(In)Alienable Worth? Cultural Logics of Dignity, Honor, and Face and their Links to Prosociality Across the World

Psychological Science Accelerator PSA-JTF2: DHF Collaborators

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Author Note

Abstract

Cultural logic is a set of cultural scripts and patterns organized around a central theme. The cultural logics of dignity, honor, and face describe different ways of evaluating a person's worth and maintaining cooperation. These cultural logics vary in prevalence across cultures. In this study, we collaboratively develop and validate a measure capturing these cultural logics, which will allow us to map world cultures based on the prevalence of these logics. We will further explore the interrelations of dignity, honor, and face with prosocial behavior, values, moral beliefs, and religiosity as well as examine the generalizability of these relationships across cultures. Finally, we will explore historical antecedents (e.g., resource scarcity) and current correlates (e.g., inequality) of the country-level prevalence of these cultural logics. This study will generate a new dataset of country scores for dignity, honor, and face that will be available for future comparative research. It will also provide theoretical insights for researchers and practitioners interested in cooperation and social behavior within and between cultures.

Keywords: dignity culture, honor culture, face culture, prosocial behavior, reciprocity

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Humans are an obligatorily interdependent species, meaning that, to survive, we must cooperate with other humans (Brewer & Caporael, 2006). How do we ensure that others cooperate? Many researchers have argued that we developed morality as an answer to the problem of cooperation (Curry, 2016; Curry et al., 2019; Rai & Fiske, 2011; Tomasello & Vaish, 2013). A large-scale study of the ethnographic records of 60 societies, varying from hunter-gatherer societies to modern states, found that certain forms of cooperation, such as group loyalty, reciprocity, or bravery, have a universally positive moral valence (Curry et al., 2019). Although people in different societies might generally agree on which kinds of behaviors are morally virtuous, the mechanisms of enforcing these behaviors vary (Leung & Cohen, 2011). The cultural logics of dignity, honor, and face offer three different mechanisms for ensuring moral conduct and cooperation in societies.

The distinction between the cultural logics of dignity, honor, and face is a relatively new one (Leung & Cohen, 2011), although each of these concepts has been studied independently for a long time, such as the Chinese concepts of "face" (Hu, 1944), honor and shame (Peristiany, 1966), or Kant's conceptualization of dignity (Kant, 1785). Leung and Cohen (2011) described a cultural logic as a "constellation of shared beliefs, values, behaviors, practices, and so on, that are organized around a central theme" (p. 508). They differentiated between the logics of dignity, honor, and face as alternative pathways to solve two main problems that all societies must address: the problem of a person's worth and the problem of cooperation, or social order. In the cultural logic of *dignity*, a person's worth is considered inalienable, and cooperation is governed by a set of internalized universal rules or principles. In the cultural logic of *honor*, a person's worth has an internal and an external component: "Honor must be claimed, and honor must be paid by others." (Leung and Cohen, 2011, p. 509). The cultural logic of honor typically prevails in environments where external authorities, such as governments, are not trusted to enforce universal rules (Nowak et al., 2016; Uskul & Cross, 2020). Here, individuals must prove that they are worthy of respect and cooperation by demonstrating both strong positive reciprocity (e.g., consistently fulfilling obligations such as paying one's debts) and strong negative reciprocity (e.g., retaliating against insults). In the cultural logic of *face*, a person's worth is largely ascribed to them by others. The focus is on how much respect one can claim based on the position they occupy in the societal hierarchy and how well they fulfill the requirements of that position (Ho, 1976; Kim & Cohen, 2010). In face cultures, cooperation is ensured by strong positive reciprocity norms. However, unlike in honor cultures, the group or the superior administers punishment, and direct negative reciprocity is disfavored as being disruptive to group harmony (Leung & Cohen, 2011).

This study has three main goals. First, despite the potential value of these constructs as descriptors of cultural differences, their conceptualization and operationalization are still underdeveloped – there is no single broadly accepted definition of these cultural logics or a measure that would perform well across cultures (van Osch et al., 2020). Our first goal is to clarify the conceptualization and validate a measure of Dignity, Honor, and Face (DHF) logics across cultural contexts. Second, the lack of a cross-culturally validated measure also means that there are no country-level scores available for these cultural logics which could be used in cross-cultural research, similar to such scores for other dimensions of cultural difference, such as individualism—collectivism (Hofstede, 1984; Minkov & Kaasa, 2022) or tightness—looseness (Gelfand et al., 2011). Our second goal is to collect data across a large number of countries and create an open database of the prevalence of DHF logics across world societies. Finally, cultural logics are theorized to be predictive of a range of values, behaviors, and beliefs relevant to human prosociality and cooperation, but these links have been sparsely studied. Our third goal is to identify both country-level and individual-level correlates and behavioral manifestations of these cultural logics. This study will contribute to the efforts to move beyond dichotomized conceptualizations of cultural differences (individualism vs. collectivism, East vs. West) and advance our understanding of human cooperation by describing and explaining the variation in strategies people across the world use to promote cooperation.

Theoretical Background

We will briefly outline different conceptualizations and measures of honor, dignity, and face as cultural logics proposed in earlier studies. We will begin with honor, which has been studied the most, continue with face, and end with dignity, which, as a cultural logic, has been studied the least.

Honor

Honor has been conceptualized as a value that comprises an individual's self-worth and their reputation in the community (Pitt-Rivers, 1966). Cross et al. (2014) asked participants in Türkiye and northern USA open-ended questions about the meaning of honor and identified three dimensions that described honor in both countries: self-respect, moral behavior, and social status/respect. Honor is a highly gendered construct: The set of standards to which men and women must conform are quite different, therefore a distinction can be made between masculine and feminine honor (Guerra et al., 2013; Mosquera, 2011; Pomerantz et al., 2023; Rodriguez Mosquera et al., 2002; Vandello et al., 2009). More recent research suggests that despite these different expectations, men and women in honor cultures have a shared understanding of what these standards are for each group, which makes it possible to capture honor culture norms with the same measure across genders (Pomerantz et al., 2023; Vignoles et al., 2024). Figueredo et al. (2004) also distinguished between positive and negative

reciprocity (revenge) and developed a measure to capture these two facets of honor. Finally, a number of studies suggest a distinction between individual and group-based honor (Guerra et al., 2013; Rodriguez Mosquera et al., 2002). A recent literature review suggests that while individual honor predicts interpersonal outcomes, such as positive reciprocity or retaliation, group-based honor predicts intergroup outcomes, such as defensiveness and support for intergroup aggression (Uskul et al., 2023). Cultures of the Middle East and the Mediterranean region (e.g., Türkiye, Iran) have typically been described as honor cultures (Vignoles et al., 2024).

Face

Ho (1976) defined face as "the respectability and/or deference which a person can claim for himself [sic] from others, by virtue of the relative position he [sic] occupies in his social network and the degree to which he [sic] is judged to have functioned adequately in that position as well as acceptably in his [sic] general conduct" (p. 883). According to Ho, the concept of face is Chinese in origin and is a literal translation of Chinese 臉 (*liǎn)* and 面子 (*miànzi).* Although both words can be translated as face, *liǎn* is more closely linked to moral conduct and character virtue, whereas *miànzi* is more closely linked to status and prestige. This distinction parallels Cross et al.'s (2014) distinction between moral behavior and social status. Another important distinction is made in face negotiation theory (Ting-Toomey, 1988; Ting-Toomey & Kurogi, 1998): Facework can be self-directed or other-directed, either aimed at preserving one's own or the other person's face and status. Similarly, drawing on Takata's (2000) work on self-construal, Park et al. (2017) differentiate between self-focused and other-focused relational selves. This distinction between self-face and other-face is similar to the distinction between individual and group-based honor, where the focus is either on the self or on the other. Cultures of the East Asian region (e.g., China, Japan) have typically been described as face cultures (Ho, 1976; Lin & Yamaguchi, 2008).

Dignity

The Oxford English Dictionary defines dignity simply as "the quality of being worthy or honourable". However, the distinctive feature of dignity cultures is the belief that self-worth is inalienable and does not depend on others (Leung & Cohen, 2011). This idea of the "inherent dignity of the human person" (UN, 1966, p. 5) is foundational to the entirety of international human rights law (O'Mahony, 2012). However, dignity does not exist in isolation, nor is it asocial. Expressions such as being "treated with dignity" or "denied dignity" suggest that dignity has a social component, the same as honor and face. It, too, has the component of morality (if someone tries to give or take a bribe, they might be described as having no dignity) and status/respect (to treat someone with dignity is to treat them with respect). A recent set of studies conducted in Armenia (Grigoryan & Khachatryan, 2023) found two facets of dignity that parallel the distinction between self-concern and

other-concern in honor and face studies. Self-oriented dignity reflects the autonomy component of this cultural logic (i.e., being guided by one's own moral standards of behavior), whereas other-oriented dignity reflects the focus on treating others with dignity. Cultures of the Western European region (e.g. the U.K. and Germany) have typically been described as dignity cultures (Maitner et al., 2022; Smith et al., 2021).

Integrated Conceptualization of the Cultural Logics

These three constructs have much in common. All three are concerned with moral conduct and character virtue. They all assume a certain set of standards to which individuals must conform. In the case of honor, these standards are gendered, in the case of face, they strongly depend on the status relations between the interaction partners, and in the case of dignity, these standards are internal rather than external. However, the presence of moral standards and the need to live up to them is a common element of all three. Each is also linked to status: Someone who has dignity, honor, or face can respect themselves and deserves respect from others (i.e., has higher status than someone who does not). The unique feature of dignity culture is the notion of inalienable worth and the focus on internal standards of moral behavior; for honor cultures, the unique feature is the strong norm of reciprocity, both positive and negative; and for face, it is the focus on how one fulfills the requirements of their social role and preserves group harmony. Each of these cultural logics has two facets, one self-oriented and one other-oriented. The two facets can have different consequences for interpersonal and intergroup behavior; for example, Lun et al. (2023) found that across 24 nations, other-face concern was associated with positive outcomes, and self-face concern with negative outcomes in interpersonal conflicts.

At the individual level, throughout this paper, we conceptualize dignity, honor, and face as belief systems and operationalize them through the personal endorsement of beliefs and behaviors constituting each. At the societal level, we conceptualize dignity, honor, and face as cultural logics and operationalize them as perceptions of one's society's endorsement of beliefs and behaviors associated with each. Following Leung and Cohen (2011), we describe these cultural logics as "ideal types". Despite the recognition that certain regions or cultures are typically considered to align with one of the three logics, we assume that members of any given cultural or national group will endorse all three logics to some extent, and that any given culture will have high between-individual variability in personal endorsement of each of these logics. We provide descriptions of core beliefs and behaviors associated with each of the six constructs proposed here in Table 1.

Table 1. Conceptualization of the self- and other-concern facets of dignity, honor, and face logics

DIGNITY	
A person's worth is inalienable rather than socially conferred; everyone deserves respect. Moral conduct is ensured by applying a universal set of moral principles to all.	
Self-concern	*Other-concern*
Focus on independence of self-worth from others	Focus on treating all others with dignity and respect

HONOR	
A person's worth is determined by their reputation. Moral conduct is ensured by strong norms of positive and negative reciprocity.	
Self-concern	*Other-concern*
Focus on individual honor and self-assertion	Focus on group honor and protection of ingroup's reputation

FACE	
A person's worth is determined by the social role they occupy and how well they fulfill its requirements. Moral conduct is ensured by adherence to role expectations.	
Self-concern	*Other-concern*
Focus on preserving one's own face and status	Focus on preserving others' face and status

Present Research

In this section, we outline the hypotheses and research questions we aim to address in this study. Table 2 clarifies some key terms to facilitate understanding of the proposed hypotheses and proposed analysis. The hypotheses and analysis plan are summarized in the "Analysis Plan Summary" table in the Supplementary Materials (SM).

Table 2. Terminology

Term	Definition
Individual endorsement of DHF cultural logics	Ratings on DHF items when the instruction reads "indicate to what extent _you personally_ agree or disagree with each of them".
DHF perceived cultural norms	Ratings on DHF items when the instruction reads "indicate to what extent you think _other people in your country_ would agree or disagree with each of them".
Individual level scores	Participants' individual ratings of the items.
Sample/country level scores	Aggregated scores by country, average of all valid responses by participants in that country.
Level 1 [within]	Refers to a level of analysis in multilevel models where individual level scores and variances are used for modeling.
Level 2 [between or cluster]	Refers to a level of analysis in multilevel models where sample/country-level scores and variances are used for modeling.

Two Facets of Dignity, Honor, and Face (H1)

Consistent with the literature, we propose that each of the cultural logics of dignity, honor, and face can be described either through a single latent factor (Smith et al., 2024; Vignoles et al., 2024; Yao et al., 2017), each represented by two facets of self-concern and other-concern (Grigoryan & Khachatryan, 2023; Lun et al., 2023; Uskul et al., 2023). We therefore hypothesize that a hierarchical model with three higher-order factors of dignity, honor, and face, each represented by two facets of self-concern and other-concern, will appropriately describe the data (H1a). We also expect that this model will fit the data better than a 3-factor model that does not differentiate between the two facets of self-concern and other-concern (H1b). We will alternatively test a six-factor model in case the hierarchical model does not converge. Figure 1 shows the three alternative models. Additionally, we will test if the same factor structure holds at the individual and the sample level of analysis, and whether this factor structure is appropriate for both individual endorsement and perceived norms

measures. Finally, we will use the alignment optimization procedure (Asparouhov & Muthén, 2023) to establish the degree of invariance of this measure across countries.

