27 (3.91)	8.05 (6.99)
Ethnic diversity	.30 (.61)	.42 (.49)	.47 (.51)	.55 (.70)
% Protestant	.03** (.00)	.02** (.00)	.02** (.00)	.02** (.00)
% Muslim	.02 (.02)	.01 (.02)	.01 (.02)	-.01 (.03)
Net Gini	-.00 (.01)	.01 (.01)	.00 (.02)	.01 (.02)
Between-country effects — Autonomy		2.02** (.50)	2.13** (.52)	2.09** (.78)
Between-country effects — Egalitarianism		.19 (.70)	-.03 (.71)	.12 (1.02)
Between-country effects — Harmony		-.28 (.62)	-.37 (.66)	-.18) (.85)
Within-country effects — Autonomy		.19+ (.32)	-.32 (.38)	.41 (.46)
Within-country effects — Egalitarianism		.32 (.34)	.20 (.32)	-.08 (.35)
Within-country effects — Harmony		-.09 (.27)	-.48+ (.25)	.01 (.26)
Covariance structure for repeated measures[2]	AR1	AR1	AR1	VC[3]
Random intercept variance	.22 (.13)	.16 (.09)	.22* (.08)	.23* (.08)
Akaike's Information Criterion	-18.52	-30.57	-7.57	-2.16
Bayesian Information Criterion	-8.24	-22.16	0.08	4.54

+p < .10, *p < .05, **p < .01

[1] Unstandardized coefficients with robust standard errors in parentheses.

[2] AR1 means first-order autoregressive matrix

[3] Since AR1 Rho was not significant in Model 4, Variance Components (VC) matrix was used.

Table 10

Study 1, Dataset 3, Results of Mixed Effects Models for Generalized Trust[1]

Variables	Model 1 (n = 141)	Model 2 (n = 141)	Model 3 (n = 114, cultural values lagged by 2 years)	Model 4 (n = 88, cultural values lagged by 4 years)
Constant	4.46** (.32)	22.03** (3.59)	22.44** (3.76)	21.79** (3.70)
Ethnic diversity	.30 (.61)	.36 (.45)	.37 (.45)	.50 (.50)
% Protestant	.03** (.00)	.02** (.00)	.02** (.00)	.02** (.00)
% Muslim	.02 (.02)	-.00 (.02)	.00 (.02)	-.00 (.02)
Net Gini	-.00 (.01)	.01 (.01)	.01 (.01)	.02 (.01)
Between-country effects — Embeddedness		-2.49** (.55)	-2.52** (.58)	-2.50** (.56)
Between-country effects — Hierarchy		-.20 (.30)	-.20 (.31)	-.23 (.29)
Between-country effects — Mastery		-.25 (.52)	-.28 (.53)	-.23 (.51)
Within-country effects — Embeddedness		-.53 (.36)	.29 (.46)	-.91* (.37)
Within-country effects — Hierarchy		-.17 (.15)	.07 (.14)	.14 (.25)
Within-country effects — Mastery		.30 (.21)	.46 (.34)	-.23 (.28)
Covariance structure for repeated measures[2]	AR1	AR1	AR1	VC[3]
Random intercept variance	.22 (.13)	.16* (.08)	.20** (.07)	.21** (.07)
Akaike's Information Criterion	-16.78	-33.60	-2.62	-7.51
Bayesian Information Criterion	-8.24	-25.18	5.04	3.36

[+]p < .10, *p < .05, **p < .01

[1] Unstandardized coefficients with robust standard errors in parentheses.

[2] AR1 means first-order autoregressive matrix

[3] Since AR1 Rho was not significant in Model 4, Variance Components (VC) matrix was used.

Table 11

Study 1, Dataset 1 & 2, Results of Generalized Linear Models for Income Inequality[1]

Variables	Dataset 1 (n =73)			Dataset 2 (n=40)		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	10.14 (7.42)	39.72** (11.84)	-46.93* (20.05)	-2.37 (4.29)	36.20** (12.59)	-49.43* (17.05)
Gross Gini	.69** (.17)	.66** (.20)	.68** (.18)	.98** (.09)	1.00** (.07)	.95** (.06)
Adv. Economy	-9.04** (1.28)	-5.92** (1.67)	-5.03** (1.62)	-9.60** (1.40)	-5.75** (2.07)	-5.41** (1.65)
Autonomy		-6.09** (1.62)			-5.84** (2.06)	
Egalitarianism		2.89 (4.18)			.07 (2.99)	
Harmony		-4.75* (1.89)			-4.56* (2.09)	
Embeddedness			4.34[+] (2.55)			4.5* (1.86)
Hierarchy			4.31** (1.47)			3.96** (1.42)
Mastery			7.44* (3.10)			5.25 (3.69)
Likelihood Ratio Chi-square	80.0**	95.7**	101.8**	66.8**	84.6**	89.5**
Degrees of freedom	2	5	5	2	5	5
Akaike's Information Criterion	470	460	455	234	223	218
Bayesian Information Criterion	479	476	470	241	235	230

[+]$p < .10$, *$p < .05$, **$p < .01$

[1] Unstandardized coefficients with robust standard errors in parentheses.

Table 12

Study 1, Dataset 3, Results of Mixed Effects Models for Income Inequality[1]

Variables		Model 1 (n = 153)	Model 2 (n = 141)	Model 3 (n = 114, cultural values lagged by 2 years)	Model 4 (n = 88, cultural values lagged by 4 years)
Constant		11.04** (1.91)	105.43* (41.51)	111.78* (44.15)	105.61* (43.85)
Gross Gini		.43** (.04)	.44** (.05)	.40** (.06)	.43** (.07)
Between-country effects	Autonomy		-10.31** (4.52)	-10.87* (4.66)	-10.09* (4.65)
	Egalitarianism		-5.74 (6.31)	-5.15 (6.40)	-5.44 (6.14)
	Harmony		.92 (5.27)	.11 (5.51)	.41 (5.43)
Within-country effects	Autonomy		-1.56 (1.36)	-1.90 (1.51)	.82 (1.77)
	Egalitarianism		1.75[+] (.89)	.36 (.88)	.69 (1.04)
	Harmony		-.43 (.67)	-.55 (.68)	.49 (.75)
Covariance structure for repeated measures[2]		AR1	AR1	AR1	AR1
Random intercept variance[3]		n/a	n/a	n/a	n/a
Akaike's Information Criterion		400	335	275	218
Bayesian Information Criterion		406	341	281	222

[+]$p < .10$,   *$p < .05$,   **$p < .01$

[1] Unstandardized coefficients with robust standard errors in parentheses. Income Inequality represented by after-tax-and-transfers Gini coefficient.

