Effect of Social Class on Moral Judgments

by

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ABSTRACT

Moral Foundations Theory (MFT; Haidt & Joseph, 2004) explains human moral judgment based on innate and modular foundations (i.e., care, fairness, loyalty, authority, and sanctity) that are shaped by cultural learning. The emphasis on cultural learning attests to the variability in morality. Hence, sociocultural contexts play an important role in moral judgment. Given that social class is one of the most crucial sociocultural contexts (Stephens, Markus, & Townsend, 2007), the present study investigates the effect of social class with a social cognitive perspective (Kraus et al., 2012) on moral judgments by drawing on MFT. We hypothesized that social class (both objective and subjective indices) and are negatively associated with the binding foundations (i.e., loyalty, authority, sanctity), and are positively associated individualizing foundations (i.e., care and fairness); both links mediated by social cognitive tendencies. The findings indicated limited support for the hypotheses, and reveal direct effect of social class on moral judgments.

Keywords: moral judgments, social class, moral intuitions, moral foundations, social cognitive tendencies

ÖZET

Ahlaki Temeller Kuramı (ATK; Haidt & Joseph, 2004), ahlaki yargıların doğuştan geldiğini ve kültürel etkiler aracılığıyla şekillenen modüler temellere (i.e., bakım, adalet, sadakat, otoriteye destek, kutsallık) dayalı olduğunu savunur. Kültürel öğrenme üzerine yapılan vurgu ahlaki yargılardaki çeşitliliğe işaret eder. Bu nedenle, sosyokültürel bağlamlar ahlaki yargılar üzerinde önemli bir rol oynamaktadır. Toplumsal sınıfların en önemli kültürel bağlamlardan biri göz önüne alındığında (Stephens, Markus, & Townsend, 2007), bu çalışma, toplumsal sınıfın ahlaki yargılar üzerindeki etkisini sosyal bilişsel bakış açısı (Kraus et al., 2012) ve ATK aracılığıyla incelemektedir. Çalışmanın hipotezi, toplumsal sınıf (hem nesnel hem de öznel göstergeleri) ile bağlayıcı temeller (i.e., sadakat, otoriteye destek, kutsallık) arasında ters yönde bir ilişki ama bireyselci temeller arasında aynı yönde bir ilişki ve bu ilişkilere sosyal bilişsel eğilimlerin aracılık ettiği yönündedir. Bulgular, hipotezleri kısıtlı olarak desteklemektedir ve toplumsal sınıfın ahlaki yargılar üzerindeki doğrudan etkisini açığa çıkarmaktadır.

Anahtar kelimeler: ahlaki yargılar, toplumsal sınıf, ahlaki sezgiler, ahlaki temeller, sosyal bilişsel eğilimler

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1. INTRODUCTION

Moral psychology has witnessed the rise of social psychological perspectives after a longstanding dominance of cognitive developmental theories (Haidt & Kesebir, 2010). This shift has mainly stemmed from the introduction of the Social Intuitionist Model (SIM; Haidt, 2001), and consequently the Moral Foundations Theory (MFT; Haidt & Joseph, 2004). Shared in these theories are the ideas that (1) moral judgments are not only based on the concepts of justice and care, and that (2) moral judgments are originated in intuitions but not in reasoning. MFT proposes five moral foundations that are present in the brain as a first draft (Graham et al., 2012). Although these foundations are universal, they can be overwritten by cultural experience (Graham et al., 2012). For instance, children acquire moral values similar to those prevalent in their (social) cultural group (Haidt, 2001). Similarly, enculturation research accentuates the gravity of cultural contexts on social mind and behavior (e.g., LeVine, 1990). Therefore, it is suggested that sociocultural contexts are highly likely to play a crucial role in formation of moral judgments.

One of the most important sociocultural contexts through which human beings find meaning is social class (Stephens, Markus, & Townsend, 2007). Yet, social class has only recently become a distinct subject in psychology (Kraus & Stephens, 2012). Recently, a social cognitive theory of social class has been suggested (Kraus, Piff, Mendoza-Denton, Rheinschmidt, and Keltner, 2012). According to this theory, lower-class individuals are more likely to have contextual cognitive tendencies (i.e., emphasis on external and uncontrollable forces), whereas higher-class individuals tend to possess solipsistic cognitive tendencies (i.e., focus on individual goals, motivations, and emotions).

Considering the social cognitive theory of social class and moral foundations theory, the present study aimed to investigate the effect of social class on moral judgments.

2. LITERATURE REVIEW

2.1 Morality

Morality has been a theme of discussion for centuries (Haidt, 2008). The long-term interest in morality is not surprising, considering that it is vital for a society to preserve and bolster its legitimacy, and that it is central in daily life (Haidt & Joseph, 2004). Thus, morality finds ample space in social sciences as well.

Two perspectives in the study of morality prevails in social sciences (Hitlin & Vaisley, 2013). In the first perspective, morality is regarded as a correspondence to a set of universal codes concerning how people should relate to one another in terms of justice, fairness, and harm (Turiel, 2002). These universal standards appear to be an unwritten contract for majority's best interests (Krebs, 2008). According to the second perspective, morality refers to the relativity of what is good and bad. It emphasizes that the understandings of morality may change across individuals as well as societies. Thus, there is research on the components and mechanisms of concepts such as dignity, integrity, and humaneness as well as research on judgments about what is right and wrong (Abend, 2011).

In line with the first perspective, Turiel's definition of morality as ''prescriptive judgments of justice, rights, and welfare pertaining to how people ought to relate to each other'' (1983, p. 3) has been dominant in psychology (Haidt, 2008). Psychological research has frequently conceptualized *moral* as an ultimate goal that individuals strive to achieve. Cognitive developmental approach suggesting that morality changes through personal development (e.g., Kohlberg & Kramer, 1969; Piaget, 1965) has dominated the field (Krebs, 2008). Most notably, Kohlberg's moral development theory (1971) focuses on the prescriptions of justice, harm, and fairness across developmental stages. These theories argue that moral judgments are made

through deliberate reasoning, and that they are based on concerns about justice and harm. Thus, researchers have attempted to predict individuals' moral judgments by investigating their reasoning (Blasi, 1980; Vallerand, Deshaies, Cuerrier, Pelletier, & Mongeau, 1992).

Kohlberg's perspective has been frequently challenged (Haidt & Kesebir, 2010). Instead of deliberate moral reasoning, evolutionary approaches argue for emotions as the fabric of morality (Hauser, 2006). For instance, de Waal (1997) proposes that developing authentic concern for others makes a person moral, and serves to be psychologically adaptive. Moreover, evidence from neuroscience reveals that brain areas related to emotion are activated when engaging in moral judgments (Greene, Nystrom, Engell, Darley, & Cohen, 2004). This finding offers an alternative explanation for formation of moral judgments by showing that moral judgments are connected to emotions rather than being created by only deliberate thoughts.

Social learning theory also criticizes the universality of morality. It suggests that children obtain a sense of morality reflecting the norms of the culture in which they grow up through rewards, punishments, and observation (Bandura, 1991). In a similar vein, anthropologist Trompenaars (2003) reports that individuals from different cultures have judged the same moral dilemma in the opposite ways. Overall, several perspectives disagree with the universal approach to morality, and gave rise to new theories that approach morality from social psychological, evolutionary and cultural perspectives.

Combining the evolutionary and cultural accounts of morality, a comprehensive definition has been put forward by Haidt (2008): "Moral systems are interlocking sets of values, practices, institutions, and evolved psychological mechanisms that work together to suppress or regulate selfishness and make social life possible." (p. 70). This definition suggests that morality is deeply rooted as a more primitive process. Indeed, moral behavior is thought to be more strongly correlated with moral emotion than moral reasoning. For instance, Haidt, Koller and Dias (1993)

indicate that part of participants felt offended by morally loaded situations, whereas they failed to establish a rational explanation for their reaction. As a result, affective reactions better predicted moral judgments than logical reasoning. Furthermore, these judgments were moderated by participants' home country (i.e., U.S vs. Brazil) and social class, suggesting that judgments take place using the raw data from the environment before being deliberately interpreted by the individual. This finding underlines the importance of sociocultural contexts for moral judgment.

Based on these earlier findings, Haidt (2001) formulates the Social Intuitionist Model (SIM) that explains the nature and mechanism of moral judgments. The main argument is that moral judgments are not based on deliberate reasoning as overly emphasized by the previous research (e.g., Kohlberg, 1971; Piaget, 1965). Instead, they are based on *intuitions,* which are influenced by culture and social life (Greene & Haidt, 2002). However, the model does not entirely disregard reasoning either (Haidt, 2001). To explore and classify the most important moral intuitions, Haidt and Joseph (2004) extend SIM, and put forward the Moral Foundations Theory (MFT).

2.1.1 Moral Foundations Theory

MFT proposes that human brain has a first draft that is revised by cultural learning during the acquisition and internalization of moral values (Haidt & Joseph, 2004). It extends the SIM by classifying the moral intuitions. On the contrary of the past research that emphasizes only harm and justice, given the ubiquity of social challenges, MFT argues the existence of other moral intuitions (e.g., loyalty to one's in-group) that cover the scope of morality across cultures.

MFT identifies five moral foundations (intuitions). These are (1) Care / Harm (i.e., caring and protecting others, and avoidance of harm), (2) Fairness / Cheating (i.e., concerns about fairness justice according to shared rules, and avoidance of cheating), (3) Loyalty / Betreyal (standing with your in-group, and avoiding to betray them), (4) Authority / Subversion

(conforming to tradition and legitimate authority, and avoiding to disrupt the social order), (5) Sanctity / Degragation (concerns about physical and spiritual purity, and avoidance of contamination) (Graham et al., 2012; Haidt & Joseph, 2004; Haidt & Graham, 2006).

Graham, Haidt, and Nosek, (2009) further pointed out an important conceptual distinction regarding the five foundations. They conceptualized the first two domains (i.e., care and fairness) as *individualizing* foundations as they are aligned with the rights and welfare of individuals. The emphasis is on the individual himself / herself. The second set of foundations, on the other hand, focus on social cohesiveness and social order. The emphasis is on the others. Considering this emphasis on group, they are called *binding* foundations.

MFT postulates the five foundations to be universal in human morality, but cautions that their relative strength varies based on sociocultural context (Haidt & Joseph, 2004). Studies indicate that culture and individuals (i.e., self) are interdependent (Shweder, 1990; Markus & Kitayama, 2010). In terms of the effect of context on morality, for instance, Haidt et al. (1993) demonstrate that participants from Brazil and from lower social classes (i.e., less individualistic / Westernized cultures) reacted harsher to the vignettes depicting offensive but victimless actions than their American and upper-class counterparts did. Similarly, individuals from upper social class are found to be more prone to engage in unethical behaviors compared to those from lower social class (Piff, Stancato, Cote, Mendoza-Denton, & Keltner, 2012). However, up to date, moral foundations have rarely been investigated across different sociocultural contexts (e.g., culture, social class). Considering that social class is one of the most prominent and influential sociocultural contexts (Stephens et al., 2007), the present research aims to fill this gap by investigating the variation in moral foundations across levels of social class.

2.2 Morality and Social Class

Social class is a great part of culture (e.g., Fiske & Markus, 2011; Marx & Engels, 1973). It has, in part, determinative power on a wide range of issues such as birth weight, neighborhood in which one lives, and health outcomes (Hout, 2007). However, although social class is within the research interests of many disciplines (APA, 2006), it has relatively recently emerged in psychology as a distinct research subject (Kraus & Stephens, 2012).

Several findings identify the differences in social class in terms of social cognition and behavior. Higher empathic and interpersonal accuracy, situational attributions, more engagement in social interaction, and preference for redistributive policies are characteristics of individuals from lower levels of social class (Bjornsdottir, Alei, & Rule, 2017; Grossmann & Varnum, 2010; Kraus, Cote, & Keltner, 2009; Kraus & Keltner, 2009; Kraus, Piff, & Keltner, 2011; Lammers, Galinsky, Gordijn, & Otten, 2012). Further, social class predicts aggressive behavior in adolescent populations (Aslund, Starrin, Leppert, & Nilsson, 2009), less agentic acts (Kraus et al., 2009) and conformity behavior (Stephens, Markus, & Townsend, 2007) in adult samples.

Contemporary theories have attempted to explain these differences stemming from social class. Cultural perspective argues that experiences over time that stem from the differences in the material resources and corresponding rank perceptions constitute environments that constantly reinforce and create class-specific emotional, cognitive, and behavioral patterns (Cote, 2011; Grossman & Huynh, 2013; Snibbe & Markus, 2005; Stephens & Townsend, 2013). Hence, class as a sociocultural context paves the way for different conceptions of self and patterns of relating to others (Kraus & Stephens, 2012). This line of research in psychological literature has support in and basis from sociological work as well. For instance, Bourdieu (1987) and Gramsci (1988) discuss at length how social class determines the way one is and thinks in a given culture.