Figure 1. Competing models for the DHF questionnaire structure

A. Proposed model

B. Competing model

C. Alternative model (will only be tested if model A does not converge)
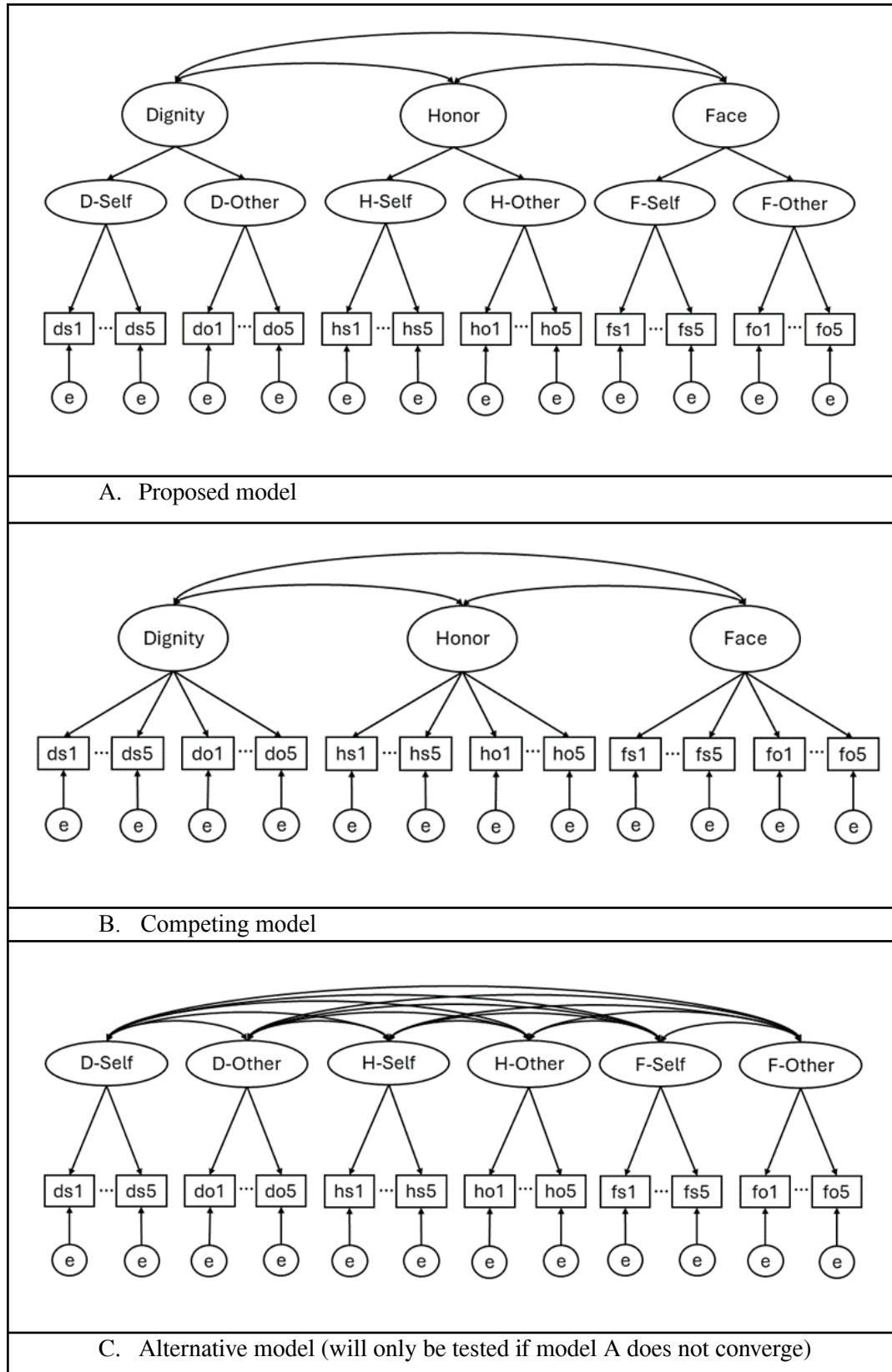
Note. ds1…ds5 – five items measuring dignity-self; do1…do5 – dignity-other; hs1…hs5 – honor-self; ho1…ho5 – honor-other; fs1…fs5 – face-self; fo1…fo5 – face-other.

Cultural Logics and Prosocial Behavior (H2)

The proposed integrative view of dignity, honor, and face cultural logics suggests that all three serve the same function: regulating social behavior. Because prosociality is the cornerstone of group living and one of the most important areas where social behavior needs to be regulated, we would expect that the endorsement of the cultural logics of dignity, honor, and face is predictive of prosociality, but only if the focus is on the others rather than on the self. We therefore predict that the individual endorsement of the other-concern facet of all three cultural logics will predict higher prosociality towards strangers (H2).

Cross-Country Differences in Prosociality (H3)

An important question to consider when it comes to predicting prosociality across cultures is towards whom we are prosocial: A stranger whom we are unlikely to meet again, or someone who can potentially reciprocate (e.g., ingroup member; Levine et al., 2001; Romano et al., 2021)? In this study, we will capture three types of social behavior: prosociality towards strangers in one-shot interactions, that is, universal prosociality, and positive and negative reciprocity towards strangers in repeated interactions. The rules-based, de-contextualized view of morality that is prevalent in dignity cultures is likely to be most beneficial for universal prosociality. However, dignity cultures are assumed to be individualistic (Leung & Cohen, 2011) and the evidence so far suggests that interdependent or collectivistic cultures might be more prosocial, although it is less clear when this prosociality extends beyond the ingroup and when it does not (Feygina & Henry, 2015; Luria et al., 2015). We therefore do not have a prediction for the prevalence of universal prosociality but will explore whether the cultural logics can explain differences in it. We expect positive reciprocity to be most prevalent in face and honor cultures, both of which can be described as collectivistic (Feygina & Henry, 2015). Finally, negative reciprocity, or punishment of non-cooperation, is likely to be most prevalent in honor cultures (Jackson et al., 2019; Nisbett & Cohen, 1996; but see Gächter & Herrmann, 2009). We therefore predict that higher country-level honor and face logic scores will predict higher positive reciprocity (H3a and H3b) and higher country-level honor scores will predict higher negative reciprocity (H3c).

Criterion Validity (H4-H5)

As a validation check for our newly proposed measure, we will attempt to replicate some earlier findings from the literature regarding the association of each cultural logic with other variables of interest. Honor concerns, particularly masculine honor, have been linked to violence and hostility at intrapersonal (e.g., suicide; Osterman & Brown, 2011), interpersonal (Brown et al., 2009; Nisbett &

Cohen, 1996; van Osch et al., 2013), and intergroup levels (Barnes et al., 2012; Saucier et al., 2018). We expect that endorsement of honor culture will predict more positive attitudes toward violence (H4a). Relations of dignity and face cultural logics with other psychological constructs have been studied much less. Some initial evidence suggests that face culture predicts more concern for maintaining the reputation (face) of the other person in an interpersonal conflict ("other-face concern" in face negotiation theory; Oetzel & Ting-Toomey, 2003), while dignity culture predicts lower other-face concern, both at individual (Smith et al., 2021) and cultural levels (Lun et al., 2023; Smith et al., 2021). We will include a measure of how strongly people are concerned about preserving their own (self-face) or the other person's face (other-face) in a situation of interpersonal conflict and expect to find a positive link between face endorsement and other-face concern in interpersonal conflict (H4b) and a negative link between dignity endorsement and other-face concern in interpersonal conflict (H4c). We will also test the predictive power of the newly developed measure by attempting to replicate findings that suggest people endorsing different cultural logics react differently to provocation: that honor is associated with retaliatory reactions, face with withdrawal, and dignity with the use of humor (Krys et al., 2017). Although Krys et al.'s (2017) study found the expected effects only for honor and dignity cultures, we will test all three predictions as initially theorized. Therefore, we expect that honor will predict retaliation (H5a), face will predict withdrawal (H5b), and dignity will predict humor (H5c) as reactions to provocation.

Exploratory Research Questions

We will also include other well-established measures of values (Schwartz Portrait Values Questionnaire; Schwartz, 2021) and morality (Moral Foundations Questionnaire-2; Atari et al., 2023) that will allow us to position the newly developed measures vis-à-vis other widely used constructs in the field. Although there is no sufficient evidence to propose formal hypotheses, we do have some expectations about how these constructs might be related. For the self-transcendence versus self-enhancement dimension of Schwartz values, we expect all three other-concern facets of cultural logics to correlate positively with self-transcendence, and honor-self and dignity-self to correlate positively with self-enhancement. For the conservation versus openness dimension, we expect both dignity facets to correlate positively with openness, and both face and honor facets to correlate positively with conservation. For moral foundations, we expect the other-concern facet of all three cultural logics to relate positively to care, dignity-self to relate positively to proportionality and dignity-other – to equality, and both facets of honor and face to relate positively to loyalty, authority, and purity. Short measures of religiosity and wellbeing will be included as exploratory measures.

Finally, we will gather country-level secondary data to position the newly developed measures vis-à-vis historical data and current economic and societal indicators. We expect honor cultures to

score higher on historical threats (e.g., pathogen prevalence and territorial conflicts) and dignity cultures to score lower on historical threats and higher on current levels of economic and societal development (e.g., GDP per capita and human development index). We do not make predictions about face cultures but will explore these relationships for the first time in this study.

Method

We will conduct a cross-cultural survey to (1) test the factor structure of the proposed scales of dignity, honor, and face cultural logics (henceforth – DHF, H1), (2) map the world cultures on the prevalence of these logics, and (3) identify both country-level and individual-level correlates and behavioral manifestations of these cultural logics, including prosocial behavior (H2-H5).

Sample

For all power calculations involving significance testing (see "Analysis plan summary" in the SM) we use an alpha level of .05, as we consider 5% probability of Type I error acceptable, given the relatively low risk of consequences of this type of error. We aim to collect data from at least 50 countries representing various world regions to provide valuable descriptive data and have sufficient power for testing country-level correlates of DHF. With a country level sample size of 50, we will be able to detect a medium-sized correlation of $r = .38$ in country-level analyses with 80% power. This sample size will also be sufficient for multilevel analyses (Maas & Hox, 2005) to explore potential person-environment interactions. Establishing a measurement model that adequately describes the data in all countries is a necessary precondition for providing valid cross-cultural data on the prevalence of DHF across the world. We will use the alignment optimization procedure (Asparouhov & Muthén, 2023) to identify the degree of comparability of the scores across all samples. A simulation study of the alignment optimization procedure suggests that with a high number of groups (>15), a group size of 250 would be sufficient for a model that contains non-invariant parameters (Wen & Hu, 2022). Based on power analysis for all other hypotheses we plan to test (see "Analysis plan summary" in the SM), a sample size of $n = 300$ per country should be sufficient to detect all the effects of interest. We will aim to recruit 300 participants per country. If the sample size in a country is lower than 300 but higher than 100 after making all reasonable efforts to recruit more participants, the sample will still be included in the main analysis. If the sample size is between 50 and 100 participants, the sample will only be included in multilevel analyses testing associations across all samples, but not in the alignment optimization procedure. If the sample size is below 50, the sample will be dropped from all analyses.

Inclusion and Exclusion Criteria

Only data from participants who are 18 years or older and were born and currently reside in the country of data collection will be included in the analyses[1]. Both student samples and local community samples will be included, and participants of all ethnic and religious backgrounds can take part. When sufficient data (at least $n = 100$) are available for student versus community samples or for different ethnic, religious, or regional groups in a country, we may further explore within-country variability in the endorsement of cultural logics. The questionnaire will include three attention checks and participants who fail two or three of them will be excluded. Each attention check will be embedded at the end of a questionnaire block (block 2 – DHF norms, block 5 - attitudes toward violence, and block 9 – moral foundations), and will read "Hello, are you still paying attention? If you are reading this question, please choose the option [scale label consistent with the scale in that block]". For tests including the dictator and ultimatum games, we will additionally exclude participants who failed the comprehension questions for the respective game.

Ethical Considerations and Open Science

The study has been approved by the ethics committee of the University of York. We will obtain necessary ethical approvals, or alternatively, documentation of ethics waivers or exemptions from all participating institutions. All participants will give informed consent to participate (the lead institution's consent form will be used as the default and will be adapted for local use when necessary). The local data collection teams will decide on participant compensation in accordance with local norms and requirements. This study is low-risk since it does not involve any risks to participants, deception, or collection of personal data as defined by GDPR. The study is preregistered (https://osf.io/2eygt). All study materials, data, and code will be shared via the Open Science Framework (https://osf.io/ygv2h/?view_only=e7936670774c4fcbb9d65bdce0f6e7b9) and made public as soon as this manuscript is published. We also aim to create a world map demonstrating the distribution of dignity, honor, and face logics across countries. This map and the underlying data will be available openly to other researchers.

Design and Procedure

Data will be collected online via the survey platform Qualtrics. All data will be stored on Qualtrics servers located in Germany in accordance with the GDPR standards. Most scales included in the study are already available in multiple languages. For each language used in the study, we will gather the available measures and the local labs will (1) check the quality of available translations and adjust when necessary and (2) translate all the remaining measures and instructions using a combination of collaborative and iterative translation with back-translation (Douglas & Craig, 2007).

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[1] Data from younger participants (16-17 y.o.) can be collected in some instances when local collaborators have obtained ethical approval for it. However, the main analysis will only include participants who are 18 or older.

The questionnaire will include measures of dignity, honor, and face cultural logics, behavioral measures of prosociality, and self-reported measures of potential correlates of DHF. The order of the measures will be as follows: DHF endorsement, DHF norms, prosocial behavior, self-reported positive and negative reciprocity, face negotiation in interpersonal conflict, attitudes toward violence, reactions to provocation, values, moral foundations, religiosity, subjective well-being; socio-demographic variables, including age, gender, country of residence, migration background, place of upbringing and current residence (urban/rural), ethnicity, religious denomination, education, and subjective income (see SM for the full questionnaire).

Dignity, Honor, and Face Cultural Logics

Based on the existing measures of dignity, honor, and face cultural logics (Grigoryan & Khachatryan, 2023; Smith et al., 2024; Vignoles et al., 2024; Yao et al., 2017), we developed a version of the questionnaire that differentiates between the self-concern and other-concern facets of each cultural logic (see Table S1 in the SM for the item list). Each facet was measured with 5 items, 30 items total. Out of 30 items, 18 have been tested in earlier cross-cultural studies (60%) and 12 were new or have only been tested in one country (40%). We pretested this questionnaire in two states in the USA (New York and Texas) and additionally received feedback on the face validity of the items from three anonymous reviewers. The item list was revised and expanded based on this feedback (see Table S5 for a revised item list).