[2] AR1 means first-order autoregressive matrix

[3] Random effects could not be estimated because statistical calculations did not converge.

Table 13

Study 1, Dataset 3, Results of Mixed Effects Models for Income Inequality[1]

Variables		Model 1 (n = 153)	Model 2 (n = 141)	Model 3 (n = 114, cultural values lagged by 2 years)	Model 4 (n = 88, cultural values lagged by 4 years)
Constant		11.04** (1.91)	-99.17** (24.70)	-101.92** (25.04)	-98.10** (25.91)
Gross Gini		.43** (.04)	.44** (.05)	.40** (.06)	.42** (.07)
Between-country effects	Embeddedness		10.24* (3.96)	10.52* (.407)	9.95* (4.02)
	Hierarchy		2.72 (2.95)	2.43 (3.07)	1.94 (2.89)
	Mastery		6.19$^+$ (3.15)	6.99* (3.49)	7.19* (3.55)
Within-country effects	Embeddedness		-1.32 (1.40)	1.33 (1.37)	.18 (1.97)
	Hierarchy		.31 (.41)	.21 (.21)	-.20 (.99)
	Mastery		-1.10 (.85)	.67 (.90)	-.81 (.73)
Covariance structure for repeated measures[2]		AR1	AR1	AR1	AR1
Random intercept variance[3]		n/a	n/a	n/a	n/a
Akaike's Information Criterion		400	340	279	218
Bayesian Information Criterion		406	345	284	223

$^+$p < .10,   *p < .05,   **p < .01

[1] Unstandardized coefficients with robust standard errors in parentheses. Income Inequality represented by after-tax-and-transfers Gini coefficient.

[2] AR1 means first-order autoregressive matrix

[3] Random effects could not be estimated because statistical calculations did not converge.

Table 14

Study 2, Demographics of the two experimental conditions

Demographics	Low Inequality Condition	High Inequality Condition
Sample size	115	104
Mean age (years)	33.5	32.5
Gender (% females)	30	29
Race (% White/ Hispanic/ Black/ Asian)	73/ 7/ 11/ 6/ 3	66/ 9/ 14/ 7/ 4
Education (% HS/ Junior/ BA/ Grad)	22/ 19/ 32/ 17	24/ 22/ 33/ 8
Household income (% <25K/ <50K/ <75K/ <100K/ <150K/ >150K)	30/ 29/ 19/ 8/ 8/ 6	22/ 38/ 20/ 14/ 5/ 0
Mean household size	2.5	2.39

Table 15

Study 2, Additional information on treatment groups[1]

Variable	Low Inequality Condition	High Inequality Condition
System justification beliefs	3.11 (.86)	3.08 (.87)
Annual salaries ($)		
Skilled factory worker	39,743 (14,663)	39,129 (13,333)
Doctor in general practice	149,499 (103,411)	150,823 (121,771)
Chairman of a large national corporation	5,906,263 (24,161,318)	17,841,089 (146,948,425)
Owner of a small shop	65,534 (53,761)	58,711 (30,814)
Unskilled factory worker	23,901 (8,945)	27,909 (23,943)
Member of the cabinet in the federal government	215,098 (234,406)	223,551 (236,169)
People in your occupation	39,632 (34,007)	50,193 (97,927)
Income Inequality (the ratio of the highest to the lowest salary)	4.1 (1.6)	3.9 (1.6)

[1] Means with standard deviations in parentheses

Table 16

Study 2, Exploratory factor analysis of system justification items[1]

	Factor loadings[2]	
	Factor 1	Factor 2
I feel that the world treats people fairly	**.71**	.47
I feel that people get what they deserve	**.82**	
I feel that people do treat each other fairly in life (R)		.82
I feel that people earn the rewards and punishments they get	**.84**	
I feel that people do treat each other with the respect they deserve (R)		.75
I feel that people get what they are entitled to have	**.77**	
I feel that a person's efforts are noticed and rewarded	**.63**	
I feel that when people meet with misfortune, they have brought it upon themselves	**.70**	

[1] All items loading on Factor 1 formed a system justification scale used in the analyses in Study 2.

[2] Only loadings greater than .40 are listed.

Table 17

Study 2, Generalized trust, a dichotomous measure

	N	Need to be very careful[1]	Most people can be trusted[1]
All subjects	219	55	45
Low Inequality Condition	115	59	41
High Inequality Condition	104	50	50

Chi-square test of independence: $\chi^2 = 1.84$, $df = 1$, $p = .18$

[1] Percent of respondents

Table 18

Study 2, Generalized trust, a Likert-type scale[1]

Variable	Low Inequality Condition	High Inequality Condition
Three-item generalized trust scale	2.62 (.61)	2.56 (.60)

Welch's t-test, $t(215) = .83$, $p = .41$

[1] Higher value means lower generalized trust. Standard deviations in parentheses.