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Kraus et al. (2012) recently proposed the sociocognitive perspective on social class by drawing on Marxist approach that focuses on objective indices (e.g., Marx & Engels, 1973), health psychology perspective that emphasizes the rank perception (e.g., Adler, Epel, Castellazo, & Ickovics, 2000), and social class as culture perspective (e.g., Snibbe & Markus, 2005). This perspective suggests that, rather than being a fixed trait, social class forms contexts that shape social cognitive patterns. Considering the constraints that lower-class individuals face (i.e., reduced material resources and lower rank), they develop "contextualist social cognitive tendencies" (p. 549). That is, they are likely to focus on external and uncontrollable social outcomes, mediated by a reduced sense of self-control (Kraus, Piff, & Keltner, 2009). On the other hand, given their relatively easier access to material resources and higher social rank perceptions, upper class individuals tend to focus on internal states, goals, motivations, and emotions, which Kraus and his colleagues (2012) dubbed "solipsistic social cognitive tendencies" (p. 550). These social cognitive tendencies (SCT) influence aspects of self-concept such as agency, how one perceives his / her social world such as empathy, and relationship strategies people engage in such as prosocial behavior and moral judgment (Kraus et al., 2012). In an empirical study, Grossmann and Varnum (2010) support these patterns by demonstrating that lower-class individuals from different countries are more likely to reflect holistic cognitive patterns, and to possess more interdependent selves.

Although psychological research on social class has nourished over the last decade, the literature is wanting in studies that investigate social class's impact on moral domain (Piff et al., 2012). Given that one's sense of morality is partly determined by cultural influences (Haidt, 2001), and that social class is one of the most important parts of one's culture (Stephens et al., 2007), research is needed to investigate the differences across class lines in terms of moral judgments (Haidt et al., 1993; Kraus et al., 2012). Drawing on moral foundations theory (Haidt &

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Joseph, 2004) and social cognitive perspective on social class (Kraus et al., 2012), the present study asserts that social class influences moral judgments.

3. THE PRESENT STUDY

Despite the scarcity of the empirical research, the link between social class and morality have been discussed for centuries by both philosophers and public (Cote, Piff, & Willer, 2013). Empirical studies just started investigating this link. Recent studies show that upper-class rank individuals are more likely to adopt essentialist beliefs about social class categories (i.e., social class differences are rooted in genes; just world) compared to lower-class rank individuals (Kraus & Keltner, 2013). In a similar vein, another study reports that upper-class individuals are more likely to engage in unethical behavior (Piff et al., 2012). On the contrary, one line of research has long claimed that upper-class individuals possess stronger moral values than lower-class individuals do (e.g., Snarey, 1985). Yet, these studies define morality in terms of justice. This study draws from MFT and investigates the moral foundations from the perspective of social class. Accordingly, the present study hypothesizes that as one's level of social class increases she scores lower in the binding foundations (i.e., loyalty, authority, sanctity), and scores higher in the individualizing foundations (i.e., care and fairness), and these associations are mediated by SCT.
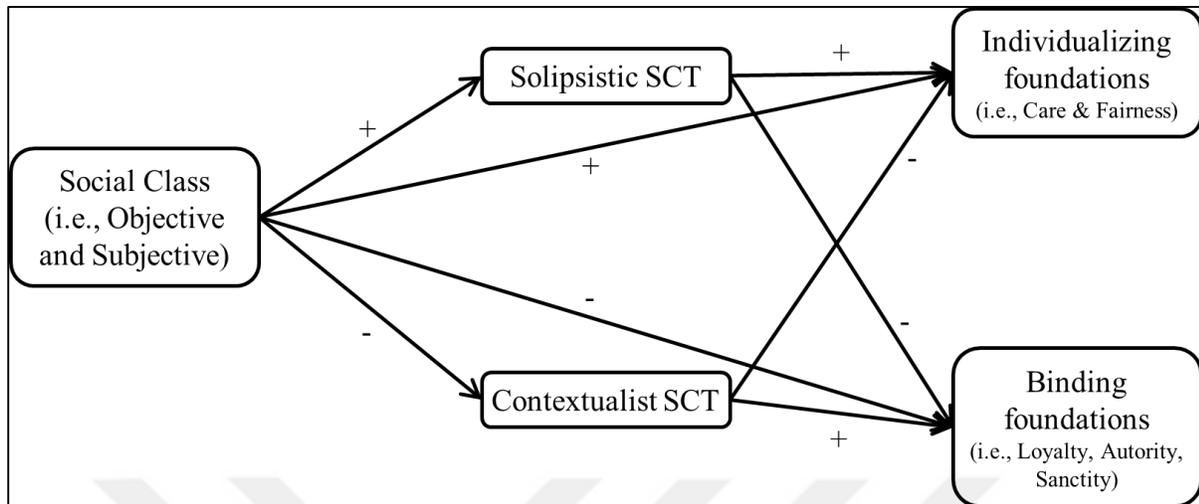
Figure 1. Conceptual model.

Considering the contextualist social cognitive tendencies of lower-class individuals, lower-class individuals may prioritize binding foundations. Because the emphasis is on the outside rather than the individual person, their relation to others and their groups gain more importance. Their attention to others' thoughts and actions is increased (Dietze & Knowles, 2016). Therefore, their moral judgments could be more based on the moral foundations that are related to social conformity and order (i.e., binding foundations). Specifically, because lower-class individuals are hypothesized to adopt communal life style (Kraus et al., 2012) they may possess an elevated sense of loyalty for their in-group. Also, considering that people from lower class are less likely to engage in agentic acts and have reduced sense of control (Kraus et al., 2009), and more likely to conform to other people (Stephens et al., 2007), authority and avoidance of subversion may be more important to them. Finally, previous research pointed out that lower-class individuals reacted more negatively to violations of purity than their upper-class counterparts (Horberg, Oveis, Keltner, & Cohen, 2009). Therefore, we hypothesize that contextual social cognitive tendencies mediate the relationship between social class and moral foundations. That is, participants are more likely to possess higher contextual SCT, and in turn, to score higher in binding foundations as their level of social class decreases.

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As for higher-class individuals, having solipsistic social cognitive tendencies, they are more likely to prioritize individualizing moral foundations. People from upper classes have a tendency to emphasize an individualized self, and focus on personal goals, motivations, and emotions (Kraus et al., 2012). In addition, they are more individualistic attaching greater value on autonomy and individual freedom (Triandis, McCusker, & Hui, 1990). Therefore, the foundations that accentuate individual rights and welfare (i.e., care and fairness) may be more likely to be internalized by them. We finally hypothesize that solipsistic social cognitive tendencies mediate this relationship. That is, participants are more likely to possess higher solipsistic SCT, and in turn, to score higher in individualizing foundations as their level of social class increases.

Although social class is commonly operationalized by objective indices such as income, education, and job, or more commonly a combination of them, psychological research has put forward the subjective index of social class as a distinct way of measuring social class. This index is described as one's subjective views of her own place in society relative to others (Kraus & Stephens, 2012). Research incorporating individuals' subjective perceptions of social class has accelerated within the last decade and produced significant findings for a variety of outcomes from health to social cognition and behavior (Kraus & Stephens, 2012). In fact, subjective social class is often a better predictor than objective markers of social class (Adler, 2009), and considered a cognitive average of the traditional indicators of social class (Andersson, 2015). Therefore, the present research considers the effect of both objective and subjective indices of social class on moral judgments.

3.1 Overview of the Studies

The present research comprises of two studies[1]. Study 1 is a correlational study, testing the hypothesizes via structural equation modeling. Study 2 utilized an experimental design in

which both the independent (i.e., subjective SES) and mediator variable (i.e., social cognitive tendencies) were manipulated. In all studies, based on the past research on morality, age, gender, religiosity, and political ideology served as control variables (Cote et al., 2012; Graham et al., 2009). Finally, it should be noted that the hypotheses for this research were preregistered prior too data collection (https://osf.io/vdkp7/).

4. STUDY 1

Study 1 aimed to establish the correlational link between social class and moral judgments through social cognitive tendencies using a survey research design.

4.1 Participants and procedure

Data were collected via Amazon's Mechanical Turk (mTurk) platform from participants who reside in U.S., which has been found to be more representative of the overall population than typical Internet recruitment samples and college student samples (Buhrmester, Kwang, & Gosling, 2011). Participants filled out a survey via a Qualtrics link posted on mTurk. They were compensated with monetary reward upon completion. Initially, 554 participants were recruited. However, 27 participants were excluded from analyses because they failed to respond correctly to both of the attention check items. The final sample was comprised of 527 participants (56% female). Participants' age ranged from 18 to 87 ($M = 39.03$, $SD = 14.42$).

To determine the sample size, we followed the recommendations of Fritz and MacKinnon (2007) for mediation models. To obtain .8 power, the sample size for Study 1 was ascertained to be between 148 (i.e., moderate effect size for both a and b path with bias-corrected bootstrapping for a*b) and 462 (i.e., small effect sizes for each path with bias-corrected bootstrapping for a*b). Since these recommendations do not include covariates, and the present study does, we attempted to collect data even more than recommended.

4.2 Measures

4.2.1 Social class

Objective indices of social class were assessed using self-reports of educational

attainment, household income, and job prestige (Adler et al., 2000; Kraus, Adler, & Chen, 2012).

Education was assessed using four categories (1 = did not finish high school, 2 = high school

graduation, 3 = college graduation, 4 = postgraduate degree). Using the same scale, parental

education was also assessed. Household income was assessed using eight categories (1 = less

than $15,000, 2 = $15,001–25,000, 3 = $25,001–35,000, 4 = $35,001–50,000, 5 = $50,001–

75,000, 6 = $75,001–100,000, 7 = $100,001–150,000, 8 = greater than $150,000). Job prestige

was assessed by using a 3-point scale (1 = Blue collar or service, 2 = Clerical or self-employed, 3

= Professional or managerial) where the higher scores indicated higher prestige. Using the same

scale, job prestige of parents was also assessed. Items were first standardized and then averaged

to create a composite score.

As for the subjective index of social class, we used the MacArthur subjective SES scale

(e.g., Adler et al., 2000). Participants were asked to rate themselves on a 10-rung ladder

representing American society, with those at the top (bottom) of the ladder being the best (worst)

off and having the most (least) education, money, and best (worst) jobs in the U.S. Higher scores

on the 10-rung ladder indicated higher subjective social class.

4.2.2 Social cognitive tendencies (SCT)[2]

To measure contextual and solipsistic social cognitive tendencies, as previously used and

updated by Grossmann and Varnum (2010), participants read four vignettes that describe a

protagonist who performed either a desirable or an undesirable act (Kitayama, Ishii, Imada,

Takemura, & Ramaswamy, 2006, Study 3). After reading each vignette, participants answered

two questions indicating (a) the extent to which ''features of the protagonist such as his / her

character, attitude, or temperament influenced his / her behavior'' (i.e., dispositional attribution score) and (b) the extent to which ''features of the environment that surround the protagonist such as the atmosphere, social norms, or other contextual factors influenced his / her behavior'' (i.e., situational attribution score; 1 = strongly disagree, 7 = strongly agree). Items for each social cognitive tendency were averaged to create a composite score. Vignettes and items are available in Appendix A.

4.2.3 Moral foundations questionnaire (MFQ)

Moral judgments were assessed by moral foundations questionnaire developed by Graham et al. (2011). The scale is comprised of two parts (i.e, moral relevance and moral judgment) and 30 items in total designed to measure care, fairness, loyalty, authority, and sanctity. Items for each foundation were averaged to create a composite score. The scale is available in Appendix C.

Demographics, religiosity, and political ideology were assessed.

4.3 Results

Descriptive statistics and reliability coefficients of and correlations among variables are presented at Table 1 and 2, respectively.

Table 1

Descriptive summaries and reliabilities of the variables for Study 1

	α	M	SD	Min	Max
Social Class					
Income	-	3.89	1.8	1	8
Education	-	2.92	.66	1	4
Job Prestige	-	2.21	.78	1	3
Objective indices	.63	-.02	.77		
Subjective index	-	5.29	1.89	1	10
SCT					
SCT scale	.79	3.55	1.09	1	7
Solipsistic T.	.74	4.89	.92	1	7
Contextualist T.	.80	5.12	1.00	1	7

Moral Foundations					
Care	.73	4.58	.86	1	6
Fairness	.70	4.50	.79	1	6
Loyalty	.80	3.69	1.02	1	6
Authority	.77	3.91	.96	1	6
Sanctity	.84	3.64	1.18	1	6
Covariates					
Political Ideology	-	5.73	2.86	0	10
Religiosity	-	4.35	3.57	0	10
Age	-	39.03	14.42	18	87

Table 2

Correlations among variables for Study 1

	1	2	3	4	5	6	7	8	9	10	11	12
1. Social Class	1											
2. Subjective SES	.48***	1										
3. Solipsistic SCT	.04	.11*	1									
4. Contextual SCT	.04	.09*	.23***	1								
5. Care	.01	.03	.22***	.21***	1							
6. Fairness	-.01	-.02	.24***	.18***	.65***	1						
7. Loyalty	.02	.30***	.22***	.17***	.21***	.07	1					
8. Authority	-.01	.30***	.17***	.19***	.16***	.02	.74***	1				
9. Sanctity	-.03	.26***	.14**	.12***	.22***	.10*	.66***	.71***	1			
10. Age	.01	-.06	-.02	.01	.14**	.07	-.02	-.01	.01	1		
11. Liberalism	.01	.18***	.08	.08	.04	.002	.37***	.35***	.55***	-.04	1	
12. Religiosity	-.00	-.05	.08	-.004	.17***	.28***	-.33***	-.42***	-.39***	.08	-.26***	1

Note. * p < .05, ** p < .01, *** p < .001

Hypotheses were tested by structural equation modeling (SEM) using Mplus 6 (Muthén & Muthén, 2005). We tested hypotheses building a full SEM model with indirect effects. Since the distribution of the mediated effect has excess kurtosis and skewness at low values of a and b values (Kisbu-Sakarya, MacKinnon, & Miocevic, 2014), we used bootstrapping (1000 times) to estimate the mediated effect.