To make sure that the DHF measure is culturally sensitive and captures relevant beliefs and behaviors across cultures, we started the present cross-cultural study with questionnaire review and refinement. In the onboarding questionnaire, each collaborator received the operational definitions of each of the constructs and a list of 18 items randomly selected from the full list of 36 items shown in Table S5. For each item, they were asked to first guess which of the six facets the item was supposed to measure. Then, they rated how well that item represents the construct on a 5-point scale. Finally, they rated how difficult it would be to translate this item to the language of data collection (if not English) on a 5-point scale. At the end, the full list of potential items for each subscale was shown and each collaborator could suggest replacements for existing items or new items to add.

Overall, 141 collaborators representing 50 countries of planned data collection provided feedback. About 70% of those who provided feedback planned to collect data in languages other than English. We revised the item list based on collaborator feedback; the findings from this feedback survey are presented in the SM. The revised item list was pilot tested again (see SM for more details) and Table S6 presents the final item list. The items within each scale (norms and endorsement) will be presented to the participants in a random order, to minimize order effects.

Prosocial Behavior

Universal prosociality will be measured using the dictator game, which is a common measure of altruistic behavior (Edele et al., 2013; Kahneman et al., 1986). We adapted the instructions for the non-incentivized version of the game from Romano et al. (2021), which allows for asynchronous pairing of the participants. Participants will be asked to distribute an endowment of 10 Monetary Units (MU) between themselves and another participant. The amount that the participant decides to transfer to the other person is a measure of universal prosociality as this is a one-shot interaction with a stranger, where the participant will not gain anything from sharing their hypothetical resources.

The ultimatum game (Güth et al., 1982) is traditionally used to measure negative reciprocity: the willingness to incur costs to punish non-cooperators (e.g., Yamagishi et al., 2012). We adapted the non-incentivized version of the game to assess both positive and negative reciprocity in a repeated interaction with a stranger. We operationalize positive reciprocity here as the willingness to return favors. After the dictator game, participants will be informed that they will be matched with a new person and will play the following two rounds with that same person. First, participants will be assigned to the role of the Receiver. This round measures negative reciprocity. Following adapted instructions from Columbus et al. (2021), participants will be asked to indicate whether they accept or reject each proposal made by another player, with proposals ranging from 0 to 10 MUs. Rejecting the proposal results in both players getting nothing. In this version of the game, the lowest value of the proposal that the participant would accept (or in other words - the highest cost that they would want to bear to punish the other player) is the measure of negative reciprocity. In the last round, participants will be in the role of the Proposer and decide how much they would propose for each value (0-10) that the other person could have proposed in the previous round. In this last round, we will use modified instructions, telling the participant that the other person will not be able to reject their proposal. This approach allows us to measure positive reciprocity without it being confounded by concerns about retaliation or rejection.

We will also measure participants' expectations on whether they think their proposal (conditional, from 0 to 10) would have been accepted or rejected to capture expectations of reciprocity. At the end of data collection, we will randomly pair each participant with another participant from the same country to calculate how many monetary units they hypothetically earned.

The results of our pretest suggest that the behavioral patterns observed in this procedure are comparable to those observed in incentivised versions of these games. This finding falls in line with a growing body of literature indicating that designs using imaginary and real rewards produce very consistent findings (Balliet et al., 2014; Romano et al., 2017, 2021). Additionally, we observed significant correlations between the behavioral measures of positive and negative reciprocity from this

adaptation of the ultimatum game and their corresponding self-reported measures, which supports the construct validity of our approach.

Self-Reported Measures

Positive and negative reciprocity. We will use six items from the German Socio-Economic Panel (SOEP) to assess positive and negative reciprocity (Egloff et al., 2013).

Attitudes toward violence. We will use the short version of the Velicer Attitudes toward Violence Scale (Velicer et al., 1989). Based on the adaptation of the scale by Anderson et al. (2006), we selected three items to measure each of the four domains of violence acceptance: acceptance of war (intergroup violence), intimate violence, penal code violence, and corporal punishment for children.

Self-face and other-face concern. Face concerns in interpersonal conflict will be measured by the short, 10-item version (Lun et al., 2023) of the Face Concerns Scale (Oetzel et al., 2001; Ting-Toomey & Oetzel, 2001). Participants are asked to recall a conflict they recently had with someone and to describe that interaction through a series of multiple-choice questions. Self-face concern is measured by 4 items (e.g., "I was concerned with protecting my self-image") and other-face concern - by 6 items (e.g., "I tried to be sensitive to the other person's self-worth").

Reactions to provocation. We will use the shortened version of the Reactions to Provocation Scale developed by Krys et al. (2017). The original measure includes 7 scenarios describing various insults. After each scenario, participants are asked how they would behave in that situation, with three options: retaliation ("return the insult"), withdrawal ("do nothing and expect others to intervene"), and humor ("humorously comment on that person's behavior"). In this study, we will use three out of seven scenarios with minor modifications (scenarios can be found in the SM).

Values. The short version of the Schwartz Portrait Value Questionnaire (PVQ-21; Schwartz, 2021) will be included to measure basic human values. The PVQ-21 measures ten values that are organized into a motivational continuum by two dimensions: conservation vs. openness to change and self-enhancement vs. self-transcendence. The scale is available in multiple languages and has been validated cross-culturally (e.g., Bilsky et al., 2011).

Moral foundations. We will use the 36-item version of the revised Moral Foundations Questionnaire (MFQ-2; Atari et al., 2023) to capture six moral foundations: care, equality, proportionality, loyalty, authority, and purity. The scale is available in multiple languages and has been validated cross-culturally (Atari et al., 2023).

Religiosity. The Duke University Religion Index (DUREL; Koenig & Büssing, 2010) is a 5-item measure of religiosity that includes one item capturing organizational religious participation,

one item capturing non-organizational participation, and three items capturing intrinsic religiosity. The scale is available in multiple languages and has been validated cross-culturally (Toscanelli et al., 2022).

Well-being. We will use the 5-item Satisfaction with Life Scale (SWLS; Diener et al., 1985). The measure is available in multiple languages and has been validated cross-culturally (Jang et al., 2017).

Country (Sample)-Level Indicators

Country performance. We will use the World Bank data on GDP per capita and economic inequality (Gini index), the United Nations' Human Development Index (HDI) and Gender Inequality Index (GII), and the Freedom House "Global Freedom" scores.

Historical data. We will use historical data on population density data from the World Bank for the years 1961 (fewer countries available) and 2000 (more countries available). We will also include historical data on territorial threats from the International Crisis Behavior project (ICB, 2022), an index of historical disease prevalence from Murray and Schaller (2010), vulnerability to natural disasters from the World Risk Index (World Risk Report, 2011), and resource scarcity measured as the prevalence of food insecurity and access to safe drinking water in the year 2000 from the Food and Agriculture Organization of the UN (FAOSTAT, 2024).

Cultural indicators. We will use available secondary data, including the individualism—collectivism and flexibility—monumentalism indices from Minkov and Kaasa (2022); the most recent data on cultural tightness—looseness (Eriksson et al., 2021), and the relational mobility index (Thomson et al., 2018).

Analysis Plan

All data analysis will be conducted in *R*. We will use all available data from the participants who have consented to take part in the study, even if they did not complete the questionnaire, unless an ethics approval for a specific sample prevents this. We will calculate indices for each construct as the mean score of all items that comprise each scale or subscale, if their reliability is acceptable (Cronbach's $\alpha > .50$). We will only remove items if the scale's reliability is $\alpha < .50$ in more than 40% of the samples and item removal improves the reliability by at least $\alpha = .10$ in at least half of the samples where it was initially poor. When calculating indices, the mean will be calculated based on non-missing items. We will test the robustness of our findings on a subsample of participants with no missing values. Each analysis will be run only on a subsample of participants who have no missing values on the variables involved in that analysis. Unlike all other indices, scores for the DHF constructs will be calculated based on the results of the confirmatory factor analysis and the alignment procedure. The alignment procedure will be initially performed in *R,* unless limitations to the *sirt*

package necessitate using Mplus for broader feature implementations. See Analysis Plan Summary and Analysis Pipeline in the SM for details. We will use a $p < .05$ significance threshold for all tests unless otherwise specified.

Factor structure (H1). To test the factor structure of the DHF questionnaire, we will conduct a multilevel confirmatory factor analysis (MCFA), specifying a hierarchical model with three higher-order latent factors representing dignity, honor, and face, each further represented by the two facets of self-concern and other-concern (H1a, see Fig. 1A). For comparison, we will test a multilevel CFA model with three correlated DHF latent variables, without further differentiation into the facets (H1b. Fig. 1B). If the hierarchical model fails to converge, we will compare a three-factor model to a six-factor model of each of the self and other facets separately. Each model will be clustered by country. Each factor structure will be tested separately at the individual level (Level 1) and country level (Level 2). When testing the individual-level factor structure, Level 1 in the model will include the proposed factor structure. Level 2 will include only the saturated model where all observed variable residuals are intercorrelated. When testing the country-level factor structure, Level 1 in the model will include only the saturated model of observed variable residual correlations, and Level 2 will include the proposed factor structure. We will select the best-fitting model for each level (see Analysis Plan Summary for model selection criteria) and combine them into a unified multilevel model. The individual endorsement and cultural norms will be tested separately resulting in 8 models: two ratings (individual endorsement, cultural norms) by two level tests (Level 1 factor structure, Level 2 factor structure) by two factor structures (hierarchical vs. three-factor or three-factor vs. six-factor) models.

Overall model plans. Each structural equation model is described below and in the SM. We expect that models may not converge or present improbable parameter estimates (i.e., a Heywood case of negative variance or correlations estimated over one). We will consider combining factors with extremely high correlations (i.e., > .95) if they are theoretically plausible, and negative variances will be controlled for by setting the variance to a small positive number based on the variances of other items or latent variables. For model non-convergence, we will try to find the convergence issue to modify the model. If samples do not have variability (i.e., all countries show the same effect), we will consider removing the Level 2 structure for each model. For all models, we may test the Level 1 and Level 2 structures separately to identify any model misspecifications and address convergence issues. We will also consider testing each sample separately to determine if a specific country leads to convergence issues. Finally, if the hierarchical model with higher-order latent constructs does not converge, we will alternatively test a six-factor model (see Fig. 1C above) that would still provide supporting evidence for the differentiation between the two facets of each cultural logic.

Model comparison. To compare the models, we will use AIC and BIC (lower values indicate better fit) in combination with the criteria proposed by Chen (2007): a difference between models of ΔCFI > .010 and ΔRMSEA > .015 would indicate that one model is significantly better fit to the data than the other (i.e., higher CFI and lower RMSEA would indicate better fit). The final model will then be modified for improvement. Model assessment will include evaluation of item loadings on both individual and sample level. If a given item does not significantly load on the respective factor **and** the model fit improves after removing the item, or the item loads in the opposite to the expected direction, the item will be removed. Otherwise, the item will be retained. If modification indices suggest a strong residual correlation between items, **and** this correlation is theoretically justified, a residual correlation will be added.

Once configural invariance has been established, we will employ the alignment optimization procedure to determine the degree of invariance across countries and identify the non-invariant parameters. We will consider the model to possess configural invariance, thus making it suitable for the application of the alignment optimization procedure, if the improved model achieves satisfactory fit indices (RMSEA < .10, SRMR < .10, CFI > .80). We use less strict cutoff values here than is suggested in the literature (e.g., Hu & Bentler, 1998), as we do not expect any of the models to be a great fit to the data this diverse (50 or more countries) before the alignment optimization procedure is used (see also Groskurth et al., 2024 discussion on sensitivity of model fit indices to data and analysis characteristics). We consider these cutoff values to provide good enough evidence for a common configural model, which can then be used as a starting point for the alignment optimization procedure. Once a common configural model is established, we will proceed to test invariance of the measure across samples using the alignment optimization procedure.

Testing approximate measurement invariance. The alignment optimization procedure (Asparouhov & Muthén, 2023) is an alternative to traditional invariance testing using multiple group CFA since it offers more flexibility and is more suitable for testing invariance across a large number of groups. All intercepts and factor loadings will be fixed across groups. The results will indicate which parameters are not invariant (i.e., different) across samples, allowing us to find the optimal factor structure for comparing the latent means across the highest number of groups.

The individual endorsement latent variable structure will be used to calculate DHF endorsement indices at the individual level for all individual-level analyses (H2, H4, H5). The cultural norms measure will be used to calculate DHF norms indices at the sample level and will be used for all analyses involving countries (H3 and mapping of DHF scores across the world).

Cultural logics and prosocial behavior (H2). The amount of contribution in the dictator game is the measure of universal prosociality. We will run a multilevel regression analysis predicting

prosociality from the six facets of DHF individual endorsement scores. The hypothesized model will only include random country intercepts for prosociality, but we will additionally explore whether the effects of DHF scores on prosociality vary by country by testing whether the addition of random slopes improves the model. A positive main effect of the other-concern facet of each cultural logic on prosociality in the random-intercept model will support the hypothesis. If the 3-factor model of DHF is supported in the previous stage, we will test the effects of endorsement of each factor on prosociality in an exploratory manner.

        Cross-country differences in prosociality (H3). We will run a multilevel path model predicting universal prosociality and positive and negative reciprocity from individual-level and sample-level DHF cultural norm scores. The model will be clustered by country. Level 1 of the model will include dignity, honor, and face mean scores predicting the three dependent variables of prosociality, positive reciprocity, and negative reciprocity at the individual-level. Level 2 will include the same regression structure using sample-level aggregates for dignity, honor, and face. We expect sample-level face and honor norms to positively predict positive reciprocity and sample-level honor norms to positively predict negative reciprocity. We do not have specific predictions for universal prosociality and sample-level DHF norms.

