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7215
2018

August 2018

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CESifo

Impressum:

CESifo Working Papers
ISSN 2364-1428 (electronic version)
Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH
The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute
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Editors: Clemens Fuest, Oliver Falck, Jasmin Gröschl
www.cesifo-group.org/wp

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CESifo *Working Paper No. 7215*
Category 13: Behavioural Economics

The Adaptive Liar: An Interactionist Approach of Multiple Dishonesty Domains

Abstract

An extant debate in the morality literature centers on whether honesty is a stable and generalizable trait or whether honest behavior in one situation is independent from honest behavior in another situation. However, a third possibility is that tendencies toward dishonesty vary according to life domain. We conducted a cross-cultural study with participants in five countries (China, Colombia, Germany, Portugal, and the United States) to test whether dishonest tendencies vary according to domain. We hypothesized that countries vary in dishonesty according to domain, and that individuals' tendencies toward dishonesty cluster by domain. Our survey asked participants to report the likelihood of engaging in dishonest behaviors across eight domains of life. The data support both our hypotheses. Our results thus corroborate that dishonesty is driven by the interplay of both individual differences and the circumstances surrounding deception.

JEL-Codes: C830, P510.

Keywords: dishonesty, moral behavior, cross-cultural study.

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Introduction

An important question that has been widely discussed in the morality literature is to what degree honesty is a unified trait, and to what degree people's tendencies toward dishonesty depend on the specific situation (Allinsmith, 1960; Barbu, 1951; Brogden, 1940; Burton, 1963). All individuals face various situations in which they have the opportunity to behave dishonestly, from filing taxes to responding to an attractive colleague's advances. Notably, these opportunities present themselves in different domains of life, such as work, romantic relationships, friendships, and so on. In the present paper, we test the theory that tendencies toward dishonesty cluster according to domain. We borrow from Gardner's concept of multiple intelligences, which suggests that intelligence is not dominated by a single ability but by several domain-specific intelligences (Gardner, 1987), and posit an account of "multiple domains of honesty".

To illustrate our main idea, consider Sheila, an office worker, and Joseph, a college student. If Sheila lies about her hours at work, will she be more likely to misuse company resources for personal gain or to lie to her husband? If Joseph plagiarizes an essay, will he be more likely to cheat on a final exam or to cheat on his taxes? If dishonesty is domain-specific, is it more likely that Sheila will behave dishonestly at work than at home, and that Joseph will behave dishonestly at college than on Tax Day? The question of whether individuals' dishonest tendencies vary according to domain inspired our research.

In light of recent scandals involving deception and fraud in business (e.g. Bernard Madoff), sports (e.g. Lance Armstrong), or politics (e.g. Park Geun-hye), renewed interest in the forces driving dishonesty has inspired a flourishing of research on this topic (see Rosenbaum et al., 2014 for a review). This research has traditionally been dominated by two parallel streams:

first, research on individual characteristics related to dishonesty and second, research on situational cues driving dishonesty. Research in the former stream has found that, amongst other individual characteristics, age (Dreber & Johannesson, 2008), creativity (Gino & Ariely, 2012), guilt proneness (Cohen, Panter, & Turan, 2012), and honesty-humility (Ashton & Lee, 2008) account for individual differences in dishonesty. Meanwhile, research in the latter stream has demonstrated how relatively small changes in the environment can increase people's tendency to cheat. For example, the presence of competition (Conrads et al., 2014), larger incentives (Hilbig & Thielemann, 2017), and dim lighting (Zhong, Bohns, & Gino, 2010) have been shown to increase cheating in experiments, whereas moral reminders (Pruckner & Sausgruber, 2013) and monitoring (Batenson et al., 2006) have been shown to decrease cheating.

Only more recently have scholars begun to engage in understanding the interaction of personality factors and the circumstances surrounding dishonesty. Gibson, Tanner & Wagner (2013) observed that both external rewards and individuals' preferences for truthfulness impacted dishonesty. In a similar vein, Panasiti et al. (2011) found that people cheat less when reputation- risks are high, but individuals high in moral disengagement and manipulativeness are less influenced by reputation risks. While these experimental studies focused on specific situational factors and cues in the interaction with some specific facets of an individual personality, we approach this topic in an integrated manner by focusing on whether individuals' dishonesty clusters by life domain.

We conducted a cross-cultural study with 1,079 participants from China, Colombia, Germany, Portugal, and the United States. We administered a survey to measure domain-specific dishonesty across eight life domains: work, government, business, relationships, friends, religion, strangers, and academic. These life domains were delineated according to social networks in

which individuals operate within. We polled data from both students and the general public in each country. With our cross-cultural design, we have assembled a heterogeneous sample reflecting large variability in individual characteristics and circumstances, allowing us to answer whether dishonesty clusters across conceptually different life domains. Our results indeed support our hypotheses, namely that a) individuals grouped on a country level vary in dishonesty according to life domain and b) dishonesty varies within individuals by domain. Thus, our findings from a large-scale cross-cultural study support a theory of domain-specific dishonesty.

The remainder of the paper is structured as follows. We first briefly review literature on the two driving forces of dishonesty, namely individual characteristics and situational factors that foster dishonesty. We then present our methodological setup and the results of our survey. Finally, we discuss strengths and limitations of our study as well as implications and directions for future research.