Table 19

Study 2, Social identities ranking[1]

Social identity	Rank					Not ranked
	1st	2nd	3rd	4th	5th	
Race	8.2	8.7	9.6	9.1	5	59.4
Ethnicity	4.6	8.2	10	6.4	6.8	63.9
Gender	22.8	20.1	11	7.3	5.9	32.9
Age	18.3	21.5	14.2	11.4	7.3	27.4
Religion	9.1	2.3	6.8	4.1	4.1	73.5
Occupation	9.1	9.1	12.8	8.2	7.8	53
Low Income	4.1	2.7	1.4	2.3	1.8	87.7
Middle Income	3.7	3.2	2.7	.9	1.8	87.7
High Income	.0	.9	.0	.5	1.4	97.3
The poor	5	2.3	.5	.9	.5	90.9
Low middle class	3.7	5	2.7	2.3	1.8	84.5
Middle class	3.7	5.9	5.5	6.4	1.8	76.7
Upper middle class	3.2	.9	.9	.5	1.8	92.7
The rich	.0	.9	.9	.9	.0	97.3
Political affiliation	4.6	8.2	8.7	6.4	4.6	67.6

[1] Percent of subjects who gave 1st to 5th rank to an identity, and did not rank it at all.

Table 20

Study 2, Aggregated income-related identity across experimental conditions[1]

	Rank					Not ranked
	1st	2nd	3rd	4th	5th	
Low Inequality Condition	24	16.3	9.6	9.6	5.8	34.6
High Inequality Condition	22.6	13.9	11.3	9.6	6.1	36.5

Chi-square test of independence: $\chi^2 = .48, df = 5, p = .99$

[1] Percent of subjects who gave 1st to 5th rank to an income-related identity, and did not rank it at all.

Table 21

Study 2, Exploratory factor analysis of income inequality fairness items[1]

	Factor loadings[2]	
	Factor 1	Factor 2
Differences in income in America are too large (R)	**.88**	
Inequality continues to exist because it benefits the rich and powerful (R)	**.89**	
Large differences in income are necessary for America's prosperity		.94
The rich pay too much in taxes	**.84**	
Business profits are distributed fairly	.58	.47

[1] Items in bold formed inequality fairness scale used in the subsequent analyses.

[2] Only loadings greater than .40 are listed.

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Table 22

Study 2, Descriptive statistics and correlations[1]

	Variable	Mean	SD	1	2	3	4	5	6
1	Income Inequality	.47	.50						
2	System Justification	3.2	.97	-.01	**.90**				
3	Generalized Trust (dichotomous)	.55	.49	-.09	-.20**				
4	Generalized Trust (scale)	2.6	.61	-.06	-.07	.48**	**.83**		
5	Income-related Identity	3.33	2.05	.03	.04	.00	-.06		
6	Fairness of Inequality	3.37	.77	.02	-.42**	.07	-.04	-.02	**.87**

**p < .01, n = 219

[1] Cronbach's alpha on diagonal, bold font

Table 23

Study 2, Manipulation check[1]

	Low Inequality Condition	High Inequality Condition	Welch's t-test	
			t (df)	p
Preferred Income Inequality (natural log of the ratio of the highest to the lowest earning occupations)	2.86 (1.22)	3.27 (1.49)	**2.21** (199)	**.03**
Preferred salaries (log-transformed annual salaries)				
Skilled factory worker	10.63 (.36)	10.77 (.36)	**3.37** (206)	**<.01**
Doctor in general practice	11.85 (.48)	12.11 (.48)	**3.22** (215)	**<.01**
Chairman of a large national corporation	12.94 (1.19)	13.31 (1.51)	**2.14** (196)	**.03**
Owner of a small shop	11.31 (.49)	11.49 (.55)	**2.64** (208)	**.01**
Unskilled factory worker	10.31 (.28)	10.35 (.32)	1.39 (186)	.16
Member of the cabinet in the federal government	11.62 (.49)	11.75 (.61)	**2.01** (177)	**.05**

[1] Means with standard deviations in parentheses.

Table 24

Study 2, Estimations Social Similarity, Inference on Social Relations, and Generalized Trust[1, 2]

Variables	OLS regressions		Logistic regression
	Social Similarity	Inference on Social Relations	Generalized Trust
Constant	3.59** (.70)	4.31** (.23)	2.17 (1.16)
Social Similarity			.01 (.07)
Inference on Social Relations			-.03 (.20)
Income Inequality (1 = High)	-1.08 (.96)	.29 (.33)	-.88 (1.02)
System Justification	-.10 (.20)	-.30** (.07)	-.52* (.22)
Income Inequality × System Justification	.37 (.29)	-.08 (.10)	.15 (.30)
	$R^2 = .01$	$R^2 = .18$	$\chi^2 = 11.15$,
	$F(3,215) = .72$,	$F(3,215) = 15.5$,	$df = 5$,
	$p = .54$	$p < .001$	$p = .049$

$^+p < .10$, $^*p < .05$, $^{**}p < .01$

[1] Unstandardized Coefficients with Standard Errors in parentheses.

[2] Generalized trust measured by a dichotomous variable.

Table 25

Study 2, Conditional Indirect Effects of Income Inequality on Generalized Trust at Different Values of System Justification[1]

Mediator	System Justification	Effect	Standard Error	95% Confidence Interval	
Social Similarity	2.24	.00	.03	-.10	.05
Social Similarity	3.20	.00	.02	-.04	.06
Social Similarity	4.17	.00	.05	-.07	.13
Inference on Social Relations	2.24	.00	.04	-.11	.05
Inference on Social Relations	3.20	.00	.02	-.06	.03
Inference on Social Relations	4.17	.00	.04	-.06	.09

[1] Generalized trust measured by a dichotomous variable.

Table 26

Study 2, Estimating Social Similarity, Inferences on Social Relations, and Generalized Trust[1, 2]

Variables	Social Similarity	Inference on Social Relations	Generalized Trust
Constant	3.59** (.66)	4.31** (.23)	3.36** (.32)
Social Similarity			-.02 (.02)
Inference on Social Relations			-.06 (.06)
Income Inequality (1 = High)	-1.08 (.96)	.29 (.33)	-.63* (.28)
System Justification	-.10 (.20)	-.30** (.07)	-.15* (.06)
Income Inequality × System Justification	.37 (.29)	-.08 (.10)	.18* (.09)
	$R^2 = .01$ $F(3,215) = .72,$ $p = .54$	$R^2 = .18$ $F(3,215) = 15.5,$ $p < .001$	$R^2 = .04$ $F(5,213) = 1.62,$ $p = .16$

$^+p < .10, {}^*p < .05, {}^{**}p < .01$

[1] Unstandardized Coefficients with Standard Errors in parentheses.
[2] Generalized trust measured by a Likert-type variable.