        Criterion validity (H4-H5). In a series of multilevel models with a random intercept for country, we will test if individual endorsement of dignity, honor, and face cultural logics show expected associations with other constructs. In all models, we will use the individual-level endorsement of the three cultural logics as individual-level predictors. We will also explore if these associations hold at the country level by using the country norms as predictors. For H4, two multilevel linear regression models will be examined using attitudes toward violence and other-face concern as dependent variables. The independent variables will be DHF individual-level participant means and mean DHF country norm ratings. For H5, a multilevel path model will be analyzed using individual-level models at Level 1 to predict retaliation, withdrawal, and humor scores. Level 2 will include these same dependent variables using sample-level aggregated DHF scores as predictors.

        Exploratory analyses. If the DHF factor structure shows considerable variability across countries, we might explore potential sources of non-invariance or factor structure variability. We will further explore whether endorsement of these cultural logics correlates with participant characteristics, such as values, moral foundations, and religiosity. We will then test whether modern country-level dignity, honor, and face scores can be predicted from historical data on population density, resource scarcity, and threats, and examine how these indices are related to other dimensions of cultural comparison (values, relational mobility, tightness—looseness) and objective indicators of country performance (GDP per capita, inequality, democracy). Finally, as we will match participants within

each country after the data is collected and calculate their earnings based on their decisions in the dictator and ultimatum games, we can further explore how country-level DHF scores relate to group-level earnings in the games. Some of these tests can be preregistered as secondary data analyses once the foundational work of establishing the generalizability of the cultural logic constructs and their measurement is completed.

Conclusion

This project will be the first global and well-powered study of the cultural logics of dignity, honor, and face. It will substantively advance the conceptualization and measurement of these constructs and will create a unique cross-cultural dataset for testing new hypotheses in the future. This project will also set a precedent for collaborative scale development that can help the scientific community to move beyond Western-centric measurement and etic approach to cross-cultural research. Finally, this project will shed light on cross-cultural differences in prosociality and contribute to our understanding of how criteria for evaluating character virtue help regulate social behavior across the world.

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Supplementary Materials

for

"(In)alienable worth? The prevalence of cultural logics of dignity, honor, and face and their links to prosociality across the world"

Contents

Pilot study 1

Method

      The pilot questionnaire included the DHF scale as shown in Table S1 (both individual endorsement and perceived norms), universal prosociality measured with a dictator game, positive and negative reciprocity measured with an ultimatum game, and self-reported positive and negative reciprocity. Pilot study materials, code, and data are available on OSF: https://tinyurl.com/4dzcdc3w. We recruited 300 US American participants from the crowdsourcing platform Prolific academic. The sample was balanced on gender (49% men, 48% women, 2% non-binary, and one person did not answer), and the mean age of participants was 38.7 years (*SD* = 14). We recruited an equal number of participants from New York (*N* = 146) and Texas (*N* = 147), which are expected to differ in DHF scores. The questionnaire took about 15 minutes to complete and participants received £2.25 for their time.

Table S1. Dignity, honor, face (DHF) questionnaire item list

Facet	Items	Source
D-Self	People should make decisions based on their own opinions and not based on what others think	1
D-Self	People should be true to themselves regardless of what others think	1
D-Self	People should stand up for what they believe in even when others disagree	1
D-Self	How much a person respects themselves is far more important than how much others respect them	1
D-Self	People's opinions should be independent of what others around them think	1
D-Other	People should always keep promises that they made to another person, no matter who that person is	2
D-Other	People should never lie to another person, no matter the circumstances	2
D-Other	People should never take someone's belongings without permission	2
D-Other	People should always keep the secrets they have been trusted with	2
D-Other	People should never talk about others behind their back in a negative way	2
H-Self	People should always be ready to defend their honor	1
H-Self	People should punish those who insult them	1
H-Self	People should not expect respect from others if they did not earn it	*
H-Self	If a person is insulted and they don't respond, they will look weak	1
H-Self	A person must show strength to be respected	1
H-Other	People should uphold and defend their family's reputation	1
H-Other	People should be concerned about damaging their families' reputation	1
H-Other	Men should protect the reputation of women they are related to	1

H-Other	If a person's friend's reputation is questioned, they should come to their defense	*
H-Other	When making decisions, people should always think about how their behavior will reflect on the reputation of their close ones	*
F-Self	People should control their behavior in front of others	1
F-Self	People should think twice before speaking to not embarrass themselves	*
F-Self	People should know their place in society and act according to it	*
F-Self	People should avoid situations where they could be embarrassed	*
F-Self	A person cannot respect themselves if they are not fulfilling their responsibilities	*
F-Other	People should be humble so as to maintain good relationships	1
F-Other	People should be extremely careful not to embarrass other people	1
F-Other	People should minimize conflict in social relationships at all costs	1
F-Other	It is important to maintain harmony within one's group	1
F-Other	People should never criticize others in public	1

Note. 1 - Adopted or adapted with minor modifications from Yao et al., 2017, Smith et al., 2024, and Vignoles et al., 2024. 2 – adapted from Grigoryan & Khachatryan, 2023. * - new items.

Instructions for measuring personal endorsement: "Please read the statements below and indicate to what extent *you personally* agree with each of them."

Instructions for measuring perceived norms: "Now please read the same statements, but instead of your personal opinion, indicate to what extent you think *other people in [Country]* would agree with each of them."

All items were answered on a 6-point scale from 1 - "strongly disagree" to 6 - "strongly agree".

Results

DHF questionnaire. Tables below show the results of exploratory and confirmatory factor analysis testing the structure of the DHF questionnaire. We initially proposed a six-factor model of the DHF questionnaire, and the results below correspond to this initial hypothesis. In the main study, we hypothesized that the data would be described by a hierarchical model, which is more consistent with the literature and will allow us to generate scores both for the three cultural logics and for the six facets.

Exploratory factor analysis. First, we conducted an exploratory factor analysis (EFA) with oblimin rotation on both endorsement and perceived norm items. Table S2.1 presents the pattern matrix with standardized item loadings for the endorsement items, and Table S2.2 presents the same matrix for the norms items. Model fit indices are presented in table notes.

Table S2.1. Standardized loadings of DHF endorsement items in the EFA

	F1	F2	F3	F4	F5	F6
Dignity: Self						
People should stand up for what they believe in even when others disagree	**.52**	.04	-.07	.24	.02	-.06
How much a person respects themselves is far more important than how much others respect them	**.39**	.13	-.09	.07	.03	-.02
People should be true to themselves regardless of what others think	**.43**	.05	-.04	**.34**	-.13	.02
People should make decisions based on their own opinions and not based on what others think	**.77**	.03	.02	-.11	-.08	.11
People's opinions should be independent of what others around them think	**.68**	.01	.02	-.03	.16	-.11
Dignity: Other						
People should *never* take someone's belongings without permission	.16	**.66**	-.14	-.03	.02	-.10
People should *never* talk about others behind their back in a negative way	-.06	**.75**	-.08	.07	.02	<.01
People should *always* keep the secrets they have been trusted with	.24	**.39**	.04	.22	.05	-.07
People should *never* lie to another person, no matter the circumstances	-.06	**.64**	.13	-.03	-.15	.18
People should *always* keep promises that they made to another person, no matter who that person is	.16	**.63**	.12	.01	-.01	.03
Honor: Self						
People should always be ready to defend their honor	.07	.07	**.31**	**.57**	-.17	.14
If a person is insulted and they don't respond, they will look weak	-.08	.06	**.62**	.02	.09	-.06
A person must show strength to be respected	<.01	.05	**.40**	.2	.18	.05
People should punish those who insult them	.06	-.09	**.70**	.07	-.04	<.01
People should not expect respect from others if they did not earn it	.10	.03	.20	.04	**.39**	-.04
Honor: Other						
People should uphold and defend their family's reputation	-.01	.06	.10	**.79**	-.05	.02
If a person's friend's reputation is questioned, they should come to their defense	.19	-.07	-.04	**.54**	-.02	.14
Men should protect the reputation of women they are related to	-.02	.01	-.09	**.79**	.08	.03
People should be concerned about damaging their families' reputation	-.05	.09	.12	**.66**	.16	-.05
When making decisions, people should always think about how their behavior will reflect on the reputation of their close ones	-.03	.03	.07	**.43**	**.31**	.14
Face: Self						
People should control their behavior in front of others	.05	-.02	-.15	.25	**.31**	.15
People should avoid situations where they could be embarrassed	-.11	-.02	.11	.11	**.34**	**.33**
A person cannot respect themselves if they are not fulfilling their responsibilities	.06	**.32**	.20	.21	**.34**	-.16
People should think twice before speaking to not embarrass themselves	.02	-.04	.09	<.01	**.62**	.19
People should know their place in society and act according to it	-.11	.06	**.43**	.01	**.31**	.13
Face: Other						
People should minimize conflict in social relationships at all costs	.01	.09	.08	-.03	.08	**.62**

People should be humble so as to maintain good relationships	.04	**.34**	.03	.11	.18	.22
People should never criticize others in public	<.01	**.43**	.02	.03	.10	**.35**
It is important to maintain harmony within one's group	.05	.05	-.14	.28	.09	**.55**
People should be extremely careful not to embarrass others	-.02	.25	-.07	.20	**.33**	.22

Note: Factor loadings >.30 are in bold. Model fit: TLI = .927, RMSEA = .042 (90%CI [.03, .05])

Table S2.2. Standardized loadings of DHF norms items in the EFA

	F1	F2	F3	F4	F5	F6
Dignity: Self						
People should stand up for what they believe in even when others disagree	**.44**	-.04	-.03	**.40**	-.02	-.09
How much a person respects themselves is far more important than how much others respect them	**.41**	**.38**	.01	-.14	-.03	-.05
People should be true to themselves regardless of what others think	**.56**	.17	-.15	.16	.01	-.14
People should make decisions based on their own opinions and not based on what others think	**.87**	-.08	.10	-.04	-.03	.04
People's opinions should be independent of what others around them think	**.82**	.03	-.02	-.02	.05	.03
Dignity: Other						
People should *never* take someone's belongings without permission	.09	**.50**	-.09	.15	.10	.15
People should *never* talk about others behind their back in a negative way	.18	**.41**	-.17	.03	.01	**.37**
People should *always* keep the secrets they have been trusted with	-.02	**.76**	-.03	.14	.03	-.04
People should *never* lie to another person, no matter the circumstances	-.01	**.49**	.18	-.08	-.07	**.44**
People should *always* keep promises that they made to another person, no matter who that person is	.06	**.60**	.06	.00	.14	.06
Honor: Self						
People should always be ready to defend their honor	.09	.03	.28	**.60**	-.13	.08
If a person is insulted and they don't respond, they will look weak	.06	.06	**.77**	.04	.02	-.05
A person must show strength to be respected	.14	.03	**.57**	.23	-.03	-.06
People should punish those who insult them	-.01	-.06	**.75**	.09	-.02	-.04
People should not expect respect from others if they did not earn it	.04	.01	.11	**.35**	.30	-.13
Honor: Other						
People should uphold and defend their family's reputation	.00	.03	.15	**.73**	-.06	.12
If a person's friend's reputation is questioned, they should come to their defense	.14	.06	.03	**.62**	.07	-.19
Men should protect the reputation of women they are related to	-.02	.16	.04	**.61**	.12	.03
People should be concerned about damaging their families' reputation	-.12	.16	.06	**.49**	.25	.03
When making decisions, people should always think about how their behavior will reflect on the reputation of their close ones	-.01	**.32**	.13	.19	**.46**	-.09
Face: Self						
People should control their behavior in front of others	.04	.09	.02	.02	**.40**	.22
People should avoid situations where they could be embarrassed	.01	-.10	.05	-.07	**.58**	.19
A person cannot respect themselves if they are not fulfilling their responsibilities	.02	.16	.15	**.41**	.23	-.04

People should think twice before speaking to not embarrass themselves	.00	.15	.10	.00	**.57**	.01
People should know their place in society and act according to it	-.09	-.04	**.55**	.00	.30	.11
Face: Other						
People should minimize conflict in social relationships at all costs	.06	-.07	-.06	.04	**.36**	**.51**
People should be humble so as to maintain good relationships	.10	-.03	-.24	.30	.27	**.36**
People should never criticize others in public	-.02	.13	-.10	-.01	.08	**.65**
It is important to maintain harmony within one's group	.01	.02	-.10	.25	.20	**.43**
People should be extremely careful not to embarrass others	.05	.10	-.04	.02	**.57**	.07

Note: Factor loadings >.30 are in bold. Model fit: TLI = .896, RMSEA = .055 (90%CI [.05, .06])

Confirmatory factor analysis: Model comparison. We initially hypothesized a six-factor model and expected it to perform better than a three-factor model, or a higher-order 3-factor model with two nested facets in each. In all models, each item significantly loaded on the respective latent construct with $p < .001$, and βs mostly > .50, and always > .30. Table S3.1 presents the results of model comparison for the endorsement items and model S3.2 for the norms items. In both cases, in addition to showing worse fit to the data based on fit indices, Model 3 also produced negative variances (for Dignity_other in both endorsement and norms, and for Honor_other in norms). Overall, the six-factor model performs best both for endorsement and perceived norms items.

Table S3.1. Model comparison for the endorsement items.

	Model 1 6 factors	Model 2 3 factors	Model 3 3 higher-order factors
χ^2 (df)	965 (390)	1196 (402)	1015 (397)
BIC	24607	25047	24894
AIC	24607	24813	24642
CFI	.833	.769	.820
TLI	.813	.750	.803
RMSEA	.070	.081	.072
SRMR	.075	.085	.079

Table S3.2. Model comparison for the norms items.