Debate on Generality versus Specificity of Honesty

Researchers have long debated to what extent honesty is a stable trait and to what extent tendencies toward honesty are dependent on specific situations. Hartshorne and May's seminal volume, *Studies in Deceit*, was one of the first investigations on cheating behavior, and to this day remains one of the most thorough and extensive (Hartshorne & May, 1928). Interested in testing whether dishonesty could be considered a stable, individual trait, Hartshorne & May conducted multiple studies with approximately 1,100 children to examine dishonest behavior. Kids engaged in different types of tests (intelligence tests, speed tests, coordination tests, etc.), across different situations (school, home, parties, etc.), and in situations that allowed for different types of dishonesty (copying, stealing, lying, faking, and peeping). Across all studies, although

individual children were reasonably consistent in repeated tests of dishonest behavior in the same situations, the average correlation across tests was too low to claim the existence of a generalized honesty trait. This research gave rise to the doctrine of specificity: the theory that dishonest behavior is specific to particular situations. Notably, Hartshorne and May found that correlations were higher between tests of a similar nature, such as tests involving similar motives or settings.

Research on Personality and Moral Character

While the doctrine of specificity was widely accepted following the work of Hartshorne and May, some researchers continued to argue for the existence of a common moral factor (Barbu, 1951; Brogden, 1940; Burton, 1963; MacKinnon, 1938; Maller, 1934). For example, MacKinnon (1938) found that individuals who cheated on a task were more likely to lie afterwards, and Brogden (1940) observed an underlying honesty factor when analyzing data from six character tests. Similarly, Barbu (1951) reported evidence for a stable honesty trait when examining honesty in children in Romania. Later, Burton (1963), questioning Hartshorne and May's conclusions, re-analyzed their data using an exploratory principal components analysis technique. He found that the first component accounted for more than one third of the variance, which he interpreted as support for the generality hypothesis.

More recently, Fleeson and colleagues also re-considered Hartshorne and May's results, pointing out that low correlations between individual tests scores do not necessarily discount the possibility of broad character traits (Fleeson et al., 2014). As noted by Epstein (1979), the average of a set of multiple measurements will be more stable and less biased than any single measurement from the set (i.e., the principle of aggregation). From this perspective, the concept of moral character assumes the existence of dispositional traits that are related to moral actions;

this notion implies that honesty is a stable and robust trait, which remains constant across time and situations.

In addition, several recent studies have exposed relationships between particular personality variables and unethical behavior in laboratory experiments and in real-world field studies: creativity (Gino & Ariely, 2012), guilt proneness (Cohen, Panter, & Turan, 2012), and honesty-humility (Ashton & Lee, 2008). Lee et al. (2008) found that a measure of honesty-humility predicted scores on integrity tests and unethical decision-making. Other researchers have shown that guilt proneness correlates with unethical decision-making (Tangney, Stuewig, Mashek, & Hastings, 2011) and counterproductive work behavior (Cohen, Panter, Turan, Morse & Kim, 2013). Hilbig & Zettler (2015) underpin these findings by showing that honesty-humility accounted for a large proportion of the variance in dishonest behavior across six experiments that varied in incentive structure, mode of data collection and sample composition. But also more distant individual factors affect cheating, as, for example, Yaniv et al. (2017) find that high achievers, measured through students' GPA, tend to cheat more than students with a lower GPA. Taken together, these results support the notion that individuals' dishonest actions are driven at least in part by stable, trait level factors.

Situational Influences on Dishonest Behavior

In parallel with the research examining the factors that lead people to be "bad apples", much research in the last two decades has focused on the circumstances of dishonest behavior ("bad barrels"). Much of this research has focused on how situational factors impact dishonesty. As an alternative to the rational economic framework, Mazar, Amir, and Ariely (2008) proposed a new theory for understanding dishonest behavior, which posits that individuals seeks to balance the personal gains from dishonesty with the desire to maintain a positive self-concept regarding

their own honesty. They found that small modifications in the environment, such as the presence of moral reminders or distance from money, significantly impacted dishonest behavior. Subsequent research in behavioral economics and psychology has identified numerous situational cues that increase dishonesty, such as the presence of wealth (Gino & Pierce, 2009), dim lighting (Zhong, Bohns, & Gino, 2010), competition (Conrads et al. 2014) and larger incentives to lie[1] (Hilbig & Thielmann, 2017).

Other research investigating situational influences has explored how social factors, specifically others' dishonest behavior, can influence individuals' ethical decision-making. For example, Gino and colleagues found that witnessing another person cheating increased participants' dishonesty – unless the cheater was believed to be an out-group member, in which case it had the opposite effect (Gino, Ayal, & Ariely, 2009). Furthermore, research has shown that people cheat more when others also benefit from their dishonest deed (Gino, Ayal, & Ariely, 2012; Wiltermuth, 2011), or cheating increases when the distance between the cheater and the one being cheated increases (Conrads & Lotz, 2015). Although such research does not address the notion of moral character directly, it tends to follow in the situationist tradition, emphasizing the power of transient environmental stimuli in influencing moral behavior.

[1] There is, indeed, mixed experimental evidence on whether the size of the incentives impact cheating. Abeler, Nosenzo and Raymond (2016) provide a meta-analysis of the Fischbacher and Fölmi-Heussi (2013) die-rolling game and conclude that larger financial incentives do not increase an individual's propensity to lie; Mazar et al. (2008) find similar results. Gibson et al. (2013), and Hilbig and Thielmann (2017), however, find such a relation, at least for a subset of individuals in their data. Kajackaite and Gneezy (2017) also find that larger incentives foster dishonesty if there is no probability of being caught.