Table 27

**Study 2, Conditional Indirect Effects of Income Inequality on Generalized
Trust at Different Values of System Justification[1]**

Mediator	System Justification	Effect	Standard Error	95% Confidence Interval	
Social Similarity	2.24	.00	.01	-.01	.05
Social Similarity	3.20	.00	.01	-.03	.06
Social Similarity	4.17	-.01	.02	-.06	.01
Inference on Social Relations	2.24	-.01	.01	-.04	.01
Inference on Social Relations	3.20	.00	.01	-.02	.01
Inference on Social Relations	4.17	.00	.01	-.01	.03

[1] Generalized trust measured by a Likert-type variable.

Table 28

Study 2, Conditional Direct Effects of Income Inequality on Generalized Trust at Different Values of System Justification

System Justification	Effect	Standard Error	t	p
2.24	-.24	.12	-2.04	.04
3.20	-.07	.08	-.81	.42
4.17	.10	.12	.90	.37

FIGURES
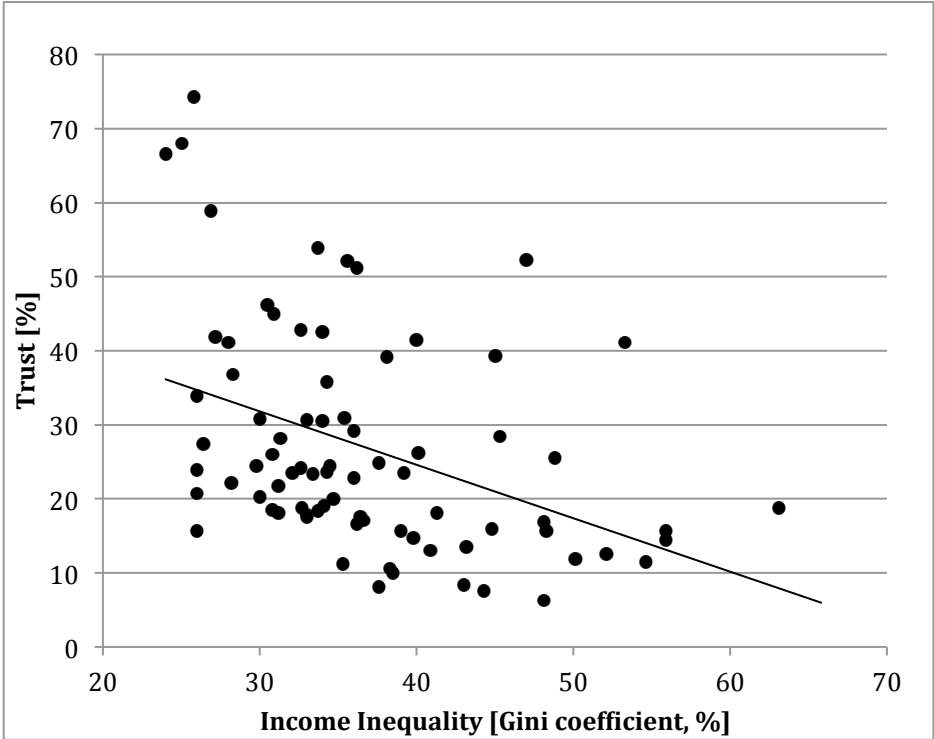
Figure 1

The relationship between income inequality and generalized trust[1]

[1]Generalized trust taken from World Values Survey 1999-2007 is matched with income inequality data from World Bank and CIA.
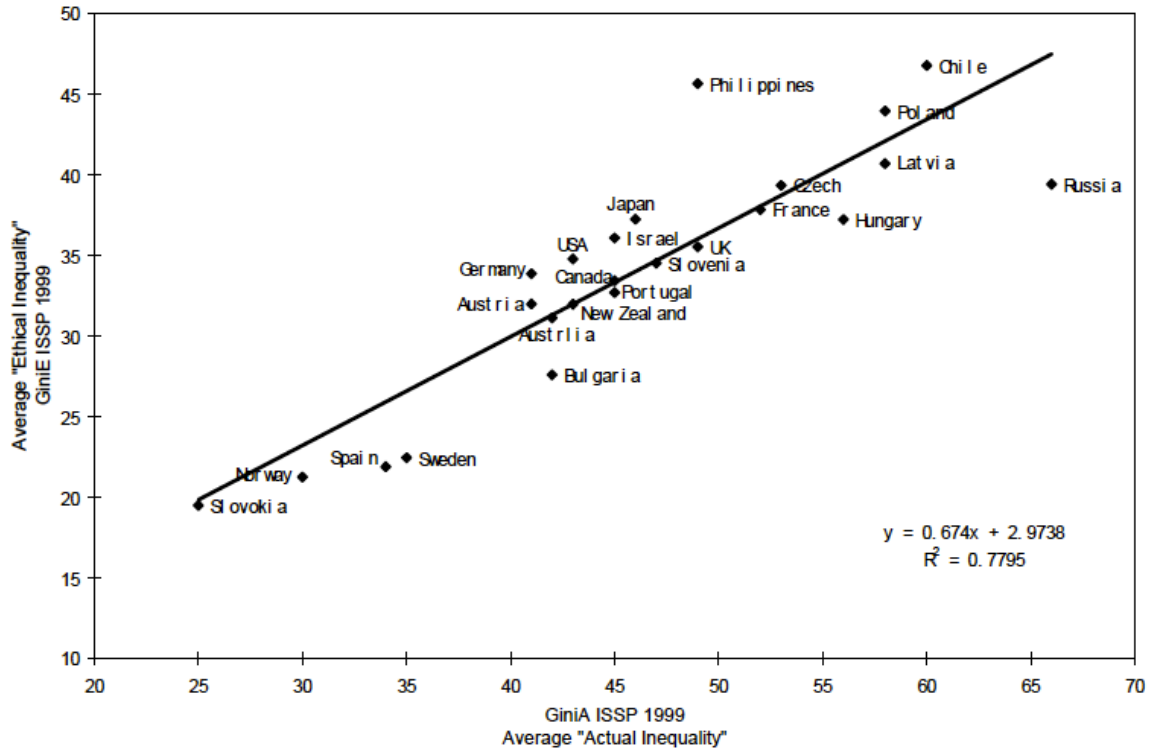
Figure 2