The model had acceptable fit statistics, $\chi^2(1054) = 2442.681$, $p < .001$, $CFI = .871$, $TLI = .85$, $RMSEA = .05$. A latent variable for objective indices of social class and an indicator variable for subjective index of social class were separate predictors, and they were allowed to correlate. In addition, the mediators and the items of the same scale were also allowed to correlate. Preliminary analyses pointed out that control variables actually worsened the model fit. Although the effects reported here did not change when we included them, we excluded them from the model to enhance model fit and not to decrease statistical power.

The Mplus scripts used in the analyses are available in Appendix D. Specific and total indirect effects, direct effects, and total effects of the models are presented in Table 3. Factor loadings can be found in Appendix E.

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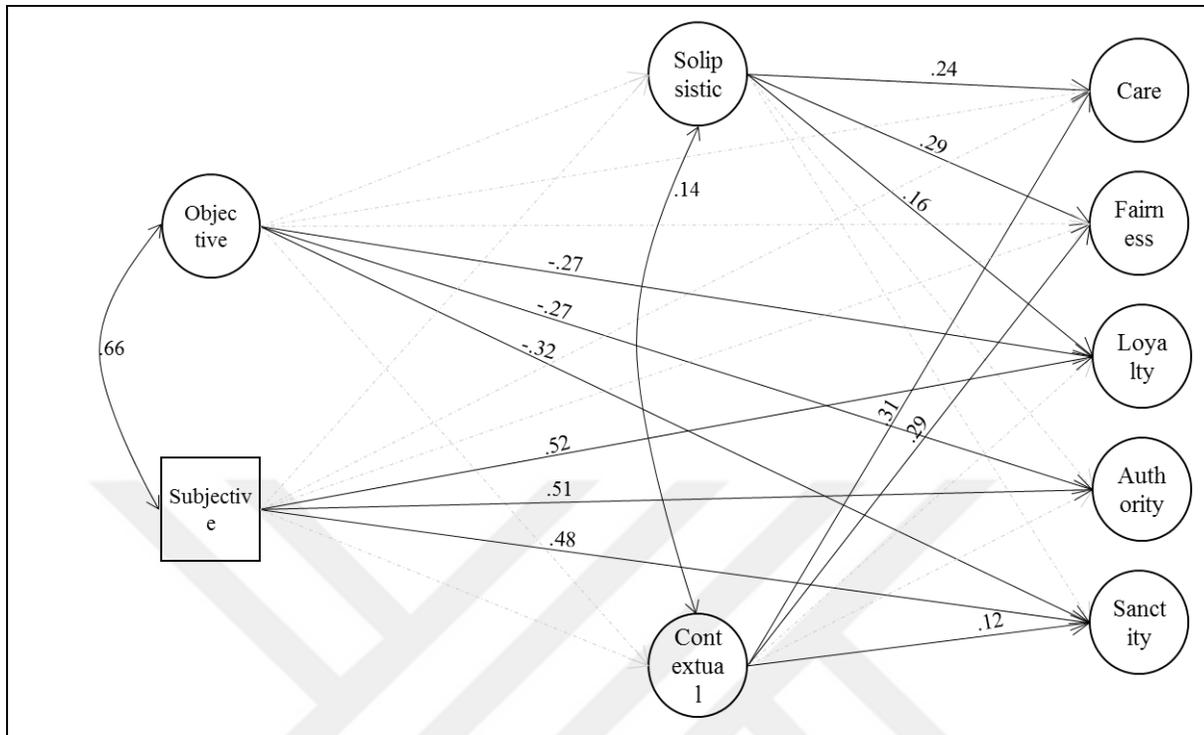
Figure 2. Association between objective and subjective indicators of social class and moral foundations, mediated by vignettes for solipsistic and contextual social cognitive tendencies. *Note*. Only significant path values are reported. Gray arrows indicate non-significant paths. Standardized estimates are reported. See Appendix F for unstandardized estimates.

Figure 2 represents the first model in which SCT was measured through vignettes. In model 1, we were not able to detect any indirect effect of social class on moral foundations through social cognitive tendencies, regardless of the type of the predictor or mediator. However, both of the mediators were positively related to the foundations of care and fairness. Moreover, solipsistic SCT was positively associated with loyalty, and contextualist SCT was related to sanctity. Both predictors and mediators were positively correlated to one another.

The results revealed direct effects of both objective and subjective indices of social class on moral foundations. First, objective SES was negatively related to the foundations of loyalty, authority, and sanctity (βs = -.27, -.27, and -.32, respectively), but there was no significant relationship between objective SES and the foundations of care and fairness. Second, subjective SES was positively related to the foundations of loyalty, authority, and sanctity (βs = .52, .51, and

.48, respectively), but there was also no significant relationship between subjective SES and the foundations of care and fairness.

Table 3

Direct, indirect, total effects, and 95% confidence intervals

| | | Model 1 (SCT vignettes) | | | | |
		Indirect via Solipsistic	Indirect via Contextualist	Total indirect effect	Direct effect	Total effect
Care	Objective	-.003	-.01	-.01	-.004	-.01
		[-.04, .04]	[-.05, .04]	[-.07, .05]	[-.12, .11]	[-.12, .10]
	Subjective	.01	.01	.02	-.001	.02
		[-.01, .04]	[-.01, .04]	[-.02, .06]	[-.07, .07]	[-.05, .09]
Fairness	Objective	-.004	-.01	-.01	.09	.08
		[-.05, .05]	[-.05, .04]	[-.08, .06]	[-.05, .21]	[-.05, .21]
	Subjective	.02	-.01	.03	-.05	-.03
		[-.01, .05]	[-.01, .04]	[-.02, .07]	[-.13, .03]	[-.11, .05]
Loyalty	Objective	-.003	-.003	-.01	-.26***	-.26***
		[-.05, .04]	[-.04, .03]	[-.06, .05]	[-.47, -.09]	[-.46, -.10]
	Subjective	.01	.01	.02	.35***	.37***
		[-.01, .05]	[-.01, .03]	[-.01, .05]	[.26, .46]	[.28, .47]
Authority	Objective	-.002	-.003	-.01	-.22***	-.23***
		[-.03, .02]	[-.04, .03]	[-.05, .04]	[-.41, -.08]	[-.40, -.09]
	Subjective	.01	.01	.01	.30***	.31***
		[-.01, .03]	[-.01, .03]	[-.01, .04]	[.22, .39]	[.23, .40]
Sanctity	Objective	-.001	-.002	-.003	-.25***	-.25***
		[-.02, .02]	[-.03, .02]	[-.03, .03]	[-.44, -.12]	[-.44, -.12]
	Subjective	.004	.01	.01	.27***	.28***
		[-.01, .02]	[-.01, .02]	[-.01, .03]	[.18, .37]	[.19, .38]

Note. * p < .05; ** p < .01; *** p < .001. Values between the brackets indicate bias-corrected bootstrap 95% confidence intervals

4.4 Discussion

This study aimed at exploring the relationship between social class and moral judgments through social cognitive tendencies. For this purpose, we conducted a full SEM. We observed a reserve association between objective indices of social class and binding foundations. In other words, participants who were at low levels of objective social class were more likely to engage in

moral judgments based on the foundations of loyalty, authority, and sanctity; thus, partially confirming the relevant hypothesis. However, objective indices of social class did not have a significant association with individualizing foundation as opposed to the positive association hypothesized by the study. Although the same pattern would be expected for subjective index of social class, the finding was the exact opposite. That is, subjective index was negatively related to the binding foundations.

Indirect effects were not significant in both models, supporting the null hypothesis. Moreover, solipsistic and contextualist SCT were positively associated with individualizing foundations. This was as hypothesized for solipsistic tendencies, but in contradiction with the predictions made for the contextualist tendencies. On the other hand, as expected, contextualist SCT and the foundation of sanctity were positively related. Solipsistic SCT positively predicted the foundation of loyalty, which was the opposite of the predictions. These findings suggest that there is a relationship between SCT and moral foundations, but it was not as expected and seemingly irregular.

5. STUDY 2

Study 2 used a concurrent double randomization design (Pirlott & MacKinnon, 2016). We manipulated both the predictor and mediator variable simultaneously in a two-factor experimental design. Participants were randomly assigned to different levels of subjective index of social class and social cognitive tendencies using the priming method (Bargh, 2006). As suggested by Pirlott and MacKinnon (2016), we added a manipulation check to determine the causal effect of the mediator. Following the manipulations, participants read vignettes of moral violation (Clifford, Iyengar, Cabeza, & Sinnott-Armstrong, 2015), and rated the degree to which they have felt wrong. This method was chosen to replicate the findings using a different measure from MFQ. Finally, as in the first study, participants also filled out and items about objective indices of social class, demographics, religiosity, and political ideology in a randomized order.

5.1 Participants and procedure

Participants were recruited through Amazon's MTurk platform. The initial sample comprised of 200 participants. Those who failed to respond to the manipulations and those who failed to provide the correct answer to the attention check items were excluded. The final sample consisted of 160 participants (67.5% female). Participants' age ranged from 18 to 80 ($M = 35.76$, $SD = 11.82$).

Considering the recommendations for mediation analysis in a concurrent double randomization design, we conducted a power analysis for ANCOVA using GPower 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009) where $f = .25$, $\alpha = .05$, $1 - \beta = .8$, number of groups = 4, numerator $df = 1$, and number of covariates = 3. The result indicated a total sample size of 128. Therefore, each cell size was determined to be at least 32 to achieve .8 power for a medium effect size.

5.2 Materials and measures

5.2.1 Manipulation of subjective index of social class

Manipulation was based on a prior study that successfully manipulated subjective SES using a priming method (Kraus et al., 2009, 2010, 2013). Participants were showed the ladder used to assess subjective index of social class. Then, they were told "Think of the ladder above as representing where people stand in the important groups to which they belong." Next, in the high status condition, they were given the following instruction "Now please compare yourself to the people at the very bottom rung of the ladder. These are people who have absolutely NO WEALTH, EDUCATION, and JOB in ALL of their important social groups. In particular, we'd like you to COMPARE YOURSELF TO THESE PEOPLE in terms of your own wealth, education, and job status in your important groups." Participants in the low status conditions were given similar instructions but asked to compare themselves with someone with more wealth, education, and a better job status. Following this procedure, all participants were instructed to think of and write down at least three sentences about how "the similarities and differences" between them and the comparison target would affect a getting-acquainted interaction.

As a manipulation check, participants were asked, "Where would you place yourself on this ladder relative to these people on the very bottom [top] rung?" Responses were made on a scale from 1 (bottom rung) to 10 (top rung) ($M = 5.31$, $SD = 1.68$).

5.2.2 Manipulation of social cognitive tendencies

The method used to induce a sense of low social control (Kraus et al., 2009) was adapted to prime social cognitive tendencies. Essentially, we attempted to prime people to feel more or less in control because of the strong relationship between social cognitive tendencies and control (Kraus et al., 2012). Namely, solipsistic SCT is thought to be related to higher levels of control, but contextualist SCT is related to lower level of control.

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In the low level of control condition, participants read the following instruction: "It is a scientific fact that we cannot control every aspect of our lives. Depending on some factors, you will not be able to be in control in your life, and have trouble to get what you want. We want to hear about times when you have felt out of control and unable to achieve something you set out to do. Please provide at least three examples below."

In the high level of control condition, participants read the following instruction: "It is a scientific fact that the more control you believe you have, the better you will succeed at the things you try and do. If you feel optimistic and able to make the best of your situation, you will do very well. We want to hear about times when you have felt in control and achieved things well. Please provide at least three examples below."

After priming, manipulation was checked by a direct measure of control on a 9-point Likert scale (i.e., Considering your own life, how much do you think you have control over things?; $M = 5.94$, $SD = 1.61$) as well as SCT scale and SCT vignettes.

5.2.3 Social cognitive tendencies (SCT)

The same vignettes and scale in Study 1 were used.

5.2.4 Moral foundations vignettes

Vignettes for moral foundations were used to assess moral judgments (Clifford et al., 2015; see Appendix G). Hypothetical scenarios were rated on how wrong they feel on a 5-point scale labeled not at all wrong, not too wrong, somewhat wrong, very wrong, and extremely wrong.