Towards a Theory of Multiple Domains of Honesty

A third stream of research highlights the interaction between individual characteristics and situational factors to determine ethical behavior. This stream draws from theories of Mischel and colleagues, who propose that individuals' behavior is not only defined by stable individual differences but also by distinctive and stable patterns of situation-behavior relations (e.g., If…then…profiles: she does *X* when *A* but *Y* when *B*) (Mischel, Mendoza-Denton & Shoda, 2002; Mischel & Shoda, 1995). In the realm of moral behavior, initial work focused in organizational contexts (see person-situation interactionist model by Trevino (1986) and the issue-contingent model proposed by Jones, 1991). Other examples of personality and content interacting to shape behavior have been explored in the domains of cooperation, justice and prosocial behavior (Hilbig, Zettler, & Heydasch, 2012; Lotz, Schlösser, Cain, & Fetchenhauer, 2013; Schmitt, Eid, & Maes, 2003). For example, Hilbig, Zettler and Heydasch (2012) studied the effect of the interaction between honesty-humility as an individual difference and the presence of punishment on cooperation. Across two studies, they found that the degree to which individuals make higher contributions when punishment is introduced depends on their dispositional level of honesty–humility.

A recent study by Gibson et al. (2013) found that with increasing incentives to lie some individuals started to cheat, whereas others remained honest. This sensitivity to the incentive to lie depended on the individual's protected value for honesty. Dogan and colleagues (2016) not only replicated these findings, but furthermore found that the case-specific protected value for honesty scale was a much better predictor of dishonest behavior in their experimental setup than more generic measures, like honesty-humility, moral identity, or social value orientation. These

results accentuate the importance to understand the interplay of characteristics and circumstances driving dishonesty.

In the present work, we extend this stream of research. In line with interactionist theories, we propose that an individual's tendency to behave dishonestly is driven neither by his or her dispositional traits nor by circumstances alone. Instead, we propose a framework which conceives of honesty as a multidimensional trait and thus extend Hartshorne and May's research by examining dishonesty in adults and attempting to evenly sample situations from various life domains. We hypothesize that individuals' tendencies toward dishonest behavior vary according to life domain, and therefore, an individual's dishonest behavior in one domain of life (work, romantic relationships, religion, etc.) is more likely to predict his or her dishonest behavior in that same domain than in another domain. Though the work by Mischel and colleagues identifies psychological situations (e.g., when threatened), in our framework we propose that individuals will adjust their dishonest behavior based on nominal situations (e.g. at work or at school).

In the present study, we examined daily dishonest behavior across several domains of life in an integrated manner. Our question of central interest was whether tendencies toward dishonesty vary according to life domain. Therefore, we examined the degree to which dishonest behaviors in one domain of life are related to other dishonest behaviors within that domain of life, compared to the degree to which they are related to dishonest behaviors in other domains. We approached our question of whether dishonesty varies according to life domain in two analogous ways: first, by asking whether individuals grouped by country vary in dishonesty according to domain, and second, by asking whether individuals vary in dishonest tendencies according to domain. Our cross-cultural study design allowed us to test this idea of multiple

domains of honesty at two levels, i.e. at the level of groups (countries), and at the level of individuals. Thus, our hypotheses were as follows:

H1: Individuals from different countries vary in dishonesty according to domain.

H2: An individual's tendency to act dishonestly varies according to domain.

To test these hypotheses, we conducted a cross-cultural study with participants in five countries using a survey, which we refer to as the *dishonesty domains* survey. In each country, we administered the survey to university students and to adults from the general public. The survey assessed dishonest behavior across eight domains of life, asking participants to report the likelihood of engaging in 56 dishonest actions.

Method

Participants. We polled the data from ten participant samples in five different countries: China, Colombia, Germany, Portugal, and the United States. Sample sizes were determined a priori with a target of 240 participants per country. In each country, we collected data from students in laboratory settings at public universities, and from adults in coffee shops located in major cities. All subjects completed a study, which included a behavioral task followed by a survey. We based our analysis on a multi-national sample of students and participants from the general public primarily to increase heterogeneity in motivation and values associated with dishonesty. Furthermore, it allows us to test whether dishonesty varies across life domains on a country level.

Our initial sample was 1,231 participants. To ensure that participants were native to each country of interest, we limited our analyses to individuals who reported being born in and currently living in the country where we administered our study (thus, 139 non-native residents

were excluded). Additionally, thirteen individuals who did not complete the study due to technical or personal issues were also excluded. With these restrictions, our valid sample included 1,079 participants. Table 1 provides location and demographic data on our participants. We viewed the public sample as a built-in replication of the student sample. For that main reason and due to the different number of items included for each cohort, we ran separate analyses for the student and general public samples.

Dishonesty Domains Survey. All materials were translated into the native language of each country, using a forward-backward translation procedure. To examine dishonest behavior in different domains of life, we designed a survey assessing everyday acts of dishonesty, which participants completed on iPads. This survey had the goal of examining whether situation-specific dishonesty, in other words ethical behavior in nominal situations, varies across domains (see Appendix). At the beginning of the survey, participants read instructions indicating that they would read several statements and that for each statement they should report how likely they would be to engage in that particular action. Participants were assured that their responses were confidential and anonymous, and were told that if a specific action didn't apply to them they should imagine themselves in the situation and respond accordingly.

Table 1. Summary of data collection and demographics information for student and public participant samples who completed this survey.