	Model 1 6 factors	Model 2 3 factors	Model 3 3 higher-order factors
χ^2 (df)	1235 (390)	1821 (402)	1320 (396)
BIC	25832	26350	25883
AIC	25554	26116	25627
CFI	.790	.647	.770
TLI	.765	.618	.747
RMSEA	.085	.108	.088

| SRMR | .098 | .123 | .111 |

For the pilot study, we calculated the mean dignity, honor, and face scores based on the items that did not show significant cross-loadings in the EFA. The dignity-self and dignity-other means are based on all five items, honor-self is based on three items (excluding items 1 and 5), honor-other is based on 4 items (excluding item 5), face-self is based on three items (excluding items 3 and 5), and face-other is based on 4 items (excluding item 5). The 6-factor CFA models based on this specification showed better fit to the data (endorsement: CFI = .891, RMSEA = .061, SRMR = .067; norms: CFI = .878, RMSEA = .071, SRMR = .075).

The measures of personal endorsement and perceived norms showed only modest correlations ($.02 < r < .46$, r_{mean} = .29), further supporting the need to differentiate the two. The measure of perceived norms captured group differences better than that of personal endorsement: for example, we found expected differences in honor between Texas and New York when asking about norms (Texas scored higher on both honor facets, self: d = 0.33, $F(1,291)$ = 7.92, p = .005 and other: d = 0.47, $F(1,291)$ = 15.83, $p <. 001$), but not when asking about personal endorsement (self: d = -0.18, $F(1,291)$ = 2.47, p = .117, other: d = 0.01, $F(1,291)$ = .002, p = .965).

Prosocial behavior. In the adapted version of the dictator game where we asked participants to distribute 10 monetary units between themselves and another person they did not know, participants gave away about 40% of their endowment, which is higher but comparable to the average of about 30% given in incentivized games (Engel, 2011). The results of the regression model predicting prosociality from the six facets of DHF are presented in Table S4. Not all effects were significant, but the effect sizes for all three other-concern facets were positive ($.19 < b < .32$) and the effect sizes for all three self-concern facets were negative ($-.13 < b < -.61$).

Table S4. Predicting prosocial behavior from the DHF facets

	b	SE	95% CI lower	upper	t-value	p-value
(Intercept)	5.10	0.98	3.17	7.04	5.19	<.001
Dignity: Self	-0.61	0.18	-0.97	-0.26	-3.39	<.001
Dignity: Other	0.31	0.17	-0.03	0.64	1.80	.073
Honor: Self	-0.26	0.12	-0.50	-0.02	-2.15	.033
Honor: Other	0.19	0.16	-0.12	0.51	1.21	.228
Face: Self	-0.13	0.18	-0.48	0.21	-0.75	.453
Face: Other	0.32	0.18	-0.03	0.67	1.83	.069

In the first round of the ultimatum game, where participants acted as the Receiver, they showed stronger negative reciprocity than is commonly found in incentivized ultimatum games: about 60% of participants rejected offers below 40%, whereas only about 50% of participants rejected offers below 20% in incentivized games (Houser & McCabe, 2014). In the last round, when participants are in the role of the Proposer, on average, they proposed about 43%, which is in line with the average of

40-50% found in incentivized games (Houser & McCabe, 2014). The proportion of offers that are equal or greater than the proposal of the other person is considered a measure of positive reciprocity. Note that in the pilot study, we did not tell the participants that the other person won't be able to reject their offer - this change to the procedure was made after the pilot study was finalized. As an additional validity test, we tested correlations between self-reported and behavioral measures of positive and negative reciprocity. Self-reported measures correlated positively with the corresponding behavioral measure ($r = .14$, $p = .015$ for positive and $r = .21$, $p <. 001$ for negative reciprocity) and were not significantly correlated with the other measure ($r = -.04$, $p = .522$ and $r = -.05$, $p = .404$).

The benefits of this procedure are that (1) it can be implemented without financial incentives, (2) participants do not need to interact in real time, (3) no personal data needs to be collected, (4) it can be implemented both online and offline, and (5) it provides rich within-individual behavioral data rather than a single-shot behavioral reaction. The only drawback is that the hypothetical Monetary Units are valued less than actual money, as the differences in mean contributions in the two games suggest. However, for a large cross-cultural study where maximization of access is the priority, the benefits clearly outweigh the costs.

Revising the DHF questionnaire. We revised the item list based on the results of the pilot study and reviewer feedback. Table S5 presents the revised list of items.

Table S5. Revised DHF item list

n	Facet	Items
1	D-Self	People should make decisions based on their own opinions and not based on what others think
2	D-Self	People should be true to themselves regardless of what others think
3	D-Self	People should stand up for what they believe in even when others disagree
4	D-Self	How much a person respects themselves is far more important than how much others respect them
5	D-Self	People's opinions should be independent of what others around them think
6	D-Self	A person's sense of worth should not depend on what others think of them**
7	D-Other	People should always keep promises that they made to another person, no matter who that person is
8	D-Other	People should never talk about others behind their back in a negative way
9	D-Other	People should not lie to another person, no matter who that person is*
10	D-Other	People should be treated with respect, no matter who they are**
11	D-Other	People should keep the secrets they have been trusted with, no matter whose secret it is*
12	D-Other	People should respect others' right to have a different opinion or a different lifestyle**

13	H-Self	People should be ready to defend their honor at any cost*
14	H-Self	People should punish those who insult them
15	H-Self	A person who has no honor is not worthy of respect**
16	H-Self	If a person is insulted and they don't respond, they will look weak
17	H-Self	A person must show strength to be respected
18	H-Self	People should not expect respect from others if they did not earn it
19	H-Other	People should uphold and defend their family's reputation
20	H-Other	If a person's friend's reputation is questioned, they should come to their defense
21	H-Other	People should be concerned about damaging their families' reputation
22	H-Other	Men should protect the reputation of women they are related to
23	H-Other	When making decisions, people should always think about how their behavior will reflect on the reputation of their close ones
24	H-Other	A person cannot be respected if they are not true to their word**
25	H-Other	A person cannot be respected if they are not loyal to their family**
26	F-Self	People should control their behavior in front of others
27	F-Self	People should think twice before speaking to not embarrass themselves
28	F-Self	People should know what is expected of them and act accordingly*
29	F-Self	People should avoid situations where they could be embarrassed
30	F-Self	A person cannot respect themselves if they are not fulfilling their responsibilities
31	F-Self	People worthy of respect are those who do what is expected of them and do it well**
32	F-Other	People should be humble so as to maintain good relationships
33	F-Other	People should be extremely careful not to embarrass other people, especially if it is someone of a higher rank*
34	F-Other	People should minimize conflict in social relationships at all costs
35	F-Other	It is important to maintain harmony within one's group
36	F-Other	People should never criticize others in public, especially if it is someone older or more experienced*

Note. * Modified items **Items added after review

Collaborator survey

We conducted a survey among the collaborators of the project to gather feedback on the conceptualization and measurement of these cultural logics. The goal was to co-develop the final version of the questionnaire with the collaborators from different countries, to ensure that the measure will be culturally sensitive and capture relevant beliefs and behaviors across cultures.

Overall, 141 collaborators provided feedback. The collaborators represented 50 different countries where data collection is planned, with the largest representation from the USA ($n = 14$), Türkiye ($n = 12$), and Poland ($n = 8$). About 30% of all collaborators who provided feedback plan to

collect data in English, and about 70% plan to collect data in other languages. In terms of expertise, fewer collaborators were familiar with face cultures (26% were not familiar at all, 57% had some familiarity, 17% had some expertise) and dignity cultures (24%, 60%, and 16%, respectively) than with honor cultures (14%, 63%, and 23%, respectively). Below we summarize the main issues identified by collaborators and describe how we plan to address them.

Conceptualization of dignity, honor, and face cultural logics

Overall, 26 participants (18%) gave feedback on the conceptualization of the DHF constructs, five of whom mentioned that they had no comments, and nine liked the definitions. Therefore, 54% of the feedback provided was positive, and only 8.5% of all participants gave critical feedback. The three issues described below summarize this critical feedback.

The multifaceted nature of the constructs. The only critical comment on the conceptualization of honor was that we ignore the multifaceted nature of this construct. While we agree that each of these cultural logics can be differentiated further (morality and respect components, differentiation between self-respect and social status, positive vs. negative reciprocity, differentiation based on gendered expectations in case of honor and face, etc.), our goal here is to develop a framework that can accommodate both similarities and differences between the three cultural logics in a consistent manner. We try to incorporate both morality and respect-related aspects of the three cultural logics through a diverse set of items that reflect these aspects in ways that are relevant to each cultural logic. We only differentiate between self- and other-concern facets at the construct level because these facets have the same psychological underpinnings across all three cultural logics and are likely to be differentially predictive of relevant outcomes. This conceptualization certainly simplifies these cultural logics, but we hope this level of simplification would be helpful in bringing together literature on the three cultural logics while still offering enough nuance for the constructs to be meaningful and have predictive power.

The intertwined nature of the constructs. Several comments pointed to the fact that the three constructs are closely linked and are likely to be present in all cultures to some extent. We now acknowledge in the manuscript that "despite the recognition that certain regions or cultures are typically considered to align with one of the three logics, we assume that any given cultural or national group will endorse all three logics to some extent, and that any given culture will have high between-individual variability in personal endorsement of each of these logics." We will also aim to reflect this continuous and interconnected nature of the constructs when mapping countries by DHF scores: for example, we could use a combination of the three basic colors - red, green, and blue - to show the prevalence of all three logics in each culture, rather than assigning each country to a single category.

What is "universalistic morality"? Some collaborators pointed out that when we use the term "universalistic morality" in the definition of dignity, we would need to agree on which moral foundations are relevant for dignity cultures. This is an excellent point that made us re-evaluate the items we were using for the dignity other-concern facet. Indeed, the moral norms that we used in formulating dignity items, like not lying or talking about people behind their back, are in fact universally important across cultures and are not unique to dignity cultures. What is unique to dignity cultures, is the idea that all people should be treated with dignity and respect, no matter who they are. We therefore moved away from using specific moral issues in the item wording and instead used items

(some suggested by collaborators, some new), that focus exclusively on this aspect of treating others with dignity, no matter who they are.

Item selection

Each collaborator received the operational definitions of each of the constructs and a list of 18 items randomly selected from the full list of 36. For each item, they were asked to first guess which of the six facets the item is supposed to measure. Then, they rated how well that item represents the construct on a 5-point scale from low to high quality. And finally, they rated how difficult it would be to translate this item to the language of data collection (if not English) on a 5-point scale from easy to difficult. At the end, the full list of potential items for each subscale was shown and each collaborator could suggest replacements for existing items or new items to add.

We considered dropping or replacing items if (1) fewer than 70% of collaborators correctly guessed which construct it measures; (2) if among those who guessed correctly, the average rating of the quality of the item was below 3 on a 5-point scale; or (3) if the average translation difficulty was above 4 on a 5-point scale. The excluded items were dropped if at least 5 items still remained per construct, or replaced if fewer than 5 items remained. The replacement items were either picked from the pool of items proposed by the collaborators or, if necessary, were newly developed by the lead team.

The tables below present the results for each construct. The first column shows the percentage of collaborators who correctly guessed which construct that item measures, the second column shows the same number but in the subgroup of collaborators who said they had some or considerable expertise in that construct, the third column shows the mean quality rating, and the last column shows the mean of translation difficulty rating. Since not all collaborators saw all the items, we additionally report the number of responses for each question. The number of responses in the "quality assessment" column is the same as in the first column since we only calculated the quality score in the subgroup of collaborators who guessed the construct correctly. The translation difficulty item was only shown to collaborators who plan to collect data in languages other than English.

Dignity-self

% guessed the construct correctly	% of experts who guessed correctly	Quality assessment	Translation difficulty
D-Self_1: People should make decisions based on their own opinions and not based on what others think (N=62)			
72.6%(45)	85.7% (6)	M=4.02 SD=0.783	M=1.59 SD=0.751 (N=39)
D-Self_2: People should be true to themselves regardless of what others think. (N=63)			
88.9% (56)	91.7% (11)	M=4.04 SD=0.613	M=1.98 SD=0.886 (N=43)
D-Self_3: People should stand up for what they believe in even when others disagree. (N=61)			

| 62.3% (38) | 70% (7) | M=3.76 SD=0.852 | M=1.80 SD=0.813 (N=41) |

D-Self_4: How much a person respects themselves is far more important than how much others respect them (N=68)

| 80.9% (55) | 71.4% (5) | M=4.02 SD=0.693 | M=1.60 SD=0.780 (N=45) |

D-Self_5: People's opinions should be independent of what others around them think. (N=62)

| 71% (44) | 69.2% (9) | M=3.73 SD=0.758 | M=1.61 SD=0.586 (N=41) |

D-Self_6: A person's sense of worth should not depend on what others think of them. (N=65)

| 83.1% (54) | 80% (4) | M=4.36 SD=0.682 | M=1.59 SD=0.726 (N=44) |

Five out of six items passed all the quality checks, meaning more than 70% of collaborators correctly identified which construct the item is supposed to measure, the quality ratings were all above the scale mid-point (3), and the translation difficulty ratings were all below 2. Therefore, these five items will be used to measure dignity-self:

1. People should make decisions based on their own opinions and not based on what others think.
2. People should be true to themselves regardless of what others think.
3. How much a person respects themselves is far more important than how much others respect them.
4. People's opinions should be independent of what others around them think.
5. A person's sense of worth should not depend on what others think of them.