The relationship between actual and accepted income inequality[1]

[1](from Osberg & Smeeding, 2006)
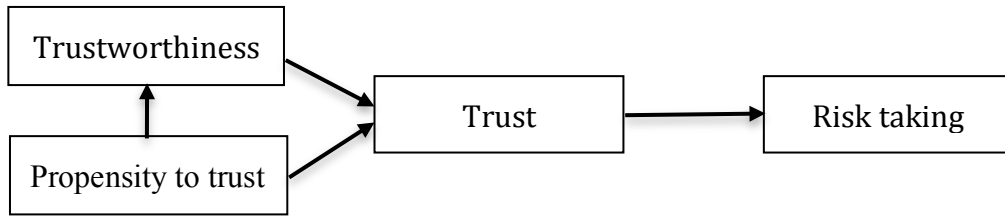
Figure 3

Basic model of trust[1]

[1] (from Mayer et al., 1996)
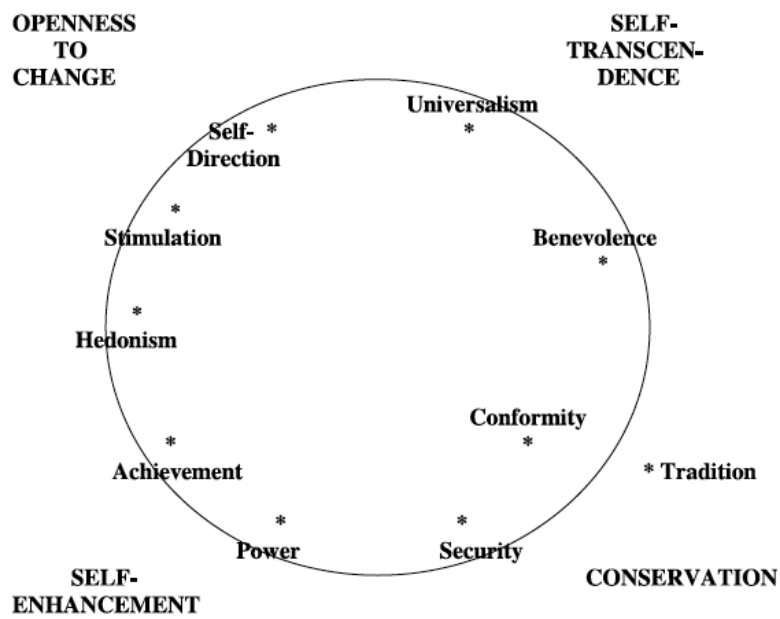
Figure 4

Ten individual values and four higher-order values[1]

[1] as presented in Schwartz & Boehnke (2004)
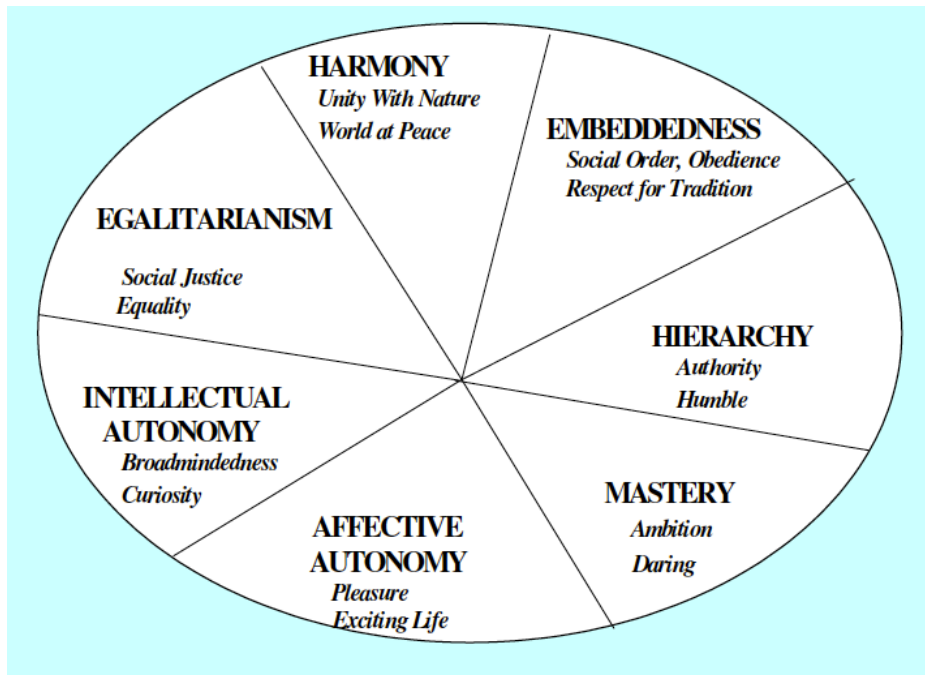
Figure 5