			Student Samples (*N* = 578)			**General Public Samples (*N* = 501)**		
Country	**City**	**University**	**N**	**Gender (% male)**	**Age (years)**	**N**	**Gender (% male)**	**Age (years)**
China	Beijing	Beijing University of Chemical Technology	125	51.2%	M=21.65 SD=0.99	101	38.6%	M=29.97 SD=8.08
Colombia	Bogota	National University of Colombia	116	57.8%	M=21.45 SD=2.60	97	49.5%	M=35.57 SD=14.18

Germany	Munich	University of Munich	107	50.5%	M=23.25 SD=2.64	118	31.4%	M=33.64 SD=14.20
Portugal	Lisbon	University of Lisbon	119	31.1%	M=22.34 SD=4.21	94	48.9%	M=31.88 SD=13.27
United States	Raleigh	North Carolina State University	111	67.6%	M=20.46 SD=1.50	91	53.9%	M=37.70 SD=14.36

The survey included specific dishonest actions drawn from eight domains of life, which we created by conceptualizing the social networks in which individuals operate in: work, government, business, relationships, friends, religion, strangers, and academic (see Barkan, 2008 for a similar approach). Some example items are: "How likely are you to include false work qualifications on your resume?" (work domain); "How likely are you to lie to your relationship partner when he or she asks if you are attracted to someone else?" (relationship domain); and "How likely are you to park your car in a no parking zone?" (government domain). Participants from the public sample did not answer questions from the academic domain since most statements would not apply to them; therefore, participants from the public sample responded to 49 questions, and participants from the student sample responded to 56 questions. Each statement described a specific dishonest behavior and participants were asked to report how likely they would be to engage in each behavior using continuous scales ranging from 0 ("not at all likely") to 10 ("very likely"). All items were presented in random order. Afterwards, participants answered demographic items that included gender, age, ethnicity, relative earnings, religiosity, and trust (see Table A1 in the Appendix for descriptive statistics on religiosity, trust, and relative earnings,).

Procedure. Students at public universities were recruited with flyers (China and Colombia) or standard lab procedures (Germany, Portugal and United States) for a paid decision-making study. Students completed the study in a testing room with 5-8 individual stations. In

coffee shops, patrons were approached by an experimenter and asked whether they would be interested in participating in a paid decision-making study. Coffee shop patrons who agreed to participate completed the study individually from where they were sitting. Aside from the addition of the academic category, study design, and materials were the same for both cohorts.

The present questionnaire was part of larger international research project studying dishonesty in a cross-cultural setting using different methods; in the present research, we focus solely on the variability within individuals across a series of life domains. This cross-cultural project was administered from February 2013 to March 2014. The study included two parts: first participants completed a die task in which they could earn up to $10; the results for this part of the study are described in a related paper, which focused on the cross-cultural dimension of dishonesty based on the behavioral data (Mann, Garcia-Rada, Hornuf, Tafurt, & Ariely, 2016). The second part of the study included completing an online questionnaire: in each country, half of the participants completed the *dishonesty domains* survey, and the other half completed a questionnaire for another project examining the effectiveness of legal, social and internal sanctions to deter crime across countries (see Mann, Garcia-Rada, Hornuf, & Tafurt, 2016). For all participants, an experimenter delivered instructions in the country's native language. After completing the online survey, subjects were paid and thanked for their participation.

Results

Reliability. To assess the reliability of our scale, we computed the Cronbach's alpha for the total scale and for each domain. Table 2 displays the reliability of the survey and each domain sub-scale. The internal consistency of this scale is excellent (Cronbach's alpha > 0.90) and six of the eight sub-scales have an acceptable reliability (Cronbach's alpha > 0.70).

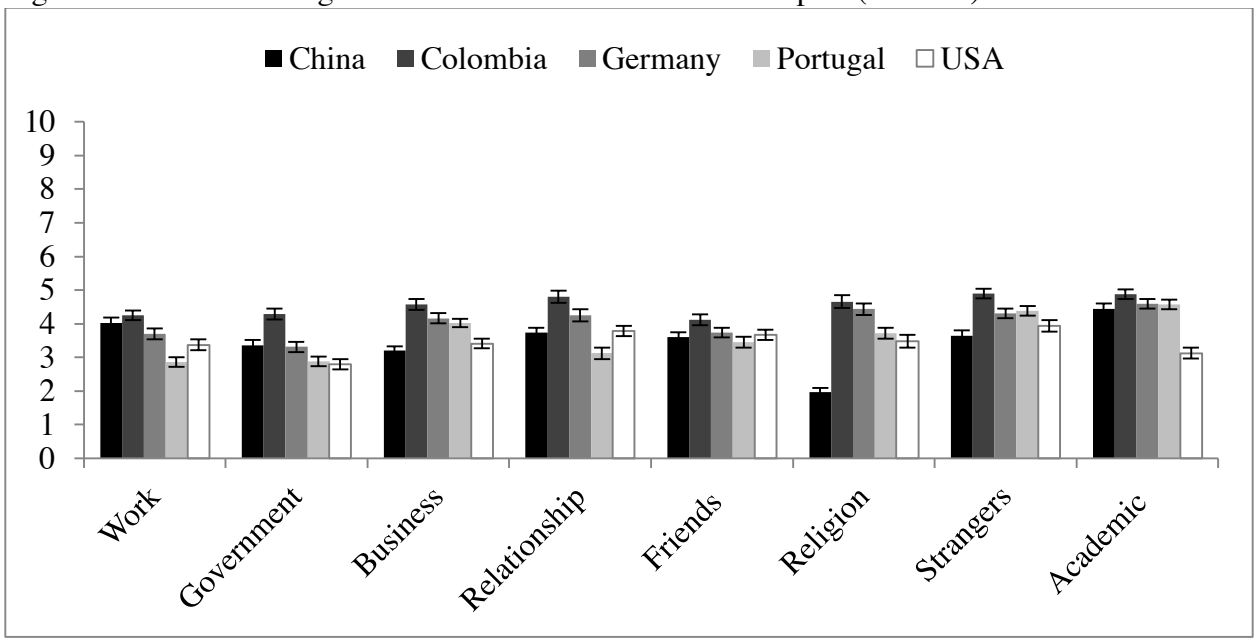
Descriptive Analysis on Cross-country Differences in Dishonesty Across Domains

To examine the effect of country on self-reported dishonesty across domains, we first computed domain scores by averaging the seven items in each domain; therefore, each individual in the student sample had eight domain scores and each individual in the public sample had seven domain scores. Figures 1 and 2 display the domain means per sample and country, and Table 3 displays the overall effect of country and cohort for each domain of dishonesty. We found a significant effect of country on all domains for both the student and the public samples ($p < .05$).