Dignity-other

% guessed the construct correctly	% of experts who guessed correctly	Quality assessment	Translation difficulty

D-Other_1: People should always keep promises that they made to another person, no matter who that person is. (N=66)

| 57.6% (38) | 100% (2) | M=3.66 SD=0.745 | M=1.57 SD=0.695 (N=44) |

D-Other_2: People should never talk about others behind their back in a negative way (N=64).

| 51.6% (33) | 42.9% (3) | M=3.55 SD=0.711 | M=1.50 SD=0.741 (N=42) |

D_Other_3: People should not lie to another person, no matter who that person is. (N=65)

| 63.1% (41) | 87.5% (8) | M=3.65 | M=1.43 |

		SD=0.736	SD=0.655
			(N=46)

D-Other_4: People should be treated with respect, no matter who they are. (N=64)

81.3% (52)	71.4% (5)	M=4.25	M=1.44
		SD=0.738	SD=0.616
			(N=48)

D-Other_5: People should keep the secrets they have been trusted with, no matter whose secret it is. (N=63)

42.9% (27)	63.6% (7)	M=3.11	M=1.79
		SD=0.974	SD=0.833
			(N=43)

D-Other_6: People should respect others' right to have a different opinion or a different lifestyle. (N=66)

84.8% (56)	76.9% (10)	M=4.00	M=1.68
		SD=0.831	SD=0.695
			(N=47)

Only two items passed all quality checks: "People should be treated with respect, no matter who they are" and "People should respect others' right to have a different opinion or a different lifestyle." As described above, all the items that referred to specific (im)moral acts can be relevant in any culture, and this issue is reflected in both quantitative results and the responses to open-ended questions. We kept the two items that passed the quality control checks and added three new items that reflected this idea of "treating others with dignity no matter who they are" from the list of items suggested by collaborators. We slightly modified the second item from the initial list by removing the reference to "lifestyle", as we used "lifestyle" in one of the other items. The final list of dignity-other items is as follows:

1. People should be treated with respect, no matter who they are.
2. People should respect others' right to have a different opinion.
3. People are equally worthy of respect regardless of their beliefs or lifestyle.
4. People should be treated with dignity no matter who they are or where they are from.
5. People should respect others' choices, even if they disagree with them.

Honor-self

% guessed the construct correctly	% of experts who guessed correctly	Quality assessment	Translation difficulty
H-Self_1: People should be ready to defend their honor at any cost. (N=60)			
81.7% (49)	76.9% (10)	M=4.33	M=1.52
		SD=0.718	SD=0.792
			(N=44)
H-Self_2: People should punish those who insult them. (N=64)			
56.3% (36)	80% (12)	M=3.78	M=1.41
		SD=0.797	SD=0.658
			(N=44)

H-Self_3: A person who has no honor is not worthy of respect. (N=65)

| 75.4% (49) | 80% (12) | M=3.88 SD=0.857 | M=1.75 SD=0.840 (N=40) |

H-Self_4: If a person is insulted and they don't respond, they will look weak. (N=62)

| 54.8% (34) | 71.4% (10) | M=4.03 SD=0.758 | M=1.65 SD=0.805 (N=49) |

H-Self_5: A person must show strength to be respected. (N=66)

| 65.2% (43) | 84.6% (11) | M=3.79 SD=0.782 | M=1.51 SD=0.736 (N=43) |

H-Self_6: People should not expect respect from others if they did not earn it. (N=66)

| 40.9% (27) | 50% (7) | M=3.54 SD=0.706 | M=1.68 SD=0.771 (N=44) |

Only two items passed all quality checks: "People should be ready to defend their honor at any cost" and "A person who has no honor is not worthy of respect". Importantly, all items except the last one made the >70% cut among the experts, so we focused on revising the existing items based on open responses from the collaborators rather than coming up with new items. The "strength" item was revised to read "People must show they can stand up for themselves to be respected". Only one of the two "insult" items was retained: "If a person gets insulted and they don't respond, they will look weak". Finally, we added another item to supplement the list: "People should never tolerate being disrespected", which is an adaptation of an item from Barnes et al. (2014). The final list of items is as follows:

1. People should be ready to defend their honor at any cost
2. A person who has no honor is not worthy of respect
3. People must show they can stand up for themselves to be respected
4. If a person gets insulted and they do not respond, they will look weak
5. People should never tolerate being disrespected

Honor-other

% guessed the construct correctly	% of experts who guessed correctly	Quality assessment	Translation difficulty
H-Other_1: People should uphold and defend their family's reputation. (N=62)			
79% (48)	86.7% (13)	M=4.16 SD=0.688	M=1.62 SD=0.739 (N=47)
H-Other_2: If a person's friend's reputation is questioned, they should come to their defense. (N=63)			
81% (51)	76.9% (10)	M=4.02 SD=0.632	M=1.80 SD=0.833 (N=46)

H-Other_3: People should be concerned about damaging their families' reputation. (N=63)

77.8% (49)	73.3% (11)	M=4.19	M=1.87
		SD=0.607	SD=0.963
			(N=38)

H-Other_4: Men should protect the reputation of women they are related to. (N=63)

58.7% (37)	66.7% (8)	M=3.72	M=1.59
		SD=0.741	SD=0.658
			(N=44)

H-Other_5: When making decisions, people should always think about how their behavior will reflect on the reputation of their close ones. (N=68)

73.5% (50)	82.4% (14)	M=3.96	M=1.69
		SD=0.807	SD=0.841
			(N=42)

H-Other_6: A person cannot be respected if they are not true to their word. (N=66)

9.1% (6)	23.1% (3)	M=3.83	M=1.58
		SD=0.408	SD=0.739
			(N=48)

H-Other_7: A person cannot be respected if they are not loyal to their family. (N=60)

36.7% (22)	33.3% (4)	M=3.50	M=1.71
		SD=0.859	SD=0.802
			(N=38)

Four items passed all quality checks: "People should uphold and defend their family's reputation", "If a person's friend's reputation is questioned, they should come to their defense", "People should be concerned about damaging their families' reputation", and "When making decisions, people should always think about how their behavior will reflect on the reputation of their close ones". We will slightly modify the third item, as some open responses indicated that "concerned" might be misinterpreted or difficult to translate, the revised wording is "People should not do anything that would damage their families' reputation". We will also simplify the last item: "People should always think about how their behavior will reflect on the reputation of their close ones".

Although the item "Men should protect the reputation of women they are related to" did not make the cut, it was the next best-performing item in the list (nearly 60% of all collaborators and nearly 70% of all collaborators with expertise in the subject identified this item as measuring honor other-concern). Considering (1) the centrality of masculine and feminine gender expectations to the concept of honor, (2) that this item performed well in previous cross-cultural studies (Smith et al., 2024; Vignoles et al., 2024) and (3) that this item performed well in our pilot study, we decided to keep this item as the fifth item of the honor-other subscale. Therefore, the final item list is as follows:

1. People should uphold and defend their family's reputation
2. If a person's friend's reputation is questioned, they should come to their defense
3. People should not do anything that would damage their families' reputation
4. People should always think about how their behavior will reflect on the reputation of their close ones
5. Men should protect the reputation of women they are related to

Face-self

% guessed the construct correctly	% of experts who guessed correctly	% guessed incorrectly but within the same domain	Quality assessment	Translation difficulty
F-Self_1: People should control their behavior in front of others. (N=63)				
42.9% (27)	58.3% (7)	28.6% (18)	M=3.67 SD=0.832	M=1.45 SD=0.686 (N=47)
F-Self_2: People should think twice before speaking to not embarrass themselves (N=66)				
54.5% (36)	66.7%	6.1% (4)	M=3.83 SD=0.785	M=1.69 SD=0.701 (N=45)
F-Self_3: People should know what is expected of them and act accordingly. (N=65)				
49.2% (30)	50% (3)	32.3% (21)	M=3.94 SD=0.854	M=1.52 SD=0.691 (N=46)
F-Self_4: People should avoid situations where they could be embarrassed. (N=59)				
50.8% (30)	53.8% (7)	11.9% (7)	M=3.67 SD=0.959	M=1.67 SD=0.737 (N=39)
F-Self_5: A person cannot respect themselves if they are not fulfilling their responsibilities. (N=61)				
68.9% (42)	58.3% (7)	8.2% (5)	M=3.83 SD=0.834	M=1.61 SD=0.754 (N=44)
F-Self_6: People worthy of respect are those who do what is expected of them and do it well. (N=62)				
46.8% (29)	40% (4)	32.3% (20)	M=3.83 SD=0.889	M=1.62 SD=0.731 (N=42)

Face items performed worse than dignity and honor items. This outcome might be because fewer collaborators had expertise in this area, or because the cultural logic of face is relational at its core, which makes it difficult to differentiate between self and other concerns. Finally, more face items were developed specifically for this study and have not been tested before (5 out of 6 face-self items and 1 out of 5 face-other items) compared with dignity and honor. Considering all this, especially the relational nature of the concept of face, we apply less strict criteria to the choice of face items. Specifically, we consider the percentage of collaborators who correctly identified that the item measures face, but not the specific domain (self or other).

We decided to keep items that were correctly identified by at least 50% of the collaborators if over 60% of collaborators correctly guessed that the item measures face cultural logic. Three items satisfied these criteria: "People should think twice before speaking not to embarrass themselves", "People should avoid situations where they could be embarrassed", and "A person cannot respect themselves if they are not fulfilling their responsibilities". The "avoid" item was slightly modified to

read "People should avoid doing anything inappropriate so as not to embarrass themselves" and the "respect" item was slightly modified to shift it from self-respect to deserving respect from others, to bring it in line with other "respect" items in honor and dignity scales: "People worthy of respect are those who do their utmost to fulfill the expectations of their role". The two items that tapped into controlling one's behavior to meet others' expectations (F-Self_1 and F-Self_3) both were identified as face items by more than 70% of collaborators, suggesting that this is an important element of face cultural logic. We suggest a new item that we hope will capture this aspect better: "People should always know what is appropriate for a given situation and act accordingly". Finally, based on open responses, we added a new item: "If someone made me lose face, I would avoid this person in the future". Therefore, the final list of items is as follows:

1. People should think twice before speaking so as not to embarrass themselves
2. People should avoid doing anything inappropriate so as not to embarrass themselves
3. People worthy of respect are those who do their utmost to fulfill the expectations of their role
4. People should always know what is appropriate for a given situation and act accordingly
5. If someone made me lose face, I would avoid this person in the future

Face-other

% guessed the construct correctly	% of experts who guessed correctly	% guessed incorrectly but within the same domain	Quality assessment	Translation difficulty
F-Other_1: People should be humble so as to maintain good relationships. (N=68)				
38.2% (26)	58.3% (7)	23.5% (16)	M=3.35 SD=0.977	M=1.68 SD=0.639 (N=44)
F-Other_2: People should be extremely careful not to embarrass other people, especially if it is someone of a higher rank. (N=63)				
76.2% (48)	90.9% (10)	6.3% (4)	M=4.19 SD=0.741	M=1.68 SD=0.784 (N=37)
F-Other_3: People should minimize conflict in social relationships at all costs. (N=64)				
42.2% (27)	37.5% (3)	17.2% (11)	M=3.00 SD=0.961	M=1.57 SD=0.683 (N=47)
F-Other_4: It is important to maintain harmony within one's group. (N=63)				
44.4% (28)	55.6% (5)	6.3% (4)	M=3.26 SD=1.023	M=1.67 SD=0.764 (N=40)
F-Other_5: People should never criticize others in public, especially if it is someone older or more experienced. (N=63)				
73% (46)	83.3% (5)	4.8% (3)	M=3.93 SD=0.654	M=1.43 SD=0.668 (N=42)

Two items passed all initial quality checks: "People should be extremely careful not to embarrass other people, especially if it is someone of a higher rank" and "People should never criticize others in public, especially if it is someone older or more experienced". We also decided to retain the item "People should minimize conflict in social relationships at all costs", as the idea of group harmony and avoiding open conflict is central to the face cultural logic and this item performed well in previous cross-cultural studies (Smith et al., 2024; Vignoles et al., 2024; Yao et al., 2017). Two more items were added/modified based on collaborator suggestions: "People should avoid making others look incompetent" and "People should treat others according to their social status to maintain good relationships". The final list of items is as follows:

1. People should be extremely careful not to embarrass others, especially if it is someone of a higher rank
2. People should never criticize others in public, especially if it is someone older or more experienced
3. People should minimize conflict in social relationships at all costs
4. People should avoid making others look incompetent
5. People should treat others according to their social status to maintain good relationships

Pilot study 2

We pilot-tested this revised item list in a new sample of participants. We recruited a sample of US and UK residents of diverse ethnic backgrounds, where we expected to see cultural differences in the perceived norms of the three cultural logics: White European/Caucasian participants who were expected to report stronger dignity norms than others (N=189), Middle Eastern participants who were expected to report stronger honor norms than others (N=108), and East Asian participants who were expected to report stronger face norms than others (N=153). We additionally included 9 items that were used in the earlier versions of the questionnaire, to be able to test alternatives if the items from the final item list do not perform well. Finally, we included the 6-item measure of self-reported positive and negative reciprocity (Egloff et al., 2013) to test the predictive validity of the measure. We expected the other-concern facet of each cultural logic to predict more positive reciprocity, and additionally the self-concern facet of honor to predict negative reciprocity.

Results

We ran a confirmatory factor analysis with 6 latent constructs corresponding to the self and other facets of each cultural logic. We included both items from the revised item list presented above and the backup items, to check if the backup items might perform better. The results are presented in Table S6.