Cultural values dimensions

[1] as presented in Schwartz (2008)
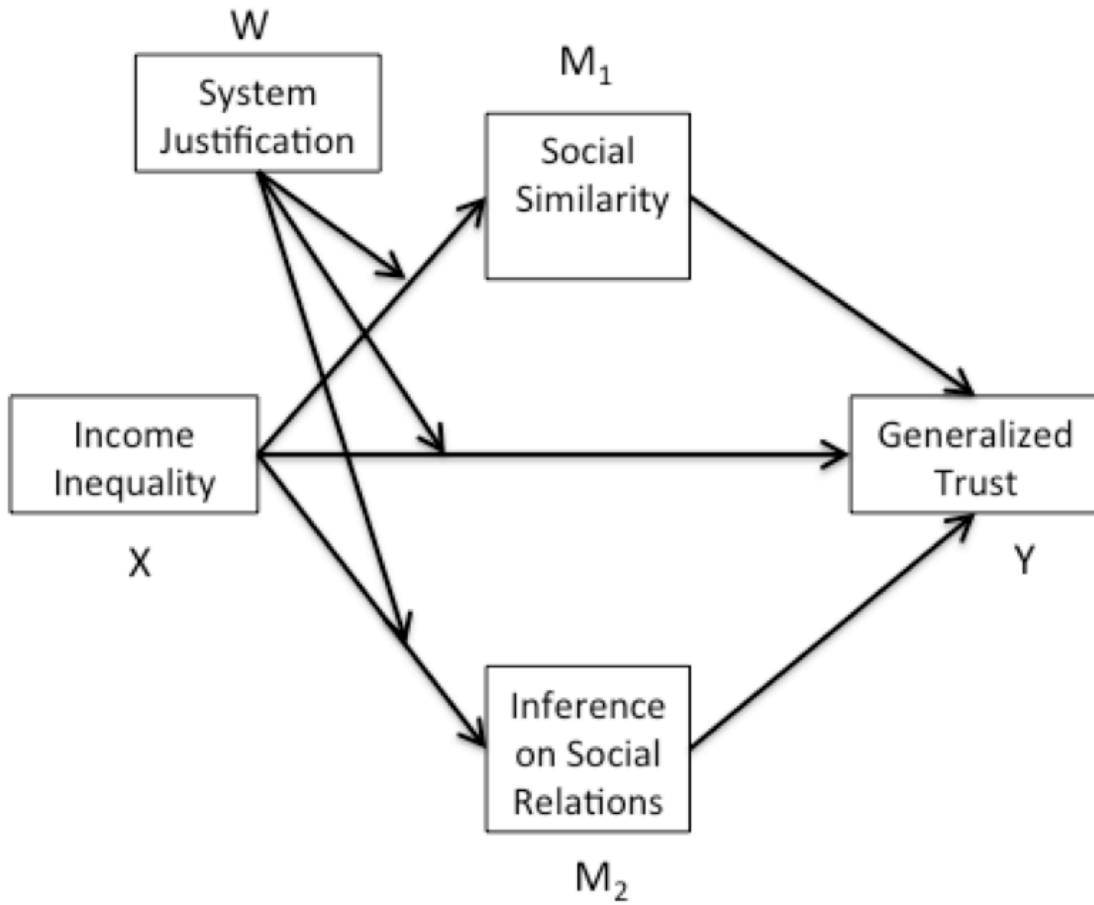
Figure 6