5.2.5 Social class, demographics and control variables

The same variables as in Study 1 were measured.

5.3 Results

Descriptive statistics and reliability coefficients of and correlations among variables are presented at Table 4 and 5, respectively.

Table 4

Descriptive summaries and reliabilities of the variables for Study 2

	α	M	SD	Min	Max
Social Class					
Income	-	4.37	2.00	1	8
Education	-	2.88	.70	1	4
Job Prestige	-	2.33	.80	1	3
Objective indices	.65	-.03	.78		
Subjective index	-	5.31	1.68	1	10
SCT					
SCT scale	.68	3.27	.89	1	7
Solipsistic SCT	.32	5.42	1.11	1	7
Contextualist SCT	.36	4.49	1.12	1	7
Moral Foundations					
Care	.82	5.79	1.05	1	6
Fairness	.71	5.85	.82	1	6
Loyalty	.88	4.39	1.38	1	6
Authority	.84	4.63	1.16	1	6
Sanctity	.82	5.36	1.30	1	6
Covariates					
Political Ideology	-	5.79	2.94	0	10
Religiosity	-	3.55	3.61	0	10
Age	-	35.76	11.82	18	80

Table 5

Correlations among variables for Study 2

	1	2	3	4	5	6	7	8	9	10	11	12
1. Social Class	1											
2. Subjective SES	.48**	1										
3. SCT scale	-.02	-.01	1									
4. SCT vignette	-.04	-.05	.11	1								
5. Care	.002	-.08	.11	-.03	1							
6. Fairness	.02	-.02	-.06	-.03	.59**	1						
7. Loyalty	-.14	.04	-.11	.07	.29**	.42**	1					
8. Authority	-.10	-.02	.06	.04	.45**	.46**	.68**	1				

	1	2	3	4	5	6	7	8	9	10	11	12
9. Sanctity	-.11	.04	-.15	.08	.25**	.45**	.66**	.49**	1			
10. Age	.11	-.10	-.07	-.13	.15	.22**	.04	.07	-.04	1		
11. Liberalism	-.01	-.20*	.21*	.001	.23**	.08	-.19*	-.10	-.19*	-.03	1	
12. Religiosity	-.11	.02	-.16*	.08	.02	.11	.20*	.23**	.29*	.02	-.34**	1

Note. * p < .05, ** p < .01, *** p < .001

5.3.1 Pilot tests of the manipulations

Recent large-scale replication studies have not been successfully replicated several studies using priming method to manipulate a variable of interest (e.g., Camarer et al., 2018; Open Science Colloboration, 2015). Hence, we first tested the manipulations in pilot studies. Indeed, this was also necessary because manipulation of the mediator was brand-new; designed for this study.

First, we tested the manipulation of social class. For this purpose, a sample of 102 participants were recruited via mTurk in exchange of monetary reward. Participants were randomly assigned to either low ($N = 41$; $M = 4.63$, $SD = 2.05$) or high ($N = 61$; $M = 5.33$, $SD = 1.63$) status social class condition. An independent-samples t-test indicated that the difference between the means of subjective index of social class across conditions was marginally significant in the expected way, $t\,(100) = 1.90$, $p = 06$.

Second, we tested the manipulation of sense of control as a substitute for social cognitive tendencies. For this purpose, a sample of 60 participants were recruited via mTurk in exchange of monetary reward. Participants were randomly assigned to either low ($N = 27$) or high ($N = 33$) level of control condition. Considering that this is a novel manipulation method for social cognitive tendencies, we measured it in two ways using both vignettes and scale from Study 1. There was no significant difference between conditions in terms of both solipsistic and contextualist tendencies when measured by vignettes, ps > .05. However, when measured by the scale, lower control group engaged in higher levels of contextual attributions compared to higher control group, $t(56) = 1.75$, $p = .08$.

5.3.2 Mediation model

In a concurrent double randomization design, the interaction between the predictor variable (i.e., low or high status of subjective index of social class) and the mediator variable

(i.e., low or high level of control) reveals the causal effects of the predictor and mediator on the outcome variable. However, a significant interaction effect does not provide evidence for the effect of the predictor on the mediator. For this reason, it is recommended to measure the mediator and analyze if it changes across the levels of the predictor variable so as to infer causality (Pirlott & MacKinnon, 2016).

Before conducting the analyses, we first checked if manipulations worked in the actual sample. Participants in high status social class condition reported significantly higher levels of subjective index of social class ($N = 82$, $M = 5.57$, $SD = 1.70$) compared to those in low status social class condition ($N = 78$, $M = 5.04$, $SD = 1.62$), $t(158) = 2.038$, $p = .043$. As for SCT manipulation, participants in high level of control condition reported significantly higher levels of control over their lives ($N = 75$, $M = 6.23$, $SD = 1.44$) compared to those in low level of control condition ($N = 85$, $M = 5.68$, $SD = 1.71$), $t(158) = 2.166$, $p = .032$. Similarly, participants in low level of control condition engaged in significantly more contextualist and less solipsistic attributions and ($M = 3.39$, $SD = .97$) compared to those in low level of control condition ($M = 3.14$, $SD = .78$), $t(158) = 1.788$, $p = .076$. However, we did not observe a similar pattern between the conditions in terms of SCT vignettes, $p > .05$.

Following the procedure outlined above, we first conducted a two-way analysis of variance (ANOVA) where the conditions for subjective index of social class and level of control served as independent variables, the moral foundations were the dependent variables, and age, religiosity and political ideology were control variables. Table 6 presents the findings for each moral foundation.

Table 6

Two-way ANOVA results for each moral foundation

	SS	df	MS	F	p	Partial η^2
Care						
Social Class	.244	1	.244	.233	.63	.002
SCT	.050	1	.050	.048	.827	.000
Social Class*SCT	.017	1	.017	.016	.898	.000
Error	153.938	147	1.047			
Total	5301.806	154				
Fairness						
Social Class	3.206	1	3.206	5.084	**.026**	.033
SCT	.000	1	.000	.000	.988	.000
Social Class* SCT	.390	1	.390	.618	.433	.004
Error	92.701	147	.631			
Total	5370.116	154				
Loyalty						
Social Class	5.157	1	5.157	2.838	.094	.019
SCT	.013	1	.013	.007	.934	.000
Social Class* SCT	.982	1	.982	.540	.464	.004
Error	265.348	146	1.817			
Total	3246.804	153				
Authority						
Social Class	5.884	1	5.884	4.576	**.034**	.030
SCT	.009	1	.009	.007	.933	.000
Social Class* SCT	.339	1	.339	.264	.608	.002
Error	189.032	147	1.286			
Total	3495.742	154				
Sanctity						
Social Class	4.822	1	4.822	3.252	.073	.022
SCT	.225	1	.225	.152	.698	.001
Social Class* SCT	6.217	1	6.217	4.193	**.042**	.028
Error	216.474	146	1.483			
Total	4665.051	153				

Note. SS = Sum of squares, df = Degrees of freedom, MS = Mean Square. Age, ideology, and religiosity were control variables.

The results did not indicate systematic significant main or interaction effects for moral foundations (i.e., care, fairness, loyalty, authority, and sanctity). However, there was a main effect of social class manipulation on the foundation of fairness. Participants in low status condition ($M = 6.02$, $SD = .66$) scored significantly higher in fairness than those in high status condition ($M = 5.69$, $SD = .93$), $F(1) = 5.08$, p = .026. Similarly, there was a main effect of the

social class manipulation on the foundation of authority. Participants in low status condition (M =

4.83, SD = 1.19) scored significantly higher in authority than those in high status condition (M =

4.42, SD = 1.11), $F(1)$ = 4.576, p = .034.

Table 7

Means and standard deviations of conditions

Social Class manipulation	SCT manipulation	Care	Fairness	Loyalty	Authority	Sanctity
Low	Low	5.88 (1.03)	5.97 (.69)	4.48 (1.42)	4.79 (1.26)	5.28 (1.24)
	High	5.83 (1.07)	6.06 (.64)	4.65 (1.26)	4.87 (1.14)	5.77 (1.04)
	Total	5.85 (1.05)	6.02 (.66)	4.57 (1.33)	4.83 (1.19)	5.54 (1.16)
High	Low	5.76 (1.07)	5.77 (.90)	4.28 (1.34)	4.48 (1.18)	5.32 (1.42)
	High	5.61 (1.03)	5.57 (.96)	4.16 (1.52)	4.34 (1.02)	5.05 (1.38)
	Total	5.70 (1.05)	5.69 (.93)	4.23 (1.41)	4.42 (1.11)	5.21 (1.40)
Total	Low	5.81 (1.05)	5.86 (.82)	4.37 (1.37)	4.61 (1.21)	5.30 (1.33)
	High	5.73 (1.05)	5.84 (.83)	4.43 (1.40)	4.63 (1.11)	5.45 (1.25)
	Total	5.77 (1.05)	5.85 (.82)	4.40 (1.38)	4.62 (1.16)	5.37 (1.29)

We found a significant interaction effect of social class and SCT manipulations on the

foundation of sanctity. As shown in Figure 3, participants who were in low conditions of both

manipulations (M = 5.28, SD = 1.24) scored significantly higher than those who were in high

conditions of both manipulations (M = 5.05, SD = 1.38), $F(1)$ = 4.193, p = .042. Descriptive

statistics of the conditions are present in Table 7.
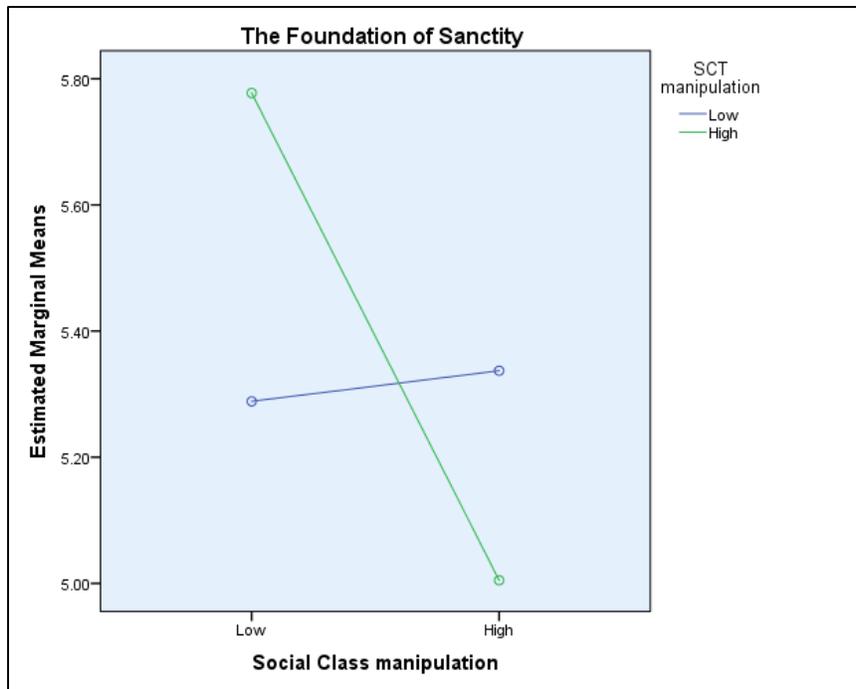
Figure 3. Interaction effect of social class and SCT on sanctity.

Finally, we checked if there was an effect of social class manipulation on SCT to confirm the meditated effect. Therefore, we conducted independent-samples t-tests where control over life (as used in manipulation check), SCT scale, and SCT vignette were dependent variables. The results indicated that there was a marginally significant effect of social class manipulation on SCT scale[3], $t(158) = 1.615$, p = .108, but no effect on control over life and SCT vignettes, ps > .05. However, the effect found by SCT scale was the opposite of what was expected.

5.4 Discussion

Study 2 attempted to establish a causal link between social class and moral judgments through social cognitive tendencies. For this purpose, both (subjective) social class and social cognitive tendencies were manipulated. Pilot studies provided some evidence showing that the manipulations work, which was also the case in the actual study.

We ran the analyses for the mediation model as recommended by Pirlott and MacKinnon (2010). The results partially confirmed the hypothesis regarding the foundation of sanctity. As

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expected, people who were in low conditions of both manipulations scored higher on sanctity compared to those who were in high conditions of both manipulations. However, the effect of social class on SCT was reversed. This finding poses a contract with earlier research that reported higher contextual attributions by individuals lower levels of social class compared to those from higher levels of social class (e.g., Grossmann & Varnum).

Apart from this finding, the data were in favor of the null hypotheses of the mediation models. However, we detected a main effect of social class on the foundations of fairness and authority. The effect on fairness was the opposite of the study's hypothesis, but the effect on authority was in line with the study's expectations.

Finally, considering that the findings did not support the hypotheses in either Study 1 or in Study 2, we did not continue with Study 3. Instead, we attempted to conduct exploratory analyses that can guide future studies (See Appendix H).

6. GENERAL DISCUSSION

Across two studies, this research explored the effect of social class on moral judgments through social cognitive judgments. The first study attempted to unfold this relationship by using a cross-sectional design and conducting structural equation modeling. The second study adopted an experimental method by manipulating both social class in the form of subjective status and social cognitive tendencies in the form of sense of control.