Table S6. Factor loadings of all items included in the second pilot study in a 6-factor CFA

	Norms				Endorsement			
	b	*SE*	*z*	*β*	*b*	*SE*	*z*	*β*
Dignity-self								
People should make decisions based on their own opinions and not based on what others think	1			0.760	1			0.564
People should be true to themselves regardless of what others think	1.052	0.059	17.851	0.809	1.233	0.117	10.5	0.721
People's opinions should be independent of what others around them think	0.915	0.058	15.695	0.724	0.985	0.115	8.558	0.523
How much a person respects themselves is far more important than how much others respect them	0.833	0.056	14.793	0.687	0.889	0.126	7.045	0.407
A person's sense of worth should not depend on what others think of them	0.884	0.058	15.28	0.707	0.951	0.112	8.491	0.517
(B) People should stand up for what they believe in even when others disagree	0.749	0.055	13.51	0.633	1.089	0.109	9.967	0.657
(B) People should speak their mind	0.959	0.06	15.86	0.730	0.81	0.11	7.359	0.429
(B) People should not care what others around them think.	1.027	0.061	16.777	0.767	1.303	0.145	8.989	0.560
Dignity-other								
People should be treated with dignity no matter who they are or where they are from	1			0.724	1			0.610
People are equally worthy of respect regardless of their beliefs or lifestyle	1.213	0.073	16.656	0.809	1.499	0.132	11.331	0.703

People should respect others' choices, even if they disagree with them	1.024	0.069	14.773	0.719	1.221	0.113	10.787	0.654
People should respect others' right to have a different opinion	1.166	0.068	17.139	0.833	1.036	0.098	10.539	0.633
People should be treated with respect, no matter who they are	1.202	0.07	17.133	0.832	1.464	0.123	11.947	0.769
Honor-self								
People should never tolerate being disrespected	1			0.575	1			0.400
People should be ready to defend their honor at any cost	1.317	0.117	11.256	0.718	1.961	0.256	7.659	0.728
A person who has no honor is not worthy of respect	1.255	0.122	10.262	0.624	1.422	0.217	6.538	0.483
People must show they can stand up for themselves to be respected	0.853	0.094	9.092	0.528	1.578	0.222	7.101	0.582
If a person gets insulted and they don't respond, they will look weak.	1.418	0.128	11.036	0.696	1.595	0.226	7.064	0.574
(B) People should punish those who insult them	1.413	0.128	11.037	0.696	1.219	0.181	6.73	0.513
(B) People always need to show off their power in front of their competitors.	1.355	0.134	10.138	0.613	1.439	0.208	6.912	0.545
Honor-other								
People should not do anything that would damage their family's reputation	1			0.883	1			0.771
People should always think about how their behavior will reflect on the reputation of their close ones	0.943	0.037	25.324	0.863	0.858	0.054	15.876	0.738
People should uphold and defend their family's reputation	0.853	0.035	24.091	0.842	0.886	0.054	16.313	0.756
Men should protect the reputation of women they are related to	0.714	0.046	15.613	0.644	0.792	0.06	13.163	0.624

If a person's friend's reputation is questioned, they should come to their defense	0.321	0.045	7.137	0.335	0.251	0.04	6.198	0.306
(B) People should be concerned about their family having a bad reputation.	0.938	0.04	23.436	0.829	0.929	0.056	16.451	0.761

Face-self

People should always know what is appropriate for a given situation and act accordingly	1			0.585	1			0.418
People worthy of respect are those who do their utmost to fulfill the expectations of their role	0.911	0.101	9.03	0.501	1.132	0.194	5.825	0.373
People should avoid doing anything inappropriate so as not to embarrass themselves	1.556	0.127	12.293	0.768	2.296	0.288	7.972	0.706
People should think twice before speaking so as not to embarrass themselves	1.466	0.121	12.085	0.747	1.686	0.227	7.426	0.584
If someone made me lose face, I would avoid this person in the future	0.851	0.11	7.745	0.416	1.079	0.178	6.063	0.397
(B) People should control their behavior in front of others	1.392	0.116	12.008	0.740	1.606	0.211	7.616	0.622

Face-other

People should treat others according to their social status to maintain good relationships	1			0.597	1			0.486
People should be extremely careful not to embarrass others, especially if it is someone of a higher rank	1.244	0.100	12.487	0.761	1.357	0.146	9.327	0.699
People should avoid making others look incompetent	0.596	0.087	6.884	0.361	0.579	0.099	5.852	0.336

People should never criticize others in public, especially if it is someone older or more experienced	1.177	0.099	11.849	0.704	1.159	0.134	8.629	0.597
People should minimize conflict in social relationships at all costs	0.894	0.086	10.361	0.587	0.840	0.103	8.113	0.536
(B) It is important to maintain harmony within one's group	0.710	0.068	10.42	0.591	0.428	0.069	6.173	0.360
(B) People should be very humble to maintain good relationships	0.936	0.089	10.51	0.598	0.690	0.098	7.058	0.432

Note: Norms model fit: CFI=.865, RMSEA=.065, SRMR=.085, Endorsement model fit: CFI=.781, RMSEA=.063, SRMR=.082. All loadings are significant at $p < .001$.

For dignity-self, all items performed well and the loadings were >.40 for both endorsement and norms measures. We will therefore keep the five items that passed all previous rounds of item selection. For dignity-other, all five items performed well and no backup items were included. For honor-self, all items performed well (βs > .40), we will therefore keep the five items that passed all previous rounds of item selection. For honor-other, the backup item about family reputation performed better than the item about friend's reputation (β =.8 vs. β =.3). This is not surprising, given the scale contains two other items about family reputation that would all be strongly correlated. This backup item would be a replacement for one of the other family items, but since both of the family items performed well and the friend item performed very well in the collaborator survey and increases the overall validity of the construct by covering other aspects of honor-other besides family, we decided to keep the original five items. For face-self, the backup item ("People should control their behavior in front of others") performed better than the new item that was introduced based on the collaborator survey ("If someone made me lose face, I would avoid this person in the future"). We decided to keep the "control behavior" item and discard the new item, as it has been successfully used in earlier studies and performed well in our first pilot study. Finally, for face-other, one item ("People should avoid making others look incompetent") underperformed, with loadings <.40 on both norms and endorsement measures. Since this was a new item added based on the results of the collaborator survey, we will replace it with an item that has been successfully used in earlier studies and performed better in the pilot: "People should be very humble to maintain good relationships". The final item list is presented in table S7. The item order will be randomized in the survey.

Table S7. The final item list

n	Facet	Items
1	D-Self	People should be true to themselves regardless of what others think
2	D-Self	How much a person respects themselves is far more important than how much others respect them
3	D-Self	People's opinions should be independent of what others around them think
4	D-Self	People should make decisions based on their own opinions and not based on what others think
5	D-Self	A person's sense of worth should not depend on what others think of them
6	D-Other	People should be treated with respect, no matter who they are
7	D-Other	People should respect others' right to have a different opinion
8	D-Other	People are equally worthy of respect regardless of their beliefs or lifestyle
9	D-Other	People should be treated with dignity no matter who they are or where they are from
10	D-Other	People should respect others' choices, even if they disagree with them
11	H-Self	A person who has no honor is not worthy of respect
12	H-Self	People must show they can stand up for themselves to be respected
13	H-Self	People should never tolerate being disrespected
14	H-Self	People should be ready to defend their honor at any cost
15	H-Self	If a person gets insulted and they do not respond, they will look weak
16	H-Other	People should always think about how their behavior will reflect on the reputation of their close ones

17	H-Other	People should uphold and defend their family's reputation
18	H-Other	People should not do anything that would damage their family's reputation
19	H-Other	Men should protect the reputation of women they are related to
20	H-Other	If a person's friend's reputation is questioned, they should come to their defense
21	F-Self	People should think twice before speaking so as not to embarrass themselves
22	F-Self	People should control their behavior in front of others
23	F-Self	People should always know what is appropriate for a given situation and act accordingly
24	F-Self	People worthy of respect are those who do their utmost to fulfill the expectations of their role
25	F-Self	People should avoid doing anything inappropriate so as not to embarrass themselves
26	F-Other	People should be very humble to maintain good relationships
27	F-Other	People should be extremely careful not to embarrass others, especially if it is someone of a higher rank
28	F-Other	People should treat others according to their social status to maintain good relationships
29	F-Other	People should minimize conflict in social relationships at all costs
30	F-Other	People should never criticize others in public, especially if it is someone older or more experienced

We calculated DHF norms mean scores based on this final item list to see if we can observe the expected group differences. Table S8 shows these mean scores. All means were significantly different between the three groups. As expected, White Europeans scored highest on both facets of dignity, but particularly high on dignity-self; Middle Easterners scored highest on both facets of honor, but particularly high on honor-other; East Asians scored highest on face-other, but there were no significant differences between East Asian and Middle Eastern participants on face-self. Overall, these results suggest that the final version of the questionnaire captures quite well the expected group differences in perceived norms associated with dignity, honor, and face cultural logics.

Table S8. Group differences in dignity, honor, and face norms

| | *Mean (SD)* | | | *F-value* |
	White Europeans	Middle Easterners	East Asians	*(p-value)*
Dignity-Self	4.59 (0.77)	3.64 (1.16)	3.61 (0.92)	60.37 (< .001)
Dignity-Other	4.45 (1.01)	3.88 (1.21)	4.00 (0.96)	12.74 (< .001)
Honor-Self	4.29 (0.88)	4.87 (0.79)	4.31 (0.72)	20.93 (< .001)
Honor-Other	4.48 (0.88)	5.36 (0.64)	4.87 (0.67)	46.42 (< .001)
Face-Self	4.44 (0.73)	5.09 (0.62)	5.00 (0.70)	40.12 (< .001)
Face-Other	3.99 (0.84)	4.73 (0.73)	4.87 (0.70)	63.86 (< .001)

Finally, we tested whether the two facets of each cultural logic are differentially predictive of self-reported positive and negative reciprocity. Table S9 presents the results.

Table S9. Regression models predicting self-reported positive and negative reciprocity from the self- and other-facet of dignity, honor, and face cultural logics.

	Positive reciprocity			Negative reciprocity		
	b	*SE*	*p-value*	*b*	*SE*	*p-value*
Dignity-Self	0.26	.08	< .001	-0.10	.12	.388
Dignity-Other	0.31	.07	< .001	-0.30	.11	.005
Honor-Self	-0.04	.07	.545	0.68	.10	< .001
Honor-Other	0.19	.07	.007	-0.14	.11	.217
Face-Self	-0.07	.08	.396	0.34	.13	.008
Face-Other	-0.03	.07	.653	-0.15	.11	.169

Consistent with expectations, the other-concern facet of dignity and honor predicted more positive reciprocity; however, this was not the case for the other-concern facet of face. Additionally, dignity-self also predicted more positive reciprocity. We found the expected positive association between honor-self and negative reciprocity. However, we also observed a negative relationship between dignity-other and negative reciprocity and a positive relationship between face-self and negative reciprocity. The latter finding, combined with nearly identical mean scores for face-self in the Middle Eastern and East Asian subsamples suggests that the self-protective aspect of face might be very similar to honor and might be equally prevalent in what are typically considered honor and face cultures.

Overall, the questionnaire fit the theoretical factor structure well enough, the scores based on the current version of the questionnaire were able to capture meaningful group differences, and the relationships with self-reported positive and negative reciprocity were mostly consistent with predictions, showing some additional nuances for the self- and other-facet differentiation that can be further explored in the main study.

Main study questionnaire

Participant information sheet and consent form [see ethics documentation]

Block 1. Dignity, honor, face

DHF_endorsement

Please read the statements below and indicate to what extent *you personally* agree or disagree with each of them.

Response scale: strongly disagree (1), disagree (2), somewhat disagree (3), somewhat agree (4), agree (5), strongly agree (6)

[See table S7 for the full DHF item list. Item order is randomized]

DHF_norms

Now please read the same statements, but instead of your personal opinion, indicate to what extent you think *other people in your country* would agree or disagree with each of them.

The item list and the response scale are the same as above.

Additionally, this page will include one attention check question: "Hello, are you still paying attention? If you are reading this question, please choose the option "Disagree""

<u>Block 2. Dictator game</u>

General introduction

Now we would like to ask you to make decisions in a series of tasks. You will be playing for Monetary Units (MU), a fictional currency that gauges how well you are doing at the decision-making task. These Monetary Units are meaningful in the context of the experiment, but have no value in the real world.

In each task, we will randomly match you with another participant. You don't have to wait for the other participant to make your decisions. Your responses will be matched at the end of the session. Your decisions are anonymous.

Please read the instructions for each task carefully. We will ask you a couple of questions at the end to check your understanding.

Dictator game instructions

Page 1:

In this task you will be matched with a randomly selected participant. One of you will divide 10 Monetary Units between the two of you. You will be randomly assigned to one of the two roles: the Giver or the Receiver.

The Giver will decide how the 10 Monetary Units will be divided between you two. The Giver can distribute these Units in any way they want.

The Receiver has no say in the decision of the Giver. The Receiver will get as many Monetary Units as the Giver decided to give them.

Page 2:

Examples:
1. If the Giver sends 0 MU to the Receiver
The Giver earns: 10 MU
The Receiver earns: 0 MU
2. If the Giver sends 5 MU to the Receiver
The Giver earns: 5 MU
The Receiver earns: 5 MU

Page 3: Comprehension questions:

1. Suppose the Giver decides to send 0 MU to the Receiver.

How many MU does each person then earn?

- Giver: 0 MU; Receiver: 0 MU
- Giver: 10 MU; Receiver: 0 MU
- Giver: 5 MU; Receiver: 0 MU

2. Suppose the Giver decides to send 6 MU to the Receiver.
 How many MU does each person then earn?

- Giver: 0 MU; Receiver: 6 MU
- Giver: 10 MU; Receiver: 6 MU
- Giver: 4 MU; Receiver: 6 MU

Page 4:

If the participant answered both questions correctly, they will receive the message:

"Well done, you have correctly answered both questions! Now you can proceed to the task."

If the participant answered one or both of the comprehension questions incorrectly, they will see this message, followed by a second attempt at answering the same question(s)

"Your answer to this question was incorrect. Please read the instructions carefully and try answering the question again.

The Giver will decide how the 10 Monetary Units will be divided between you two. The Giver can distribute these Units in any way they want. The Receiver has no say in the decision of the Giver. The Receiver will get as many Monetary Units as the Giver decided to give them."

Then, if the participant answers incorrectly again, they will be given the following feedback and will be allowed to continue:

"You have given an incorrect answer to at least one of the comprehension questions. Please read the instructions one more time.

In this task you will be matched with a randomly selected participant. One of you will divide 10 Monetary Units between the two of you. You will be randomly assigned to one of the two roles: the Giver or the Receiver.

The Giver will decide how the 10 Monetary Units will be divided between you two. The Giver can distribute these Units in any way they want. The Receiver has no say in the decision of the Giver. The Receiver will get as many Monetary Units as the Giver decided to give them.

Therefore, if the Giver decides to send 0 MU to the Receiver, then the Giver will earn 10 MU (10-0=10) and the Receiver will earn 0 MU.