Table 2. Reliability of the Scale

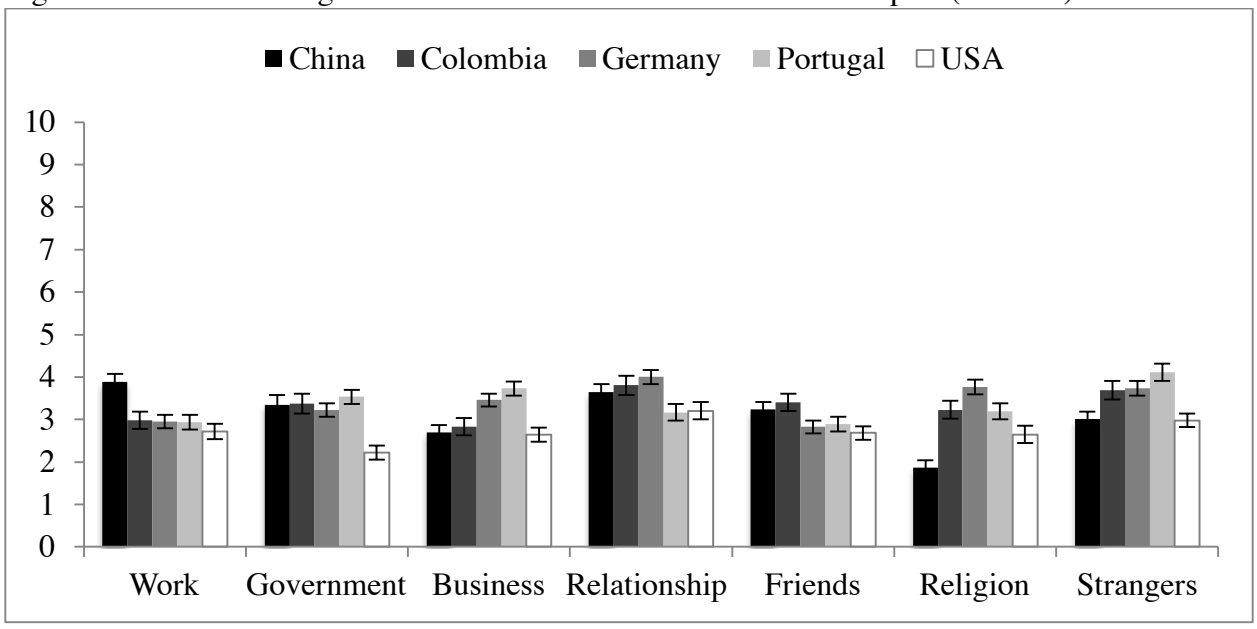
Domain	Cronbach's alpha
Work	0.758
Government	0.721
Business	0.678
Relationships	0.730
Friends	0.720
Religion	0.738
Strangers	0.656
Academic	0.731
Total Survey (49 items)	0.927
Total Survey (56 items)	0.923

Figure 1. Domain Averages across Countries for Student Samples (N = 578)



Note. y-axis scale: Likelihood of engaging in dishonest behaviors [0=not at all to 10=very likely]

Figure 2. Domain Averages across Countries for General Public Samples (N = 501)



Note. y-axis scale: Likelihood of engaging in dishonest behaviors [0=not at all to 10=very likely]

Table 3. Differences between Countries and Cohorts across Domains

Domain	Statistic	Country	Cohort	Interaction
Work	F	12.87 ***	26.39 ***	4.96 ***
	η_p^2	0.046	0.024	0.018
Government	F	14.40 ***	3.07 †	5.83 ***
	η_p^2	0.051	0.003	0.021
Business	F	16.59 ***	66.26 ***	6.31 ***
	η_p^2	0.058	0.058	0.023
Relationship	F	13.39 ***	10.62 ***	2.67 *
	η_p^2	0.048	0.010	0.010
Friends	F	4.34 **	46.55 ***	1.21
	η_p^2	0.016	0.042	0.004
Religion	F	49.23 ***	39.51 ***	3.67 **
	η_p^2	0.156	0.036	0.014
Strangers	F	14.48 ***	47.52 ***	2.31 †
	η_p^2	0.051	0.043	0.009
Academic	F	19.06 ***		
	η_p^2	0.117		

Note. We performed a two-way analysis of variance on each domain by entering country (5) and cohort (2) as predictor of average domain scores.
Significance levels: † p ≤ .10, * p ≤ .05, ** p ≤ .01, *** p ≤ .001.

Regression Analysis on the Interaction between Country and Domain

To assess our first hypotheses, we examined the effect of domain and country as an interaction on the responses for each question on this survey (referred to as 'item scores' from now on). We first transformed our dataset to a long format in order to view responses to each question by each participant as an observation (Students: N = 32,368; Public N = 28,056). To test our three parameters of interest, country, domain, and interaction between country and domain, we constructed two linear mixed effects regression models in each case with item scores included as the continuous dependent variable: an alternative model including a fixed effect for the variable of interest, and a baseline null model excluding only that parameter of interest (e.g. when testing for domain, country was included in both models and domain was only included in

the alternative model). Additionally, random effect terms were included in all models to account for subject and item-level effects. These analyses were conducted in R using the lme4 package (Bates, Mächler, Bolker, & Walker, 2014). P-values were computed with the Satterthwaite approximation, u. Finally, models were compared sing the lmerTest package (Kuznetsova, Christensen, Bavay, & Brockhoff, 2015) using a maximum likelihood (ML) approach: the log likelihood ratio tested for model improvement between the null and alternative model (see models and results in Table 4).