Both studies revealed similar patterns regarding how social class relates to moral judgments. Different models with various conceptualizations of the variables and statistical approaches, social cognitive tendencies did not mediate the association between social class and moral judgments. Also, we did not observe a systematic or theoretically meaningful relationship between SCT and moral foundations.

However, in both studies, there was a direct/main effect of social class on binding moral foundations (i.e., loyalty, authority, and sanctity). Objective indices were negatively related to them as expected in Study 1 and in exploratory analyses (see Appendix H). In other words, the lower a person is on objective indices, the higher ratings in binding foundations. On the contrary, the subjective index of social class was positively related to binding foundations in Study 1. A participant who perceived herself higher in the social hierarchy was more likely to engage in judgments based on the binding foundations. This particular finding might be because participants who perceive themselves to be at the higher rungs of the social ladder are also more likely to internalize societal norms and cultural values (that are crucial in the process of acquiring moral intuitions) better and more powerfully than those at the lower levels of social hierarchy.

Alternatively, participants might be basing their answer on other concepts than income, education, and job when responding to the item asking their relative place in society in terms of the aforementioned concepts (i.e., subjective index of social class). For instance, Andersson (2018) demonstrates that traditional SES markers are differently associated with different levels of subjective social class. While a linear association would expect those with highest subjective social class to also have the highest income, education and job prestige, these objective indices of social class actually reached a plateau between the 8th and 9th rung (out of 10), and then decreased. This effect may help explain the contrast between the two types of social class operationalization. Nevertheless, in Study 2, participants in low status condition, on average, scored higher in each moral foundation, although it was not a significant difference for the foundations of care and loyalty.

In conclusion, although results are not as hypothesized, they are similar across studies, different conceptualizations and statistical approaches. That is, there seems to be no mediating effect of social cognitive tendencies on the relationship between social class and moral

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judgments, but objective and subjective indices relate to binding foundations; the former

negatively, and the latter positively.

7. LIMITATIONS AND FUTURE DIRECTIONS

The present research poses a number of limitations. First, social cognitive tendencies were

not directly measured since there is currently no direct measurement tools for it. Hence, we

attempted to operationalize it in two different ways. Nevertheless, different measurement of SCT

may expose associations that have not been found in the current research. Second, the

experimental manipulations were solely based on priming method. Future research should

attempt to better manipulate and measure both social class and SCT. Finally, although the present

research had adequate statistical power, the true effect sizes in population may be smaller.

Therefore, an investigation of the association of social class with moral judgments with greater

sample sizes will help unfold the true effect sizes.

Finally, this research revealed a main of social class on binding moral foundations.

However, this relationship was reserved for objective and subjective indices in spite of the high

correlation between them, $r(527) = .48$, $p < .001$. This contrast in their relations to moral

judgments requires further investigation.

REFERENCES

Abend, G. (2011). Thick concepts and the moral brain. *European journal of sociology, 52*(01), 143-172.

Adler, N. E. (2009). Health disparities through a psychological lens. *American Psychologist*, *64*(8), 663.

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy, White women. *Health psychology, 19*(6), 586.

Andersson, M. A. (2015). How do we assign ourselves social status? A cross-cultural test of the cognitive averaging principle. *Social science research, 52*, 317-329.

APA. (2006). Report of the APA task force on socioeconomic status.

Aslund, C., Starrin, B., Leppert, J., & Nilsson, K. W. (2009). Social status and shaming experiences related to adolescent overt aggression at school. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, *35*(1), 1-13.

Bandura, A. (1991). Social cognitive theory of moral thought and action. *Handbook of moral behavior and development, 1*, 45-103.

Bargh, J. A. (2006). What have we been priming all these years? On the development, mechanisms, and ecology of nonconscious social behavior. *European journal of social psychology, 36*(2), 147-168.

Bargh, J. A., & Williams, E. L. (2006). The automaticity of social life. *Current directions in psychological science*, 15(1), 1-4.

Bjornsdottir, R. T., Alaei, R., & Rule, N. O. (2017). The perceptive proletarian: Subjective social class predicts interpersonal accuracy. *Journal of Nonverbal Behavior*, *41*(2), 185-201.

Blasi, A. (1980). Bridging moral cognition and moral action: A critical review of the literature. *Psychological bulletin, 88*(1), 1.

Bourdieu, P. (1987). What makes a social class? On the theoretical and practical existence of groups. *Berkeley journal of sociology, 32*, 1-17.

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk a new source of inexpensive, yet high-quality, data?. *Perspectives on psychological science, 6*(1), 3-5.

Camerer, C. F., Dreber, A., Holzmeister, F., Ho, T. H., Huber, J., Johannesson, M., ... & Altmejd, A. (2018). Evaluating the replicability of social science experiments in Nature and Science between 2010 and 2015. *Nature Human Behaviour*, 1.

Clifford, S., Iyengar, V., Cabeza, R., & Sinnott-Armstrong, W. (2015). Moral foundations vignettes: a standardized stimulus database of scenarios based on moral foundations theory. *Behavior research methods, 47*(4), 1178-1198.

Côté, S. (2011). How social class shapes thoughts and actions in organizations. *Research in organizational behavior, 31*, 43-71.

Côté, S., Piff, P. K., & Willer, R. (2013). For whom do the ends justify the means? Social class and utilitarian moral judgment. *Journal of Personality and Social Psychology, 104*(3), 490.

De Waal, F. B. (1996). *Good natured (No. 87)*. Harvard University Press.

De Waal, F. B. (1997). The chimpanzee's service economy: food for grooming. *Evolution and Human Behavior*, 18(6), 375-386.

Dietze, P., & Knowles, E. D. (2016). Social Class and the Motivational Relevance of Other Human Beings Evidence From Visual Attention. *Psychological Science*, 27(11), 1517-1527.

Ding, Y., Wu, J., Ji, T., Chen, X., & Van Lange, P. A. (2017). The rich are easily offended by unfairness: Wealth triggers spiteful rejection of unfair offers. *Journal of Experimental Social Psychology, 71*, 138-144.

Evans, J. S. B. (2008). Dual-processing accounts of reasoning, judgment, and social cognition. *Annual Review Psychology*, *59*, 255-278.

Everett, J. A. (2013). The 12 item social and economic conservatism scale (SECS). *PLoS ONE 8*(12): e82131.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*, 1149-1160.

Fiske, A. P. (1991). *Structures of social life: The four elementary forms of human relations: Communal sharing, authority ranking, equality matching, market pricing*. Free Press.

Fiske, S. T., & Markus, H. R. (Eds.). (2011). *Facing social class*. New York, NY: Russell Sage.

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological science, 18*(3), 233-239.

Gilligan, C. (1982). *In a different voice*. Harvard University Press.

Graham, J., Haidt, J., Koleva, S., Motyl, M., Iyer, R., Wojcik, S. P., & Ditto, P. H. (2012). Moral foundations theory: The pragmatic validity of moral pluralism. *Advances in Experimental Social Psychology*, 47, 55–130.

Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of personality and social psychology, 96*(5), 1029.

Gramsci, A. (1988). *Prison letters*. Pluto Pr.

Greene, J., & Haidt, J. (2002). How (and where) does moral judgment work?. *Trends in cognitive sciences, 6*(12), 517-523.

Greene, J. D., Nystrom, L. E., Engell, A. D., Darley, J. M., & Cohen, J. D. (2004). The neural bases of cognitive conflict and control in moral judgment. *Neuron, 44*(2), 389-400.

Grossmann, I., & Huynh, A. C. (2013). Where Is the Culture in Social Class?. *Psychological Inquiry, 24*(2), 112-119.

Grossmann, I., & Varnum, M. E. (2010). Social class, culture, and cognition. *Social Psychological and Personality Science*.

Haidt, J. (2001). The emotional dog and its rational tail: a social intuitionist approach to moral judgment. *Psychological review, 108*(4), 814.

Haidt, J. (2008). Morality. *Perspectives on psychological science, 3*(1), 65-72.

Haidt, J., & Graham, J. (2006). Planet of the Durkheimians, where community, authority, and sacredness are foundations of morality. *Where Community, Authority, and Sacredness are Foundations of Morality* (December 11, 2006).

Haidt, J., & Joseph, C. (2004). Intuitive ethics: How innately prepared intuitions generate culturally variable virtues. *Daedalus, 133*(4), 55-66.

Haidt, J., & Kesebir, S. (2010). Morality. In S. T. Fiske, D. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 797–832) (5th ed.). Hoboken, NJ: Wiley.

Haidt, J., Koller, S. H., & Dias, M. G. (1993). Affect, culture, and morality, or is it wrong to eat your dog?. *Journal of personality and social psychology, 65*(4), 613.

Hauser, M. D. (2006, August). Moral minds: How nature designed our universal sense of right and wrong. New York: Ecco.

Hitlin, S., & Vaisey, S. (2013). The new sociology of morality. *Sociology, 39*(1), 51.

Horberg, E. J., Oveis, C., Keltner, D., & Cohen, A. B. (2009). Disgust and the moralization of purity. *Journal of personality and social psychology, 97*(6), 963.

Hout, M. (2007). How Class Works in Popular Conception: Most Americans Identify with the Class Their Income, Occupation, and Education Implies for Them.

Kisbu-Sakarya, Y., MacKinnon, D. P., & Miočević, M. (2014). The distribution of the product explains normal theory mediation confidence interval estimation. *Multivariate behavioral research, 49*(3), 261-268.

Kitayama, S., Ishii, K., Imada, T., Takemura, K., & Ramaswamy, J. (2006). Voluntary settlement and the spirit of independence: Evidence from Japan's" northern frontier.". *Journal of personality and social psychology, 91*(3), 369.

Kohlberg, L. (1971). Stages of moral development. *Moral education*, 23-92.

Kohlberg, L., & Kramer, R. (1969). Continuities and discontinuities in childhood and adult moral development. *Human development, 12*(2), 93-120.

Kraus, M. W., Adler, N., & Chen, T. W. D. (2013). Is the association of subjective SES and self-rated health confounded by negative mood? An experimental approach. *Health Psychology, 32*(2), 138.

Kraus, M. W., & Keltner, D. (2009). Signs of socioeconomic status: A thin-slicing approach. *Psychological science, 20*(1), 99-106.

Kraus, M. W., & Keltner, D. (2013). Social class rank, essentialism, and punitive judgment. *Journal of Personality and Social Psychology, 105*(2), 247.

Kraus, M. W., Piff, P. K., & Keltner, D. (2009). Social class, sense of control, and social explanation. *Journal of personality and social psychology, 97*(6), 992.

Kraus, M. W., Piff, P. K., & Keltner, D. (2011). Social class as culture: The convergence of resources and rank in the social realm. *Current Directions in Psychological Science, 20*(4), 246-250.

Kraus, M. W., Piff, P. K., Mendoza-Denton, R., Rheinschmidt, M. L., & Keltner, D. (2012). Social class, solipsism, and contextualism: how the rich are different from the poor. *Psychological review, 119*(3), 546.

Kraus, M. W., & Stephens, N. M. (2012). A road map for an emerging psychology of social class. *Social and Personality Psychology Compass, 6*(9), 642-656.

Krebs, D. L. (2008). Morality: An evolutionary account. *Perspectives on Psychological Science, 3*(3), 149-172.

Lammers, J., Galinsky, A. D., Gordijn, E. H., & Otten, S. (2012). Power increases social distance. *Social Psychological and Personality Science, 3*(3), 282-290.

LeVine, R. A. (1990). Enculturation: A biosocial perspective on the development of self. In D. Cicchetti & M. Beeghly (Eds.), *The self in transition: Infancy to childhood* (pp. 99-117). Chicago, IL, US: University of Chicago Press.

Marx, K., & Engels, F. (1973). *Manifesto of the Communist Party*. In Karl Marx, The revolutions of 1848: Political writings (Vol. 1, pp. 62–98). Harmondsworth, United Kingdom: Penguin. (Original work published in 1848).

Markus, H. R., & Kitayama, S. (2010). Cultures and selves A cycle of mutual constitution. *Perspectives on Psychological Science, 5*(4), 420-430.

Muthén, L. K., & Muthén, B. O. (2005). M*plus: Statistical analysis with latent variables: User's guide* (pp. 1998-2012). Los Angeles: Muthén & Muthén.

Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science, 349* (6251), aac4716.

Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: evaluation of theoretical assumptions and meta-analyses. *Psychological bulletin, 128*(1), 3.

Piaget, J. (1965). The stages of the intellectual development of the child. Educational psychology in context: *Readings for future teachers*, 98-106.

Piff, P. K., Stancato, D. M., Côté, S., Mendoza-Denton, R., & Keltner, D. (2012). Higher social class predicts increased unethical behavior. *Proceedings of the National Academy of Sciences, 109*(11), 4086-4091.

Pirlott, A. G., & MacKinnon, D. P. (2016). Design approaches to experimental mediation. *Journal of Experimental Social Psychology, 66*, 29-38.