Study 2, Conceptual Model
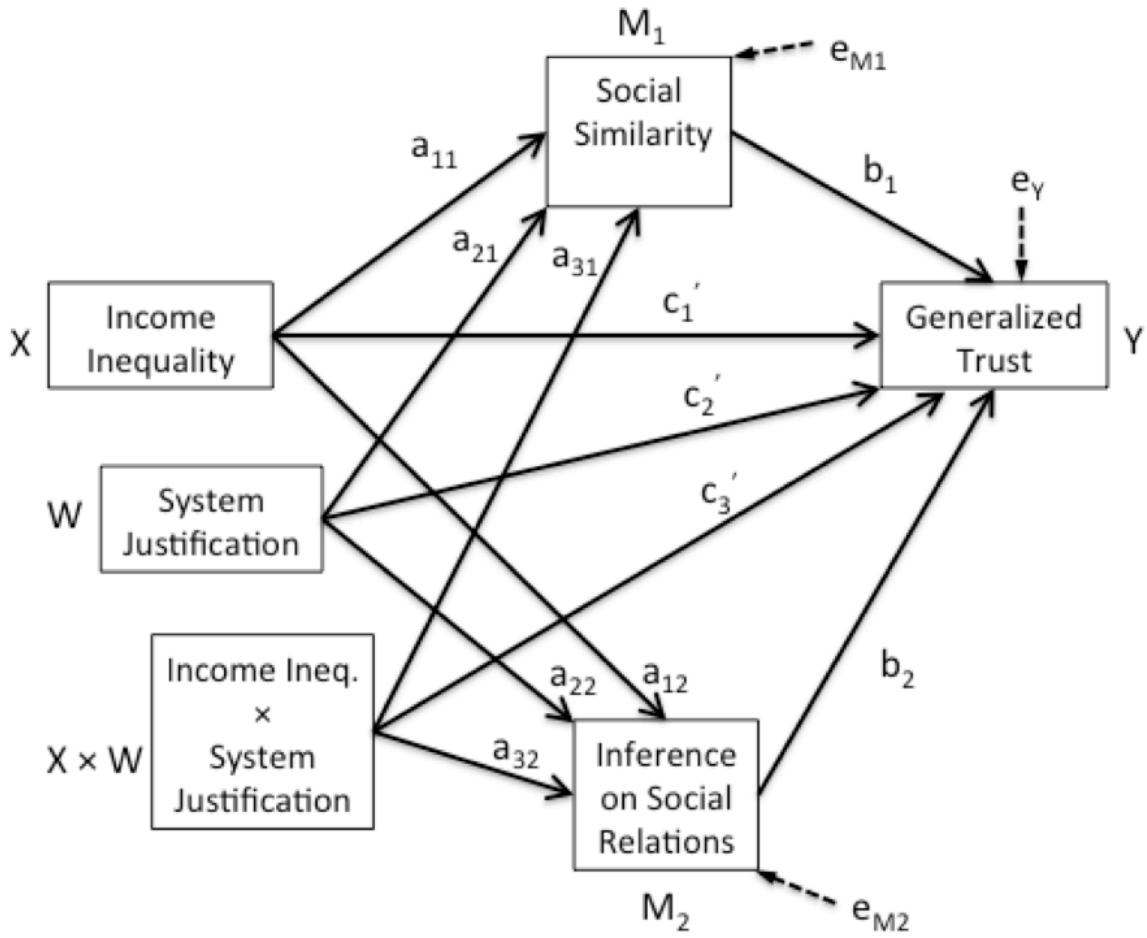
Figure 7

Study 2, Statistical Model
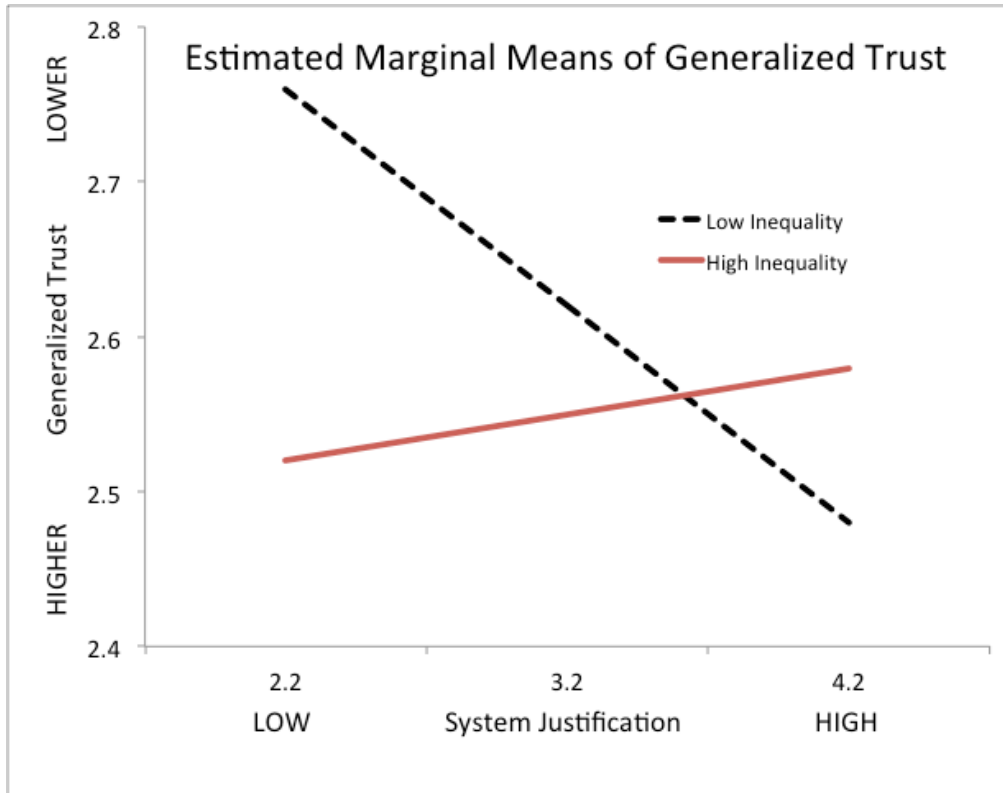
Figure 8

Study 2, Conditional Direct Effect of Income Inequality on of Generalized Trust

APPENDIX A: Study 1, Human Values Scale

Human Values Scale items, and value they measure (from Schwartz, 2007b).

1. Thinking up new ideas and being creative is important to her. She likes to do things in her own original way.   Self-direction
2. It is important to her to be rich. She wants to have a lot of money and expensive things.   Power
3. She thinks it is important that every person in the world be treated equally. She believes everyone should have equal opportunities in life.   Universalism
4. It's very important to her to show her abilities. She wants people to admire what she does.   Achievement
5. It is important to her to live in secure surroundings. She avoids anything that might endanger her safety.   Security
6. She likes surprises and is always looking for new things to do. She thinks it is important to do lots of different things in life.   Stimulation
7. She believes that people should do what they're told. She thinks people should follow rules at all times, even when no one is watching.   Conformity
8. It is important to her to listen to people who are different from her. Even when she disagrees with them, she still wants to understand them.   Universalism
9. It is important to her to be humble and modest. She tries not to draw attention to herself.   Tradition
10. Having a good time is important to her. She likes to "spoil" herself.   Hedonism
11. It is important to her to make her own decisions about what she does. She likes to be free and not depend on others. Self-direction
12. It's very important to her to help the people around her. She wants to care for their well-being.   Benevolence
13. Being very successful is important to her. She hopes people will recognise her achievements.   Achievement
14. It is important to her that the government insure her safety against all threats. She wants the state to be strong so it can defend its citizens.   Security
15. She looks for adventures and likes to take risks. She wants to have an exciting life.   Stimulation
16. It is important to her always to behave properly. She wants to avoid doing anything people would say is wrong.   Conformity
17. It is important to her to be in charge and tell others what to do. She wants people to do what she says.   Power
18. It is important to her to be loyal to her friends. She wants to devote herself to people close to her.   Benevolence
19. She strongly believes that people should care for nature. Looking after the environment is important to her. Universalism
20. Tradition is important to her. She tries to follow the customs handed down by her religion or her family.   Tradition
21. She seeks every chance she can to have fun. It is important to her to do things that give her pleasure. Hedonism

Directions how to compute Cultural Values from Human Values (based on personal communication with prof. Schwartz, Jan 2014):

Harmony = v19 - mrat + 4

Embeddedness = MEAN(v5, v14, v16, v9, v7, v20) - mrat + 4

Egalitarianism = MEAN(v3,v12, v18) - mrat + 4

Intellectual Autonomy = MEAN(v1, v8, v11) - mrat + 4

Affective Autonomy = MEAN(v6, v10, v21) - mrat + 4

Mastery = MEAN(v4, v13, v15) - mrat + 4

Hierarchy = MEAN(v2, v17) - mrat + 4

Where:
v1 to v21 are the items from the Human Values Scale above, and

mrat = MEAN(v1 to v21)

According to Prof. Schwartz (personal communication): "*mrat is a within-person correction for individual response tendencies. It is used when calculating an individual's scores or when aggregating to the group level. Because it gives everyone the same mean, it also corrects for differences in mean use across groups or countries. Once it is done at the individual level, it is not necessary to do it at any other level*."