We ran linear mixed models to test for a main effect of domain, a main effect of country, and, of particular interest to the question at hand, an interaction effect between country and domain. Our domain theory would not necessarily predict differences in domains overall, since we created domains with multiple items that varied in severity, and tried to roughly equate the average level of severity across domains. In line with this intention, we found no main effect of domain on dishonest behavior (Students: χ^2 (7) = 2.11, p = .953; Public: χ^2 (6) = 1.29, p = .973), while adjusting for country. Secondly, we examined a main effect of a country parameter which is highly significant in both cohorts (Students: χ^2 (4) = 63.38, $p < .001$; Public: χ^2 (4) = 15.41, p = .004), while adjusting for domain. These results, together with the analysis of variance presented earlier, provide evidence to support the idea that dishonest behavior varies across countries.

Table 4. Basic Linear Mixed Effects Models

Parameter of Interest	Model Equations	Student Analysis	Public Analysis
Dishonesty varies by domain (parameter of interest: domain)	Null Model: item score = Country + (1 | Question) + (1 | Subject) Alternative Model: item score = Country + **Domain** + (1 | Question) + (1 | Subject)	$\chi^2(7) = 2.11$ $p = .953$	$\chi^2(6) = 1.29$ $p = .973$
Dishonesty varies across countries (parameter of interest: country)	Null Model: item score = Domain + (1 | Question) + (1 | Subject) Alternative Model: item score = Domain + **Country** + (1 | Question) + (1 | Subject)	$\chi^2(4) = 63.38$ $p < .001$	$\chi^2(4) = 15.41$ $p = .004$
Dishonesty varies across domains and countries (parameter of interest: interaction)	Null Model: item score = Domain + Country + (1 | Question) + (1 | Subject) Alternative Model: item score = Domain + Country + **Country: Domain** + (1 | Question) + (1 | Subject)	$\chi^2(28) = 685.19$ $p < .001$	$\chi^2(24) = 416.54$ $p < .001$
Dishonesty varies within individuals by domain (parameter of interest: interaction between subject and domain)	Null Model: item score = Domain + Country + Country: Domain + (1 | Question) + (1 | Subject) Alternative Model: item score = Domain + Country + Country: Domain + (1 | Question) + (**Domain | Subject**)	$\chi^2(35) = 652.33$ $p < .001$	$\chi^2(27) = 356.92$ $p < .001$

Note. Statistics reported correspond to log likelihood ratio test comparing the alternative and null models.

Additionally, we tested for an interaction of country and domain, by including an interaction term in the alternative mixed effects model, and comparing this against a null model without the interaction term. This comparison revealed a highly significant model improvement, indicating that the effect of country on dishonesty depends on the values for domains (Students: $\chi^2(28) = 685.19, p < .001$; Public: $\chi^2(24) = 416.54, p < .001$). In general, our results reveal significant variation in dishonesty across countries and domains, so we suggest that country differences in dishonesty are not uniform but depend on a particular domain.

Regression Analysis on Intra-Individual Variation in Dishonesty

To assess our second hypotheses, we implemented another linear mixed model to examine whether individuals' tendencies to act dishonestly depended on domain. To do so, we added individual level random domain effects (alternative model) to the model with fixed effects

for country, domain and their interaction and random effects for question and subject (null model). The log likelihood ratio tests comparing the alternative and null models revealed a significant effect of intra-individual variation for both cohorts (Students: $\chi^2(35) = 652.33, p < .001$; Public: $\chi^2(27) = 356.92, p < .001$ – see Table 4). To make sure that the findings of the main variables of interest hold when controlling for demographics, we re-ran our analysis including participants' gender, age, ethnicity, relative earnings, religiosity and trust into the model. Table 5 shows that practically all results hold, when controlling for demographics. Finally, we also tested for across subject variation in lying when controlling for domain and country. Therefore, we calculated a base model with domain and country and compared it with a model including subject as a random factor, which showed up highly significant both for students and participants from the general public, also when controlling for additional demographics for both groups (all four *p*s < .001). This result supports our claim related to the heterogeneity of our sample.

To sum up, we showed that individuals vary in their responses to questions by domain, sometimes responding systematically below and sometimes systematically above the domain means. This analysis supports the idea that individuals adjust their moral character when facing diverse opportunities to behave dishonestly in ways that correspond to different domains.

Table 5. Linear Mixed Effects Models including Demographics

Parameter of Interest	Student Analysis	Public Analysis
Dishonesty varies by domain (parameter of interest: domain)	χ^2 (7) = 2.0105 p = .9593	χ^2 (6) = 1.2349 p = .9751
Dishonesty varies across countries (parameter of interest: country)	χ^2 (4) = 59.393 p < .001	χ^2 (4) = 9.0813 p = .0591
Dishonesty varies across domains and countries (parameter of interest: interaction)	χ^2 (28) = 583.13 p < .001	χ^2 (24) = 306.94 p < .001
Dishonesty varies within individuals by domain (parameter of interest: subject-domain interaction)	χ^2 (35) = 626.78 p < .001	χ^2 (27) = 299.74 p < .001

Note. Statistics reported correspond to log Likelihood ratio test comparing alternative and null models including six demographic variables: gender, age, ethnicity, relative earnings, religiosity, and trust (see Table A1 for more information about demographic variables).