Quon, E. C., & McGrath, J. J. (2014). Subjective socioeconomic status and adolescent health: A meta-analysis. *Health Psychology, 33*(5), 433.

Shweder, R. A. (1990). Ethical relativism: Is there a defensible version?. *Ethos, 18*(2), 205-218.

Snarey, J. R. (1985). Cross-cultural universality of social-moral development: a critical review of Kohlbergian research. *Psychological bulletin, 97*(2), 202.

Snibbe, A. C., & Markus, H. R. (2005). You can't always get what you want: educational attainment, agency, and choice. *Journal of personality and social psychology, 88*(4), 703.

Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R. (2012). Unseen disadvantage: how American universities' focus on independence undermines the academic performance of first-generation college students. *Journal of personality and social psychology, 102*(6), 1178.

Stephens, N. M., Markus, H. R., & Townsend, S. S. (2007). Choice as an act of meaning: the case of social class. *Journal of personality and social psychology, 93*(5), 814.

Stephens, N. M., & Townsend, S. S. (2013). Rank is not enough: Why we need a sociocultural perspective to understand social class. *Psychological Inquiry, 24*(2), 126-130.

Triandis, H. C., McCusker, C., & Hui, C. H. (1990). Multimethod probes of individualism and collectivism. *Journal of personality and social psychology, 59*(5), 1006.

Trompenaars, F. (2003). Did the pedestrian die. *Insights from the Greatest Culture Guru.*

Turiel, E. (1983). *The development of social knowledge: Morality and convention*. Cambridge University Press.

Turiel, E. (2002). *The culture of morality: Social development, context, and conflict*. Cambridge University Press.

Vallerand, R. J., Deshaies, P., Cuerrier, J. P., Pelletier, L. G., & Mongeau, C. (1992). Ajzen and Fishbein's theory of reasoned action as applied to moral behavior: A confirmatory analysis. *Journal of personality and social psychology, 62*(1), 98.

FOOTNOTES

[1] This research initially comprised of three studies as this is a preregistered research (https://osf.io/vdkp7/). However, for the reasons listed at the end of Study 2, we did not conduct the Study 3.

[2] We also used a scale that aimed to measure SCT (Kraus et al., 2009). This was an 8-item scale with 7-point Likert scale that gauges internal and external attributions. The scale is available in Appendix B. However, we do not report the findings for this scale in the paper because it was not correlated with the primary measure of SCT (i.e., vignettes). Still, the results can be found in Appendix H.

[3] Although SCT scale and vignettes were not correlated, we still used both them because of the experimental manipulation.

APPENDIX A – Social cognitive tendencies vignettes

We would like to find out more about the effects of social perceptions of different people. You will be presented with several situations. Each of them will describe a person involved in a certain activity. You will be asked to think about different reasons for this person's behavior, as well as to evaluate this person's behavior. Please, carefully read the situation and answer the following questions.

Situation 1

Sara Martin is a top executive of a company "XinK Int." "XinK Int." is one of the leading pharmaceutical companies in the US. However, the company has experienced a decline in their public image which has lead to a decline in sales in the last half a year. Recently, the company started several activities, which were focused on the stabilization of their leading position in the pharmaceutical market.

Not too long ago, "XinK Int." developed a new drug for treating malaria. Shortly after that several African countries experienced an outbreak of malaria. As soon as Sara Martin found out about this event, she decided to donate a lot of medicine to the regions in Africa that needed assistance. Local mass media showed different reactions to this news.

Situation 2

Steve Jensen is the president of a large construction company in New York. Last year, local government fined the company, as unstable scaffolding caused problems resulting in injuries to several people. Recently, Steve Jensen started a special discount house building program for large families. Also, he decided to donate a large sum of money to a local orphanage.

Situation 3

Since his childhood, David Conner wanted to become a doctor. Now, he is a young surgeon at a local hospital in the Baltimore area. During his first year he has had a wonderful track record.

However, due to a recent argument with the head physician, any little mistake would mean that he would be fired.

Situation 4

Emma Peterson is a banker at a large bank in Cincinnati, IN. Several major pension funds are heavily invested in the bank. In the last couple of months, the bank lost a large amount of money on the stock market. The current financial difficulties of the bank may devalue the bank's shares. However, Emma Peterson did not reveal the loss to the company's shareholders in order to avoid causing panic. Instead, Emma Peterson reported a sizeable profit at the annual meeting of the shareholders, hoping that the annual balance of the company would still be positive in comparison to the last year.

Please, carefully read the following statements and indicate your level of agreement with each of them. (1 = *Strongly Disagree*, 7 = *Strongly Agree*)

__X's personality primarily influenced her behavior.

__Particular circumstances primarily influenced X's behavior.

__X would have acted differently if her personality had been different.

__X would have acted differently if the particular circumstances had been different.

APPENDIX B – Social cognitive tendencies scale

Given the behaviors/states below, how much do you think that people are individually

responsible or that outside forces are primarily responsible?

(1 = *individual primarily responsible*, 7 = *outside forces primarily responsible*)

__Getting into medical school

__Having low income

__Receiving proper healthcare

__Contracting the HIV virus

__Publishing a book

__Failing a class at school

__Being obese

__Being laid-off at work

APPENDIX C – Moral foundations questionnaire

Part I – Moral Relevance

(Responded to using the following response options: not at all relevant , not very relevant,

slightly relevant, somewhat relevant, very relevant, extremely relevant)

Harm:

__Whether or not someone suffered emotionally

__Whether or not someone cared for someone weak or vulnerable

__Whether or not someone was cruel

Fairness:

__Whether or not some people were treated differently from others

__Whether or not someone acted unfairly

__Whether or not someone was denied his or her rights

Ingroup:

__Whether or not someone's action showed love for his or her country

__Whether or not someone did something to betray his or her group

__Whether or not someone showed a lack of loyalty

Authority:

__Whether or not someone showed a lack of respect for authority

__Whether or not someone conformed to the traditions of society

__Whether or not an action caused chaos or disorder

Purity:

__Whether or not someone violated standards of purity and decency

__Whether or not someone did something disgusting

__Whether or not someone acted in a way that God would approve of

Part II – Moral Judgments

(Responded to using the following response options: strongly disagree, moderately disagree, slightly disagree, slightly agree, moderately agree, strongly agree)

Care:

__Compassion for those who are suffering is the most crucial virtue.

__One of the worst things a person could do is hurt a defenseless animal.

__It can never be right to kill a human being.

Fairness:

__When the government makes laws, the number one principle should be ensuring that everyone is treated fairly.

__Justice is the most important requirement for a society.

__I think it's morally wrong that rich children inherit a lot of money while poor children inherit nothing.

Loyalty:

__I am proud of my country's history.

__People should be loyal to their family members, even when they have done something wrong.

__It is more important to be a team player than to express oneself.

Authority:

__Respect for authority is something all children need to learn.

__Men and women each have different roles to play in society.

__If I were a soldier and disagreed with my commanding officer's orders, I would obey anyway because that is my duty.

Sanctity:

__People should not do things that are disgusting, even if no one is harmed.

__I would call some acts wrong on the grounds that they are unnatural.

__Chastity is an important and valuable virtue.

APPENDIX D – Mplus scripts

Title: Syntax for Model 1 - VIGNETTES;

Data: file is semdata.dat;

Variable:
Names = age gender race2 income edu edu2 pedu medu dedu mjob djob job job2 pjob sss
d1p1 d1c1 d1p2 d1c2 d1o ud1p1 ud1c1 ud1p2 ud1c2 d2p1 d2c1 d2p2 d2c2 ud2p1
ud2c1 ud2p2 ud2c2 k1-k8 mft1_1-mft1_17 mft2_17 mft2_1-mft2_16 ideology
relgn1 relgn2 zedu zincome zjob zpedu zpjob zsss person circum d_pers ud_pers d_cont
ud_cont kraus harm fair loyal auth pure ind binding rharm rfair rloyal rauth rpure jharm
jfair jloyal jauth jpure zedu2 zjob2 ses1 ses4-ses10;

usevar =mft1_1-mft1_5 mft1_7-mft1_16 mft2_1-mft2_5 mft2_7-mft2_16 sss d1p1
d1p2 ud1p1 ud1p2 d2p1 d2p2 ud2p1 ud2p2 d1c1 d1c2 ud1c1 ud1c2 d2c1 d2c2 ud2c1 ud2c2
income edu job;

Missing = all (-99);

Analysis:
bootstrap=1000;

Model:
objectiv by income edu job; !objective indices of social class;

solip by d1p1 d1p2 ud1p1 ud1p2 d2p1 d2p2 ud2p1 ud2p2;
context by d1c1 d1c2 ud1c1 ud1c2 d2c1 d2c2 ud2c1 ud2c2;

!sct by k1-k8; !for model with sct scale as its mediatior (remember to add the variables in usevar
as well);

care by mft1_1 mft1_7 mft1_12 mft2_1 mft2_7 mft2_12;
fair by mft1_2 mft1_8 mft1_13 mft2_2 mft2_8 mft2_13;
loyal by mft1_3 mft1_9 mft1_14 mft2_3 mft2_9 mft2_14;
auth by mft1_4 mft1_10 mft1_15 mft2_4 mft2_10 mft2_15;
sanct by mft1_5 mft1_11 mft1_16 mft2_5 mft2_11 mft2_16;

solip context on ses1 sss;
harm fair loyal auth sanct on solip;
harm fair loyal auth sanct on context;

harm fair loyal auth sanct on objectiv sss; !sss is subjective index of social class;

objectiv with sss;
solip with context;

```
UD2C2    WITH UD2C1;
UD1P2    WITH UD1P1;
UD1C2    WITH UD1C1;
D1C2     WITH D1C1;
D2P2     WITH D2P1;
D2C2     WITH D2C1;
UD2P2    WITH UD2P1;
D1P2     WITH D1P1 ;
D2P1     WITH UD1P1;
D2C2     WITH UD1C1;
D2C2     WITH UD1C2;
UD2C2    WITH D1C2 ;
UD2P1    WITH D1P1;
UD2P2    WITH D1P2;
D2C1     WITH UD1C1;
UD1P1    WITH MFT2_2 ;
D2C1     WITH UD1C2;

MFT2_15  WITH MFT2_4;
MFT1_14  WITH MFT1_9;
MFT2_2   WITH MFT2_1;
MFT1_5   WITH MFT1_4;
MFT1_11  WITH MFT1_4;
MFT1_5 MFT1_9;
MFT1_12  WITH MFT1_9;
MFT1_12  WITH MFT1_11;
MFT1_14  WITH MFT1_5;
MFT1_15  WITH MFT1_4;
MFT1_15  WITH MFT1_11;
MFT1_15  WITH MFT1_12;
MFT1_16  WITH MFT1_7 ;
MFT1_16  WITH MFT1_15;
MFT2_2   WITH MFT1_1 ;
MFT2_2   WITH MFT1_2 ;
MFT2_2   WITH MFT1_10;
MFT2_2   WITH MFT1_16 ;
MFT2_3   WITH MFT1_5 ;
MFT2_3   WITH MFT1_11;
MFT2_4   WITH MFT1_10;
MFT2_4   WITH MFT1_11;
MFT2_4   WITH MFT2_3 ;
MFT2_7   WITH MFT2_1 ;
MFT2_7   WITH MFT2_4 ;
MFT2_8   WITH MFT1_1 ;
MFT2_8   WITH MFT1_3 ;
MFT2_8   WITH MFT2_1 ;
MFT2_8   WITH MFT2_4 ;
```

```
MFT2_8   WITH MFT2_5 ;
MFT2_9   WITH MFT1_4 ;
MFT2_9   WITH MFT2_3 ;
MFT2_10  WITH MFT1_4 ;
MFT2_10  WITH MFT1_11 ;
MFT2_10  WITH MFT2_4 ;
MFT2_11  WITH MFT1_1 ;
MFT2_11  WITH MFT1_4 ;
MFT2_11  WITH MFT2_5 ;
MFT2_11  WITH MFT2_8 ;
MFT2_11  WITH MFT2_10 ;
MFT2_12  WITH MFT1_15 ;
MFT2_12  WITH MFT2_7  ;
MFT2_12  WITH MFT2_9  ;
MFT2_13  WITH MFT1_12 ;
MFT2_13  WITH MFT1_15 ;
MFT2_13  WITH MFT2_4  ;
MFT2_13  WITH MFT2_9  ;
MFT2_13  WITH MFT2_12 ;
MFT2_14  WITH MFT1_12 ;
MFT2_14  WITH MFT1_13 ;
MFT2_14  WITH MFT2_9  ;
MFT2_14  WITH MFT2_12 ;
MFT2_14  WITH MFT2_13 ;
MFT2_15  WITH MFT2_9  ;
MFT2_16  WITH MFT1_11 ;
MFT2_16  WITH MFT1_16 ;
MFT2_16  WITH MFT2_2 ;
MFT2_16  WITH MFT2_8 ;
MFT2_16  WITH MFT2_9 ;
MFT2_16  WITH MFT2_11 ;
MFT2_16  WITH MFT2_14 ;
MFT1_16  WITH MFT1_11;
MFT2_8   WITH MFT2_2  ;
MFT2_12  WITH MFT1_14 ;
MFT2_15  WITH MFT2_3  ;
MFT2_15  WITH MFT2_13;
MFT1_8   WITH MFT1_2 ;
MFT2_15  WITH MFT1_11 ;

MODEL INDIRECT:
harm IND objectiv ;
fair IND objectiv;
loyal IND objectiv;
auth IND objectiv;
pure IND objectiv;
```

```
harm IND  sss;
fair IND  sss;
loyal IND  sss;
auth IND  sss;
pure IND  sss;

Output:
standardized modindices cinterval(bootstrap);
```