APPENDIX B: Study 2, Online Survey

Below are a series of statements with which you may either agree or disagree. For each statement, please click on the button that corresponds with the degree of your agreement or disagreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
I feel that the world treats people fairly	❍	❍	❍	❍	❍	❍
I feel that people get what they deserve	❍	❍	❍	❍	❍	❍
I feel that people treat each other fairly in life	❍	❍	❍	❍	❍	❍
I feel that people earn the rewards and punishments they get	❍	❍	❍	❍	❍	❍
I feel that people treat each other with the respect they deserve	❍	❍	❍	❍	❍	❍
I feel that people get what they are entitled to have	❍	❍	❍	❍	❍	❍
I feel that a person's efforts are noticed and rewarded	❍	❍	❍	❍	❍	❍
I feel that when people meet with misfortune, they have brought it upon themselves	❍	❍	❍	❍	❍	❍

Please fill in all the answers below to the best of your ability, but do not use any reference sources such as Google or Wikipedia. We would like to know what you think people in the jobs below actually earn. Many people are not exactly sure about this but your best guess will be close enough. Please write in your best estimate for how much people in the jobs below earn each year (gross annual salary, in $).

Occupation	Annual gross salary (in US dollars)
Skilled factory worker	
Doctor in general practice	
Chairman of a large national corporation	
Owner of a small shop	
Unskilled factory worker	
Member of the cabinet in the federal government	
People in your occupation	

[NOTE: In the following section, subjects in High Income condition will see higher salaries, and subjects in Low Income condition will see lower salaries.]

Thank you for your guesses. For your information, here are the actual amounts that the average people in these occupations made in 2012. Please take your time to read this information.

Occupation	Annual gross salary ($)
Skilled factory worker	42,000 **[OR]** 29,000
Doctor in general practice	240,00 **[OR]** 168,000
Chairman of a large national corporation	22,000,000 **[OR]** 2,400,000
Owner of a small shop	120,000 **[OR]** 91,000
Unskilled factory worker	24,000
Member of the cabinet in the federal government	300,000 **[OR]** 192,000

Next, what do you think people in these jobs ought to be paid - how much do you think they should earn each year, regardless of what they actually get? Please write in how much they should earn each year (gross annual salary, in $).

Occupation	Annual gross salary ($)
Skilled factory worker	
Doctor in general practice	
Chairman of a large national corporation	
Owner of a small shop	
Unskilled factory worker	
Member of the cabinet in the federal government	

Your next task is to answer several questions related to your beliefs and attitudes. Please carefully follow instructions for each question.

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

1. I'd like to ask you how much you trust people from various groups. Could you tell me for each whether you trust people from this group completely, somewhat, not very much or not at all?

	Trust completely	Trust somewhat	Do not trust very much	Do not trust at all
Your family	1	2	3	4
Your neighborhood	1	2	3	4
People you know personally	1	2	3	4
People you meet for the first time	1	2	3	4
People of another religion	1	2	3	4
People of another nationality	1	2	3	4

2. Please define your social identity. Please choose at least one and up to five categories, in the order of importance, from the following list: race, ethnicity, gender, age, religion, occupation, low income, middle income, high income, the poor, lower middle class, middle class, upper middle class, the rich, political affiliation.

1st most important	<select one>
2nd most important	<select one>
3rd most important	<select one>
4th most important	<select one>
5th most important	<select one>

[NOTE: The list of social identities was randomized for each subject]

3. In your opinion, in America, how much conflict is there between poor people and rich people?

Very strong conflicts	Strong conflicts	Not very strong conflicts	There are no conflicts

4. In your opinion, in America, how much conflict is there between the working class and the middle class?

Very strong conflicts	Strong conflicts	Not very strong conflicts	There are no conflicts

5. In your opinion, in America, how much conflict is there between people at the top and people at the bottom?

Very strong conflicts	Strong conflicts	Not very strong conflicts	There are no conflicts

6. For each of the sentences I'd like you to tell me whether you strongly agree, somewhat agree, somewhat disagree, or strongly disagree:
   a. Differences in income in America are too large.

Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree

   b. Income inequality continues to exist because it benefits the rich and the powerful.

Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree

   c. Large differences in income are necessary for America's prosperity.

Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree

   d. The rich pay too much in taxes.

Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree

   e. Generally speaking, business profits are distributed fairly in the United States.

Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree

8. What do you think is the goal of the study? [Don't know/ *or text answer*]

9. Have you already participated in a similar study? [YES/ NO]
    a. If "yes", what was similar?

[Demographics – all subjects in both experiments]
10. Please select your age. [18-25/ 26-35/ 36-45/ 46-55/ 56-65/ more than 66]

11. Please select your gender. [Male/ Female]

12. Please report your highest education degree. [High School/ Junior College/ Bachelor/ Graduate]

13. Please report your race. [White/ Hispanic/ Black/ Asian/ Other]

14. Please report your household gross annual income. [less than $12,000/ $12,000-$25,000/ $25,000-$50,000/ $50,000-$75,000/ $75,000-$100,000/ $100,000-$150,000/ more than $150,000]

15. Please report how many people, including yourself, live in your household. [1/2/3/4/5/6/>6]

Thank you for participating in this study.

This study was designed to measure your social attitudes in the context of income inequality. Please, note that you have been presented with modified data on income inequality in the US. We apologize for this inconvenience and present here the official data on income inequality from Bureau of Labor Statistics.

Occupation	Average annual salary in 2012
Chairman of a large national corporation	$15,100,000
Member of the cabinet in the federal government	$199,700
Doctor in general practice	$180,850
Owner of small shop	$94,180
Skilled factory worker	$34,500
Unskilled factory worker	$24,620
Sources: Bureau of Labor Statistics, U.S. Executive Schedule, Equilar.Inc	