General Discussion

Taken together, results from this cross-cultural survey suggest that dishonest behavior varies according to domain of life and across countries. We evaluated our approach of domain-specific dishonesty in two ways: by examining how dishonest behavior of individuals in different countries varies by domain, and by examining how dishonest behavior of individuals varies by domain. Results revealed an interaction effect between country and domain as well as intra-individual variation by domains. Importantly, we replicated our findings in two different samples: students at public universities and adults from the general population. Thus, our work extends Hartshorne and May's research by examining dishonesty in adults and attempting to evenly sample situations from various life domains, as we find that dishonest tendencies are more similar in situations from the same domain. With the survey results, we also underpin more recent findings from experimental research on how personality and content interact in shaping (moral) behavior (e.g. Hilbig, Zettler, & Heydasch, 2012; Gibson, Tanner & Wagner, 2013).

Especially the idea that dishonesty is driven by both individual differences and the circumstances surrounding the judgment has gained momentum in experimental research and recent study results indeed suggest that internal values tend to interact with situational factors (Gibson, Tanner &Wagner 2013, Dogan et al., 2016, Panasiti et al., 2011). Our survey results generally support these findings and extend them by supporting a theory of domain-specific dishonesty.

Limitations

The present research must be qualified in light of limitations, mainly related to our self-report survey methodology. Due to multiple challenges inherent to measuring everyday dishonesty directly, self-report tools such as surveys and diary methods are frequently used to assess dishonesty (DePaulo et al., 1996; Ennis, Vrij, & Chance, 2008), though these methods have limitations. However, it is possible that with self-report methods, individuals may not be completely honest when reporting their own unethical behavior. Importantly, while social desirability biases in self-reported dishonesty may vary across countries (Bernardi, 2006), the bias should not affect our primary conclusions provided that social desirability bias has a similar influence on responses across domains. In addition, survey responses may have been influenced by response biases such as avoiding the extreme ends of the scale. However, such response biases would likely increase the appearance of a common moral factor, rendering our tests for the domain-specific theory of dishonesty more conservative. Still, because of the methodological limitations of assessing dishonesty with survey measures, future research that examines domain-specific dishonesty with behavioral methods such as ordinary tasks (e.g. filing an insurance form, answering an academic quiz) and field studies would bolster confidence in our conclusions.

Implications for Future Research

Although our research revealed cross-cultural differences in dishonesty according to domain, we cannot explain from our data why variations between specific countries occur. One possibility is that social norms shape specific dishonest behavior, and that these vary from one country to another. According to norm-focus theory (Cialdini, Reno, & Kallgren, 1990), the social context determines which types of norms people attend to at a particular time and how these norms will shape an individual's behavior. Another possibility is that institutions and legal rules differ by country, and that these might also shape dishonest behavior; for example, legal sanctions for running a red light might differ by country. Future research should explore differences in legal, social and personal sanctions across countries and how they shape specific dishonest behavior. For example, Kobayashi, Grasmick and Friedrich (2001) examined differences in dishonesty in the workplace between Japanese and American individuals, and found that these could be explained by differences in internalized norms. A related paper investigates the effectiveness of legal, social and personal sanctions on seven infractions and misdemeanors across five countries, and finds that personal sanctions have the strongest effects on dishonest behavior, and that the deterrent effects of legal sanctions, while also significant, are strongest when personal sanctions are lax (Mann, Garcia-Rada, Hornuf, & Tafurt, 2016).

Conclusion

In conclusion, our work adds to the extant literature endorsing situational or character-based accounts of moral behavior by positing the existence of domain-specific moral tendencies. Our results do not preclude the possibility of a common moral factor, and future research might explore the co-existence of a common moral factor and domain specific dishonesty. Our main

theoretical contribution is to propose a framework that views moral character as a multidimensional construct in which honest tendencies are, at least in part, dependent on life domains. This is reminiscent of Mischel and Schoda's conceptualization of personality as reflecting signature interactions between person and situation. While Mischel and Shoda (1995) proposed unique "if-then" behavioral signatures to account for variation in behavior based on psychological circumstances, our framework suggests that a person's tendency to behave honestly or dishonestly varies by domain of life.

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Acknowledgements

The authors thank Jonathan Schulz for thoughtful discussions in the early stages of this project. For their help translating materials, the authors thank Zishu Chen and Sophie Guo (Mandarin), Franziska Greiner and Tobias Kuntze (German), Natacha Barreto, Ana Sofia Braga, and Miguel Abrantes (Portuguese). Thanks to Zishu Chen, Siyang Wang, and Kitty Vorisek for their help in making local connections.

The authors thank Ivan Hernández from National University of Colombia, Mario Augusto Boto Ferreira from University of Lisbon, and Zhonghua Cai and Yanchen Bi from Beijing University of Chemical Technology for their support with facilitating lab space and other resources for data collection. Additionally, the authors thank research assistants in all five countries for their support with data collection. China: Tingting An, Yanchen Bi, Zishu Chen, Yuan Gao, Qihuan Song, Xicheng Teng, Likun Wang, Junjie Yin. Colombia: Rocío del Pilar Alba, Paola García Arévalo, Laura Lugo, Laura Beatriz Roa. Germany: Rene Cyranek, Leonard Doyle, Oliver Gmuender, Lisa Kitzinger, Julia Memmert, Angelica Schmidt, Lucia Sommerer, Johanna Staffler, Max Straka. Portugal: Ana Sofia Braga, Margarida Cipriano, Pedro Garcia-Marques, Ana Lapa, Manuel Oliveira, Joana Reis, Mariana Sequeira. United States: Omar Daouk, Sunny Kang, Amy Taggart, Gloria Tomlinson, Alev Uneri, and Nick Buttrick. Finally, the authors would like to thank all members of the Center for Advanced Hindsight for the support with this project.

Appendix. Dishonesty Domains Survey

Please indicate how likely you are to engage in each of the following actions, in the given situation. If the action does not apply to you, please imagine yourself in the situation, and respond according to how you think you might act. Please read each action carefully, and respond as honestly as possible. Your responses are confidential and anonymous.