APPENDIX E – Factor loadings of the models from Study 1

	Model 1
Objective indices	
Income	.731
Education	.488
Job Prestige	.505
Solipsistic SCT	
Vignette 1 Item 1	.435
Vignette 1 Item 2	.545
Vignette 2 Item 1	.55
Vignette 2 Item 2	.547
Vignette 2 Item 1	.514
Vignette 2 Item 2	.561
Vignette 2 Item 1	.405
Vignette 2 Item 2	.49
Contextualist SCT	
Vignette 1 Item 1	.738
Vignette 1 Item 2	.517
Vignette 2 Item 1	.468
Vignette 2 Item 2	.489
Vignette 2 Item 1	.38
Vignette 2 Item 2	.424
Vignette 2 Item 1	.499
Vignette 2 Item 2	.46
SCT scale	
Item 1	-
Item 2	-
Item 3	-
Item 4	-
Item 5	-
Item 6	-
Item 7	-
Item 8	-
MFQ - Care	
MFQR1	.707
MFQR7	.731
MFQ12	.653
MFQJ1	.612
MFQJ7	.392
MFQJ12	.319

MFQ - Fairness

MFQR1	.767
MFQR7	.741
MFQ12	.751
MFQJ1	.54
MFQJ7	.319
MFQJ12	.199

MFQ - Loyalty

MFQR1	.823
MFQR7	.645
MFQ12	.701
MFQJ1	.538
MFQJ7	.49
MFQJ12	.521

MFQ - Authority

MFQR1	.778
MFQR7	.729
MFQ12	.484
MFQJ1	.548
MFQJ7	.524
MFQJ12	.45

MFQ - Sanctity

MFQR1	.694
MFQR7	.728
MFQ12	.693
MFQJ1	.627
MFQJ7	.649
MFQJ12	.641

Table 1

Unstandardized estimates for model 1

	Estimate	S.E.	p
Solipsistic SCT was regressed on			
Objective SES	-0.01	0.06	0.86
Subjective SES	0.036	0.04	0.32
Contextualist SCT was regressed on			
Objective SES	-0.018	0.08	0.82
Subjective SES	0.039	0.05	0.41
Care was regressed on			
Solipsistic SCT	0.306	0.12	0.01
Contextualist SCT	0.261	0.08	0.000
Objective SES	-0.004	0.06	0.95
Subjective SES	-0.001	0.04	0.98
Fairness was regressed on			
Solipsistic SCT	0.41	0.16	0.01
Contextualist SCT	0.272	0.09	0.000
Objective SES	0.085	0.06	0.18
Subjective SES	-0.054	0.04	0.17
Loyalty was regressed on			
Solipsistic SCT	0.301	0.13	0.02
Contextualist SCT	0.154	0.11	0.17
Objective SES	-0.257	0.1	0.01
Subjective SES	0.351	0.05	0.000
Authority was regressed on			
Solipsistic SCT	0.179	0.11	0.11
Contextualist SCT	0.17	0.1	0.09
Objective SES	-0.224	0.08	0.01
Subjective SES	0.298	0.04	0.000
Sanctity was regressed on			
Solipsistic SCT	0.121	0.11	0.28
Contextualist SCT	0.126	0.08	0.09
Objective SES	-0.25	0.08	0.000
Subjective SES	0.267	0.05	0.000
Objective SES correlated with			
Subjective SES	1.642	0.17	0.000

APPENDIX G – Moral foundations vignettes

How morally wrong do you think the behaviors presented below are?

(1 = *not at all wrong*, 7 = *extremely wrong*)

Care

__You see a teenage boy chuckling at an amputee he passes by while on the subway.

__You see a woman commenting out loud about how fat another woman looks in her jeans.

__You see a woman throwing her cat across the room for scratching the furniture.

__You see a man lashing his pony with a whip for breaking loose from its pen.

__You see a teacher hitting a student's hand with a ruler for falling asleep in class.

__You see a woman spanking her child with a spatula for getting bad grades in school.

Fairness

__You see a student copying a classmate's answer sheet on a makeup final exam.

__You see a tenant bribing a landlord to be the first to get their apartment repainted.

__You see a judge taking on a criminal case although he is friends with the defendant.

__You see an employee lying about how many hours she worked during the week.

__You see a professor giving a bad grade to a student just because he dislikes him.

__You see a politician using federal tax dollars to build an extension on his home.

Authority

__You see a player publicly yelling at his soccer coach during a playoff game.

__You see a teaching assistant talking back to the teacher in front of the classroom.

__You see a staff member talking loudly and interrupting the mayor's speech to the public.

__You see a man turn his back and walk away while his boss questions his work.

__You see a girl repeatedly interrupting her teacher as he explains a new concept.

__You see a teenage girl coming home late and ignoring her parents' strict curfew.

Loyalty

__You see a former US General saying publicly he would never buy any American product.

__You see a mayor saying that the neighboring town is a much better town.

__You see the US Ambassador joking in Great Britain about the stupidity of Americans.

__You see a teacher publicly saying she hopes another school wins the math contest.

__You see a Hollywood star agreeing with a foreign dictator's denunciation of the US.

__You see a man secretly voting against his wife in a local beauty pageant.

Sanctity

__You see a drunk elderly man offering to have oral sex with anyone in the bar.

__You see a woman having intimate relations with a recently deceased loved one.

__You see a homosexual in a gay bar offering sex to anyone who buys him a drink.

__You see an employee at a morgue eating his pepperoni pizza off of a dead body.

__You see a man searching through the trash to find women's discarded underwear.

__You see two first cousins getting married to each other in an elaborate wedding.

After hypothesis testing, we moved on to conduct further analyses to explore alternative explanations that the data might suggest.

Study 1

The primary aim of the exploratory analyses was to investigate the effect of different ways of operationalizing and modeling social class because past research measures social class in several ways. Notably, studies frequently utilize educational level of one's parents as a substitute of social class (e.g., Grossmann & Varnum, 2010; Stephens et al., 2007). In a similar fashion, literature is ripe with operationalization of social class based solely on subjective socioeconomic status (e.g., Cote et al., 2013; Kraus et al., 2009; Kraus & Keltner, 2013; Piff et al., 2012). Therefore, in exploratory analyses, we considered these methods to create latent variables of social class as well as theoretically meaningful combinations of them. That is, we combined the traditional markers of social class with subjective indicator as well as parental education and job prestige.

We also aimed to explore different conceptualizations of moral foundations. In particular, Graham et al. (2009) tests two-factor solution of moral foundations (i.e., individualizing and binding foundations) in addition to five factors of moral foundations that were already tested in both studies.

Considering all of the combinations, we tested 14 models following the same statistical approach used in Study 1.

Table 1

Fit statistics for exploratory analyses with different measures of social class

	χ^2	*df*	CFI	TLI	RMSEA
Model 1: Social class, SCT vignette, 5-factor MFs					

a. Income, education, job, parent education, parent job	2612.573	1110	.861	.840	.051
b. Parent education	2255.360	921	.871	.848	.053
c. Income, education, job, subjective index	2504.458	1061	.866	.845	.051
d. Subjective index	2265.005	921	.871	.849	.053
Model 2: Social class, SCT scale, 5-factor MFs					
a. Income, education, job, parent education, parent job	1656.069	738	.893	.869	.049
b. Parent education	1494.024	620	.894	.867	.052
c. Income, education, job, subjective index	1575.188	697	.898	.874	.049
d. Subjective index	1332.696	581	.908	.883	.050
Model 3: Social class, SCT vignettes, 2-factor MFs					
a. Model tested in study 1	2587.898	1075	.860	.840	.052
b. Parent education	2397.581	939	.859	.837	.054
c. Subjective index	2407.237	939	. 859	.839	.054
Model 4: Social class, SCT scale, 2-factor MFs					
a. Model tested in study 1	1654.305	709	.890	.866	.050
b. Parent education	1493.497	596	.890	.863	.054
c. Subjective index	1488.230	596	.891	.865	.053

Results and Discussion. Table 1 represents the fit statistics for all models. Models had similar statistical fit to the ones in Study 1. Values of the specific paths for all models are presented in Table 2a & 2b.

Any of the models did not reveal significant mediated effects between social class and moral judgments via SCT. This finding was also observed in Study 1, posing a contrast with the hypotheses of the study.

Across Model 1 versions, Model 1c & 1d indicated the same significant direct effects found in Study 1 for subjective index of social class. This is not surprising given that these indices were formed either partly or completely by the subjective index of social class. Model 1a and 1b that did not include the subjective index, however, showed no direct effects.

The link between social class and solipsistic SCT was positive in Model 1a and 1b, showing that participants from higher social levels engaged in more solipsistic tendencies. This finding is line with the predictions of this research. Yet, we did not find support for the

hypothesis that lower levels of social class is positively associated with contextualist SCT.

Except for solipsistic SCT and sanctity association, all paths from mediators to the moral

foundations were positive and significant, which is similar to the finding in Study 1 and equally

puzzling.

In Model 2, results were similar to those found for the effect of subjective index of social

class. Other than model 2c, as social class scores increased so did the contextualist SCT.

However, there was no relationship between SCT and moral foundations. Finally, positive direct

effects were found for the foundations of loyalty, authority and sanctity in Model 2c and 2d.

As for the models with two-factor solution of moral foundations, in Model 3a-3c, the

association of social class with SCT vignettes disappeared except for solipsistic SCT in Model

3b. However, the positive relation between SCT and moral foundations were intact. As present in

other models, individualizing foundation was not related to social class. In terms of direct effects,

Model 3a indicated the same pattern in Study 1 such that objective social class was negatively

related to binding foundation, whereas the sign of the relationship was positive for subjective

index of social class (also in Model 3c). Parental education was not related to binding

foundations in Model 3b. Finally, the same pattern of findings from Study 1's Model 2 were also

present in Model 4a. However, as in Model 3b, parental education was not related to either of

foundations.

Table 2a

Path values for Model 1a-1d and 3a-3c

	Model 1a	Model 1b	Model 1c	Model 1d	Model 3a	Model 3b	Model 3c
Solipsistic ON[a]							
Social Class	.14* (.06)	.11* (.05)	.08 (.06)	.09 (.05)	-.02 (.10)	.11* (.05)	.09 (.05)
Contextualist ON					.10 (.09)[c]		
Social Class	.09 (.06)	.08 (.05)	.05 (.07)	.06 (.06)	-.02 (.10)	.08 (.05)	.06 (.06)
Care ON							
Solipsistic	.24*** (.06)	.24*** (.06)	.24*** (.06)	.24*** (.06)	-	-	-

Contextualist	.31*** (.06)	.31*** (.06)	.31*** (.06)	.31*** (.06)	-	-	-
Social Class	-.04 (.06)	-.04 (.06)	-.01 (.06)	-.01 (.05)	-	-	-
Fairness ON							
Solipsistic	.29*** (.06)	.29*** (.06)	.28*** (.06)	.29*** (.06)	-	-	-
Contextualist	.29*** (.06)	.29*** (.06)	.28*** (.06)	.29*** (.06)	-	-	-
Social Class	-.06 (.06)	-.06 (.05)	.01 (.06)	-.03 (.05)	-	-	-
Loyalty ON							
Solipsistic	.19** (.06)	.18** (.06)	.17** (.06)	.16*** (.06)	-	-	-
Contextualist	.14* (.06)	.14* (.06)	.13* (.06)	.13* (.06)	-	-	-
Social Class	.03 (.06)	.05 (.05)	.25*** (06)	.34*** (.04)	-	-	-
Authority ON							
Solipsistic	.14*** (.06)	.14* (.06)	.12* (.06)	.11 (.06)	-	-	-
Contextualist	.18** (.06)	.18** (.06)	.16** (.06)	.16** (.06)	-	-	-
Social Class	-.003 (.06)	.01 (.05)	.24*** (.06)	.33*** (.06)	-	-	-
Sanctity ON							
Solipsistic	.10 (.06)	.10 (.06)	.09 (.06)	.08 (.06)	-	-	-
Contextualist	.14* (.06)	.14* (.06)	.13* (.06)	.13* (.06)	-	-	-
Social Class	-.01 (.06)	-.01 (.05)	.16** (.06)	.27*** (.06)	-	-	-
Solip. WITH^b							
Contextualist	.14* (.07)	.14* (.07)	.14* (.07)	.14* (.07)	.14* (.07)	.14* (.07)	.14* (.07)
Indiv. ON							
Solipsistic	-	-	-	-	.27*** (.06)	.27*** (.06)	.27*** (.06)
Contextualist	-	-	-	-	.31*** (.05)	.31*** (.05)	.31*** (.05)
Social Class	-	-	-	-	.06 (.09)	-.06 (.05)	-.02 (.05)
					-.06 (.07)		
Binding ON							
Solipsistic	-	-	-	-	.12* (.06)	.15* (.06)	.13* (.06)
Contextualist	-	-	-	-	.14* (.06)	.16** (.06)	.14** (.06)
Social Class	-	-	-	-	-.29*** (.08)	.02 (.05)	.33*** (.04)
					.53*** (.07)		