How likely are you to _____?
[Scales range from "not at all likely" (0) to "very likely"(10)]

1) Work

1. Take supplies (such as paper and pencils) from work to use at home for non-work-related tasks?
2. Buy dinner for your friends and submit the receipt to your workplace as a business expense?
3. Include false work qualifications on your resume?
4. Take a sick day from work when you are not sick?
5. Claim that a project is underway at work when in fact you haven't started it?
6. Take credit for an assignment at work that someone else completed?
7. Engage in personal activities (such as paying your personal bills) while on company time?

2) Government

1. Omit information on your tax filings in order to pay less income tax?
2. Speed by 15% over the speed limit while driving?
3. Run a red light when nobody is around?
4. Park your car in a no parking zone?
5. Bribe a police officer to avoid getting a speeding ticket?
6. Apply for a government tax credit knowing you are not eligible for it?
7. Fake a signature of a doctor on a government document in order to get an expensive medication for free?

3) Business

1. Leave a store with an article of clothing you did not pay for (on purpose)?
2. Not mention it when you notice you were given too much change at the grocery store?
3. Connect to an internet service directly, without the provider knowing, and without paying for it?
4. Install a computer program that one of your friends purchased on your computer, instead of buying it yourself?
5. Provide your insurance company with false information in order to reduce your premium?
6. Leave a restaurant without paying your bill (on purpose)?
7. Not tell the phone company that you were not charged for a month of service?

4) Relationships

1. Flirt with someone you are attracted to when your relationship partner isn't around?
2. Eat something that your relationship partner would not approve of, without telling him/her?
3. Lie to your relationship partner when he or she asks if you are attracted to someone else?
4. Take money out of your joint bank account and use it without your relationship partner knowing, for something that you know they would not approve of?
5. Tell your relationship partner that you like a gift they got you, when in fact you hate it?
6. Have a one-night affair with someone that is not your relationship partner?
7. Engage in continued sexual relations with someone that is not your relationship partner?

5) Friends

1. Tell a friend that you like her haircut even though you think it is terrible?
2. Say your die fell on six when in fact it fell on 3 while playing a board game with friends?
3. Tell your friends stories about yourself that never happened in order to sound more interesting?
4. Make up a false excuse about why you are late to meet a friend?
5. Pretend that you did not damage a friend's coffee table, when in fact you did?
6. Gossip about a friend behind his back?
7. Tell a friend that you like their new boyfriend or girlfriend when you don't?

6) Religion

1. Eat a food that is forbidden according to your religion's laws?
2. Pretend to put money in a collection box at your place of worship?
3. Skip a religious ceremony that you are expected to attend so that you can go to a party?
4. Drink (but not eat) during a religious fast where you are supposed to neither eat nor drink?
5. Use the Lord's name in vain?
6. Take a Holy Book from your place of worship home for your own personal use?
7. Break a promise to a leader of your religious group that you will spend an afternoon volunteering for a good cause, and instead stay at home?

7) Strangers

1. Drive away without leaving a note, after you accidentally dented the bumper of a parked vehicle?
2. Keep a stranger's camera that you find in a bathroom stall?
3. Take money that you see fall from a stranger's pocket?
4. Lie about your age to a stranger?
5. Throw extra trash in an unknown neighbor's trashcan?
6. Listen in on a private conversation between two strangers?
7. Tell a beggar that you do not have any money to give away on you, when in fact you do?

8) Academic

1. Bring a piece of paper with course material into an exam, against the rules?
2. Read a copy of an exam answer key prior to taking the exam?
3. Let a classmate see your answers when writing an exam?
4. Lie to a teacher to justify why you didn't submit an assignment on time?
5. Include text from a relevant source without giving credit when writing a research paper?
6. Purchase an essay that you did not write and submit it as your own?
7. Collaborate with classmates on an assignment that you are supposed to complete individually?

Table A1. Summary of additional demographics information for student and public participant samples.

Sample	**Student**			**General Public**		
Country	**Religiosity**	**Trust**	**Relative Earnings**	**Religiosity**	**Trust**	**Relative Earnings**
China	M=5.48 SD=2.86	M=5.00 SD=2.75	M=4.04 SD=1.71	M=4.76 SD=3.25	M=5.16 SD=3.30	M=5.27 SD=2.05
Colombia	M=2.95 SD=2.90	M=5.35 SD=2.88	M=5.27 SD=1.70	M=5.15 SD=3.23	M=5.43 SD=3.10	M=5.32 SD=1.88
Germany	M=2.75 SD=2.68	M=5.02 SD=2.38	M=4.62 SD=2.02	M=2.54 SD=2.40	M=5.56 SD=2.50	M=5.57 SD=1.96
Portugal	M=2.87 SD=2.91	M=5.26 SD=2.37	M=4.93 SD=1.57	M=3.08 SD=2.94	M=5.29 SD=2.01	M=5.42 SD=2.09
United States	M=3.97 SD=3.26	M=5.71 SD=2.29	M=5.44 SD=1.91	M=4.80 SD=3.30	M=5.03 SD=2.60	M=4.62 SD=2.53

Note. Religiosity ("How religious are you?") was measured from on a slider scale from "not at all religious" (0) to "very religious" (10). Trust ("Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?") was measured on a slider scale from "most people can be trusted" (0) to "you can't be too careful in dealing with people" (10). Relative earnings ("Compared to other people in your country, would you say your household earns less or more money than the most?") was also measured on a slider scale from "far less money" (0) to "far more money" (10). Finally, participants had the option of leaving questions unanswered so our data has missing values for some of the variables.