Note. [a] was regressed on; [b] was correlated with. [c] The second rows in social class denotes the values for subjective index of social class; whereas, the first row is for objective indices.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 2b

Path values for Model 2a-2d and 4a-4c

	Model 2a	Model 2b	Model 2c	Model 2d	Model 4a	Model 4b	Model 4c
SCT ON							
Social Class	.19** (.06)	.18*** (.05)	.07 (.06)	.08** (.02)	-.27** (.09)	.18*** (.05)	.16** (.05)
Care ON					.34*** (.08)		
SCT	-.01 (.06)	-.01 (.06)	-.01 (.05)	-.01 (.06)	-	-	-
Social Class	.02 (.06)	.01 (.05)	.03 (.06)	.02 (.03)	-	-	-
Fairness ON							
SCT	-.02 (.05)	-.01 (.05)	-.02 (.05)	-.02 (.05)	-	-	-

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Social Class	.01 (.06)	-.01 (.05)	.06 (.06)	.02 (.03)	-	-	-
Loyalty ON							
SCT	.09 (.05)	.08 (.05)	.08 (.05)	.04 (.05)	-	-	-
Social Class	.06 (.06)	.07 (.05)	.27*** (.06)	.19*** (.02)	-	-	-
Authority ON							
SCT	-.01 (.05)	-.02 (.05)	-.02 (.05)	-.06 (.05)	-	-	-
Social Class	.04 (.06)	.05 (.05)	.27*** (.06)	.19*** (.02)	-	-	-
Sanctity ON							
SCT	.05 (.05)	.05 (.05)	.04 (.05)	.01 (.05)	-	-	-
Social Class	.02 (.06)	.02 (.05)	.19** (.06)	.16*** (.02)	-	-	-
Indiv. ON							
SCT	-	-	-	-	-.01 (.05)	-.02 (.05)	-.02 (.05)
Social Class	-	-	-	-	.07 (.09)	-.002 (.05)	.03 (.04)
					-.02 (.08)		
Binding ON							
SCT	-	-	-	-	-.05 (.05)	.04 (.05)	-.004 (.05)
Social Class	-	-	-	-	-.29** (.09)	.05 (.05)	.36*** (.04)
					.56*** (.07)		

Note. [a] was regressed on; [b] was correlated with. [c] The second rows in social class denotes the values for subjective index of social class; whereas, the first row is for objective indices.

[*] $p < .05$; [**] $p < .01$; [***] $p < .001$.

Finally, we report the findings for the model in Study 1 that was tested by SCT scale instead of vignettes. First, the model had acceptable statistical fit, , $\chi^2(691) = 1495.752$, $p < .001$, *CFI* = .906, *TLI* = .881, *RMSEA* = .047.
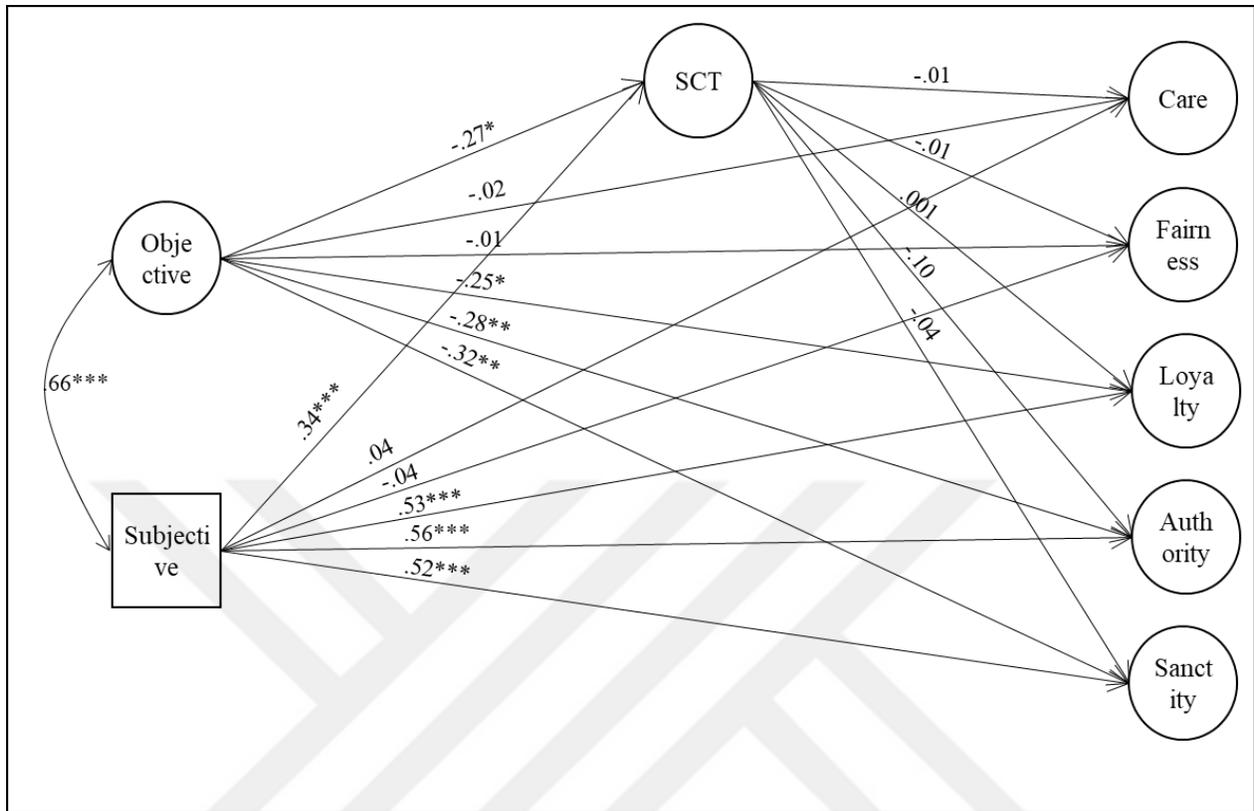
Figure 1. Association between objective and subjective indicators of social class and moral foundations, mediated by the scale for social cognitive tendencies.
Note. * p < .05, ** p < .01, .*** p < 001. Objective = Objective indices of social class; Subjective = Subjective index of social class. Values are unstandardized. Values in parentheses indicate standard errors from the unstandardized model.

Figure 1 represents the second model in which SCT was measured through a scale.

Accordingly, we did not find significant mediated effects for either of the predictors. However,

the model 2 revealed a number of significant associations. Objective SES was negatively related

to SCT; whereas, subjective SES had a positive association with it. SCT, on the other hand, did

not have significant associations with moral foundations.

Similar to the model in Study 1, objective SES was negatively related to the foundations

of loyalty, authority, and sanctity (βs = -.28, -.28, and -.32, respectively), but there was no

significant relationship between objective SES and the foundations of care and fairness. Second,

subjective index of social class was positively related to the foundations of loyalty, authority, and

sanctity (βs = .53, .56, and .52, respectively), but there was also no significant relationship

between subjective SES and the foundations of care and fairness.

Table 3

Indirect effects

Model (SCT scale)		
Indirect via SCT scale	Direct effect	Total effect
.002	-.01	-.01
[-.02, .03]	[-.12, .09]	[-.12, .09]
-.002	.02	.02
[-.02, .02]	[-.06, .09]	[-.05, .09]
.001	.08	.09
[-.03, .03]	[-.06, .22]	[-.05, .22]
-.001	-.02	-.03
[-.03, .02]	[-.12, .06]	[-.11, .06]
.00	-.24**	-.24**
[-.03, .04]	[-.46, -.07]	[-.44, -.08]
.00	.36***	.36***
[-.03, .03]	[.26, .47]	[.27, .47]
.02	-.24***	-.21***
[-.004, .07]	[-.41, -.10]	[-.37, -.08]
-.02	.33***	.31***
[-.05, .004]	[.24, .43]	[.23, .40]
.01	-.25***	-.24***
[-.02, .04]	[-.44, -.12]	[-.42, -.11]
-.01	.29***	.28***
[-.03, .01]	[.20, .40]	[.19, .38]

Table 4

Factor Loadings

	Model 2
Objective indices	
Income	.742
Education	.476
Job Prestige	.503
Solipsistic SCT	
Vignette 1 Item 1	-
Vignette 1 Item 2	-

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Vignette 2 Item 1	-	
Vignette 2 Item 2	-	
Vignette 2 Item 1	-	
Vignette 2 Item 2	-	
Vignette 2 Item 1	-	
Vignette 2 Item 2	-	

Contextualist SCT

Vignette 1 Item 1	-	
Vignette 1 Item 2	-	
Vignette 2 Item 1	-	
Vignette 2 Item 2	-	
Vignette 2 Item 1	-	
Vignette 2 Item 2	-	
Vignette 2 Item 1	-	
Vignette 2 Item 2	-	

SCT scale

Item 1	.664
Item 2	.526
Item 3	.376
Item 4	.72
Item 5	.539
Item 6	.773
Item 7	.751
Item 8	.145

MFQ - Care

MFQR1	.685
MFQR7	.745
MFQ12	.635
MFQJ1	.625
MFQJ7	.392
MFQJ12	.30

MFQ - Fairness

MFQR1	.823
MFQR7	.774
MFQ12	.709
MFQJ1	.612
MFQJ7	.348
MFQJ12	.17

MFQ - Loyalty

MFQR1	.83
MFQR7	.651

MFQ12	.723
MFQJ1	.548
MFQJ7	.489
MFQJ12	.514
MFQ - Authority	
MFQR1	.787
MFQR7	.722
MFQ12	.508
MFQJ1	.576
MFQJ7	.524
MFQJ12	.475
MFQ - Sanctity	
MFQR1	.695
MFQR7	.684
MFQ12	.66
MFQJ1	.64
MFQJ7	.659
MFQJ12	.639

Study 2

The primary aim of the exploratory analyses for Study 2 was to explore the hypotheses conducting correlational analyses. Therefore, we conducted path analyses given the small sample size. Our second aim was to explore the same relationships with two-factor solution of moral foundations (i.e., individualizing and binding).

Results and discussion. We ran the path analysis using the same model from Study 1. Control variable (i.e., the manipulation check for SCT) was also tested as a mediator in a separate model. Yet, due to low reliability, SCT vignettes were not tested. Table 10 presents the paths.

Table 5

Path values when the SCT scale and control over life variable are mediators

	Scale	Control
SCT ON[a]		
Objective	-.03 (.10)	.02 (.08)
Subjective	.003 (.05)	.38*** (.08)

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Care ON		
SCT	.13 (.09)	-.14 (.08)
Objective	.07 (.12)	.05 (.09)
Subjective	-.07 (.06)	-.05 (.09)
Fairness ON		
SCT	-.05 (.07)	-.04 (.09)
Objective	.03 (.10)	.03 (.09)
Subjective	-.02 (.04)	-.02 (.10)
Loyalty ON		
SCT	-.11 (.08)	.03 (.09)
Objective	-.21* (.09)	-.21* (.09)
Subjective	.14 (.09)	.13 (.09)
Authority ON		
SCT	.06 (.08)	-.01 (.09)
Objective	-.12 (.09)	-.12 (.09)
Subjective	.04 (.09)	.04 (.10)
Sanctity ON		
SCT	-.15* (.08)	-.09 (.09)
Objective	-.18* (.09)	-.17 (.09)
Subjective	.12 (.09)	.15 (.09)
Objective WITH[b]		
Subjective	.48*** (.06)	.48*** (.06)

Note. [a] was regressed on; [b] was correlated with. *$p < .05$; **$p < .01$; ***$p < .001$.

Path analyses indicated that the same pattern from Study 1 is present, but the particular path values are not necessarily significant. In other words, we did observe any significant mediated effect, but the association between objective and subjective indices of social class and moral foundations had the same trends such that objective indices had a trend for negative association with binding foundations, but this pattern was reversed for the subjective index.

Finally, we ran the original analyses by changing the outcome from five foundations (i.e., care, fairness, loyalty, authority, and sanctity) to two foundations (i.e., individualizing and binding). Two-way factorial ANOVA indicated no main or interaction effect for individualizing foundation, $Fs < 2.1$. However, as expected, we observed a main of social on binding foundation, $F(1) = 4.896$, $p = .028$. In particular, participants in low status condition scored higher in binding foundation ($M = 4.98$, $SD = 1.04$) compared to those in high status condition ($M = 4.79$, $SD =$

1.10). This finding is not particularly surprising given the effect of social class on the foundation

of loyalty and sanctity in Study 2.