If the Giver decides to send 6 MU to the Receiver, then the Giver will earn 4 MU (10-6=4) and the Receiver will earn 6 MU.

Now you can proceed to the task."

Dictator game decision

You are in the role of the **Giver**. Now it's time to make your decision!

You must decide how many Monetary Units (MU) to send to the Receiver and how many Monetary Units to keep for yourself. We remind you that the Monetary Units can be distributed in any way you want and the Receiver has no control over your decision.

Please choose how many Monetary Units, if any, you want to send to the Receiver?

Response scale from 0 to 10.

Block 3. Ultimatum game

Ultimatum game instructions

"In this task, you will be matched with a new participant. One of you will divide 10 Monetary Units between the two of you. You will first be in the role of the Receiver and then in the role of the Proposer. You will be matched with the same person for the two rounds of this decision-making task.

The Proposer will decide how the 10 Monetary Units will be divided between you two.

The Receiver will then choose to either accept or reject the proposal.

If the Receiver chooses to accept the proposal, you will both receive Monetary Units in accordance with the Proposer's decision.

If the Receiver chooses to reject the proposal, neither of you will receive any Monetary Units."

Page 2:

Examples:
1. If the Proposer sends 0 MU to the Receiver and the Receiver rejects the offer
The Proposer earns: 0 MU
The Receiver earns: 0 MU
2. If the Proposer sends 5 MU to the Receiver and the Receiver accepts the offer
The Proposer earns: 5 MU
The Receiver earns: 5 MU

Page 3:

Comprehension questions:
1. Suppose the Proposer decides to send 6 MU to the Receiver and the Receiver rejects the proposal. How many MU does each person then earn?

- Proposer 0 MU; Receiver 0 MU
- Proposer 10 MU; Receiver 0 MU
- Proposer 4 MU; Receiver 0 MU

2. Suppose the Proposer decides to send 6 MU to the Receiver and the Receiver accepts the proposal. How many MU does each person then earn?

- Proposer 0 MU; Receiver 6 MU
- Proposer 10 MU; Receiver 6 MU
- Proposer 4 MU; Receiver 6 MU

Page 4:

If the participant answered both questions correctly, they will receive the message:

"Well done, you have correctly answered both questions! Now you can proceed to the task."

If the participant answered one or both of the questions incorrectly, they will see this message, followed by a second attempt at answering the same question(s):

"Your answer to this question was incorrect. Please read the instructions carefully and try answering the question again.

The Proposer will decide how the 10 Monetary Units will be divided between you two. The Receiver will then choose to either accept or reject the proposal. If the Receiver chooses to accept the proposal, you will both receive Monetary Units in accordance with the Proposer's decision. If the Receiver chooses to reject the proposal, neither of you will receive any Monetary Units."

Then, if the participant answers incorrectly a second time, they will be given the following feedback and will be allowed to continue:

"You have given an incorrect answer to at least one of the comprehension questions. Please read the instructions one more time.

In this task, you will be matched with a new participant. One of you will divide 10 Monetary Units between the two of you. You will first be in the role of the Receiver and then in the role of the Proposer. You will be matched with the same person for the two rounds of this decision-making task.

The Proposer will decide how the 10 Monetary Units will be divided between you two. The Receiver will then choose to either accept or reject the proposal.

If the Receiver chooses to accept the proposal, you will both receive Monetary Units in accordance with the Proposer's decision. If the Receiver chooses to reject the proposal, neither of you will receive any Monetary Units.

Therefore, if the Proposer decides to send 6 MU to the Receiver and the Receiver rejects the proposal, both the Proposer and the Receiver will earn 0 MU.

If the Proposer decides to send 6 MU to the Receiver and the Receiver accepts the proposal, the Proposer will earn 4 MU (10-6=4) and the Receiver will earn 6 MU.

Now you can proceed to the task."

Ultimatum game decision: Receiver

Now you are in the role of the **Receiver**. It's time to make your decision!

Please review the options listed below. For each possible number of Monetary Units (0-10), consider whether to accept or reject the Proposer's proposal.

Please make your decisions on the following proposals:

The Proposer sent you 0 MU   I accept   I reject

The Proposer sent you 1 MU   I accept   I reject

The Proposer sent you 2 MU   I accept   I reject

The Proposer sent you 3 MU   I accept   I reject

The Proposer sent you 4 MU   I accept   I reject

The Proposer sent you 5 MU   I accept   I reject

The Proposer sent you 6 MU   I accept   I reject

The Proposer sent you 7 MU   I accept   I reject

The Proposer sent you 8 MU   I accept   I reject

The Proposer sent you 9 MU   I accept   I reject

The Proposer sent you 10 MU   I accept   I reject

Ultimatum game decision: Proposer

Now you are in the role of the **Proposer**. It's time to make your decision!

Remember that you are playing with the **same person as before**. **Only this time, they will not be able to reject your proposal. They will receive as many Monetary Units as you propose now.** Please decide how many Monetary Units you would want to propose to the other person for each possible number of Monetary Units they could have sent to you in the first round.

If they proposed 0 MU before, I would propose   0   1   2   3   4   5   6   7   8   9   10

If they proposed 1 MU before, I would propose   0   1   2   3   4   5   6   7   8   9   10

If they proposed 2 MU before, I would propose	0	1	2	3	4	5	6	7	8	9	10

If they proposed 3 MU before, I would propose	0	1	2	3	4	5	6	7	8	9	10

If they proposed 4 MU before, I would propose	0	1	2	3	4	5	6	7	8	9	10

If they proposed 5 MU before, I would propose	0	1	2	3	4	5	6	7	8	9	10

If they proposed 6 MU before, I would propose	0	1	2	3	4	5	6	7	8	9	10

If they proposed 7 MU before, I would propose	0	1	2	3	4	5	6	7	8	9	10

If they proposed 8 MU before, I would propose	0	1	2	3	4	5	6	7	8	9	10

If they proposed 9 MU before, I would propose	0	1	2	3	4	5	6	7	8	9	10

If they proposed 10 MU before, I would propose	0	1	2	3	4	5	6	7	8	9	10

Ultimatum game: Expectations

If the other person had the power to accept or reject your proposal in this last round, do you think the other person would accept or reject your proposal if you proposed:

List of proposals from 0 to 10 MU with response options "The other person would accept" and "The other person would reject".

Block 4. Positive and negative reciprocity

[Item order is randomized]

To what degree do the following statements apply to you personally?

Response scale: 1 – "Does not apply to me at all" to 7 – "Applies to me perfectly"

1. If someone does me a favor, I am prepared to return it.
2. I go out of my way to help somebody who has been kind to me before.
3. I am ready to undergo personal costs to help somebody who has helped me before.
4. If I suffer a serious wrong, I will take revenge as soon as possible, no matter what the costs.
5. If somebody puts me in a difficult position, I will do the same to them.
6. If somebody offends me, I will offend them back.

Block 5. Interpersonal conflict

Now we would like to ask you to recall a recent conflict in which you have been involved and answer some questions about how it was handled. By a conflict we mean a relatively intense disagreement

between two people that involves incompatible goals, needs, or viewpoints. Please think of a situation that meets this definition in which you were involved during the past two years. Of course your responses are anonymous, but it would help our analyses if you would provide some information as to who was the other party in the conflict that you have chosen to describe:

Please select the best description of the other person:

___your romantic partner,

___a close friend,

___a family member,

___someone from work or college

___other

The other party was: ___male   ___female   ___non-binary

Here are a series of statements referring to the conflict with which you may agree or disagree. Using the scale below, indicate your agreement with each item by selecting the appropriate number.

Response scale: 1 – "Strongly disagree" to 5 – "Strongly agree".

[Item order is randomized, except for the first question]

1. The conflict was satisfactorily resolved
2. Maintaining peace in our interaction was important to me
3. Maintaining humbleness to preserve the relationship was important to me
4. I was concerned with helping the other person to maintain their poise
5. I was concerned with helping the other person to maintain their credibility
6. I tried to be sensitive to the other person's self-worth
7. Helping to maintain the other person's pride was important to me
8. I was concerned with not bringing shame to myself
9. I was concerned with protecting my self-image
10. I was concerned with not appearing weak in front of the other person
11. I was concerned with protecting my personal pride

Block 6. Attitudes towards violence

[Item order is randomized]

To what extent do you agree with the following statements?

Response scale: 1 – "Strongly disagree" to 5 – "Strongly agree".

1. Capital punishment is often necessary.
2. Violent crimes should be punished violently.
3. The death penalty should be part of every penal code.

4. War is often necessary.
5. War can be just.
6. Every nation should have a war industry.
7. A parent hitting a child when they do something bad on purpose teaches the child a good lesson.
8. A child's habitual disobedience should be punished physically.
9. Giving mischievous children a quick slap is the best way to quickly end trouble.
10. Partners should work things out together even if it takes violence.
11. The male should not allow the female the same amount of freedom as he has.
12. It is all right to coerce one's partner into having sex when they are not willing by forcing them.

Additionally, this page will include one attention check question: "Hello, are you still paying attention? If you are reading this question, please choose the option "Strongly agree""

Block 7. Reactions to provocation

Below you can find a description of three insulting situations. Each situation has three different endings. Do you think you would behave this way in a real situation? Please assess each of the described behaviors in terms of how likely you would be to behave this way. Please use the scale from 1 (I would never behave this way) to 7 (I would do it for sure).

1. During an informal meeting with co-workers, your colleague unfavorably spoke of your spouse by questioning their intellect.

As a reaction to this insult, you would:

– do nothing and expect others to intervene
– return the insult or defend the person insulted
– humorously comment on that person's behavior

2. During a party in the presence of many of your friends your acquaintance insulted your mother by calling her a prostitute.

As a reaction to this insult, you would:

– do nothing and expect others to intervene
– return the insult or defend the person insulted
– humorously comment on that person's behavior

3. During a family trip to another country someone at the railway station heard you use your language and called you 'stupid foreigners'.

As a reaction to this insult, you would:

– do nothing and expect others to intervene
– return the insult or defend the person insulted
– humorously comment on that person's behavior

<u>Block 8. Values</u>

Choice of pronouns

[This question will be altered or skipped for languages where all three options cannot be used.]

The following questionnaire uses gendered language in statements that might apply to you. Please select which version of the questionnaire you would like to see:

- male (pronouns he/him)
- female (pronouns she/her)
- gender neutral (pronouns they/them)

Values

Here we briefly describe some people. Please read each description and choose an option on each line that shows how much each person is or is not like you.

Response scale: 1 to 6, with labels "Not like me at all", "Not like me", "A little like me", "Somewhat like me", "Like me", "Very much like me".

[Items below represent the gender neutral version of the scale.]

1. Thinking up new ideas and being creative is important to them. They like to do things in their own original way.
2. It is important to them to be rich. They want to have a lot of money and expensive things.
3. They think it is important that every person in the world should be treated equally. They believe everyone should have equal opportunities in life.
4. It's important to them to show their abilities. They want people to admire what they do.
5. It is important to them to live in secure surroundings. They avoid anything that might endanger their safety.
6. They like surprises and are always looking for new things to do. They think it is important to do lots of different things in life.
7. They believe that people should do what they're told. They think people should follow rules at all times, even when no-one is watching.
8. It is important to them to listen to people who are different from them. Even when they disagree with them, they still want to understand them.
9. It is important to them to be humble and modest. They try not to draw attention to themselves.
10. Having a good time is important to them. They like to "spoil" themselves.
11. It is important to them to make their own decisions about what they do. They like to be free and not depend on others.
12. It's very important to them to help the people around them. They want to care for their well-being.
13. Being very successful is important to them. They hope people will recognize their achievements.
14. It is important to them that the government ensures their safety against all threats. They want the state to be strong so it can defend its citizens.
15. They look for adventures and like to take risks. They want to have an exciting life.

16. It is important to them always to behave properly. They want to avoid doing anything people would say is wrong.
17. It is important to them to get respect from others. They want people to do what they say.
18. It is important to them to be loyal to their friends. They want to devote themselves to people close to them.
19. They strongly believe that people should care for nature. Looking after the environment is important to them.
20. Tradition is important to them. They try to follow the customs handed down by their religion or their family.
21. They seek every chance they can to have fun. It is important to them to do things that give them pleasure.

Block 9. Moral foundations

For each of the statements below, please indicate how well each statement describes you or your opinions.

Response options: Does not describe me at all (1); slightly describes me (2); moderately describes me (3); describes me fairly well (4); and describes me extremely well (5).

1. Caring for people who have suffered is an important virtue.
2. The world would be a better place if everyone made the same amount of money.
3. I think people who are more hardworking should end up with more money.
4. I think children should be taught to be loyal to their country.
5. I think it is important for societies to cherish their traditional values.
6. I think the human body should be treated like a temple, housing something sacred within.
7. I believe that compassion for those who are suffering is one of the most crucial virtues.
8. Our society would have fewer problems if people had the same income.
9. I think people should be rewarded in proportion to what they contribute.
10. It upsets me when people have no loyalty to their country.
11. I feel that most traditions serve a valuable function in keeping society orderly.
12. I believe chastity is an important virtue.
13. We should all care for people who are in emotional pain.
14. I believe that everyone should be given the same quantity of resources in life.
15. The effort a worker puts into a job ought to be reflected in the size of a raise they receive.
16. Everyone should love their own community.
17. I think obedience to parents is an important virtue.
18. It upsets me when people use foul language like it is nothing.
19. I am empathetic toward those people who have suffered in their lives.
20. I believe it would be ideal if everyone in society wound up with roughly the same amount of money.
21. It makes me happy when people are recognized on their merits.
22. Everyone should defend their country, if called upon.
23. We all need to learn from our elders.
24. If I found out that an acquaintance had an unusual but harmless sexual fetish I would feel uneasy about them.

25. Everyone should try to comfort people who are going through something hard.
26. When people work together toward a common goal, they should share the rewards equally, even if some worked harder on it.
27. In a fair society, those who work hard should live with higher standards of living.
28. Everyone should feel proud when a person in their community wins in an international competition.
29. I believe that one of the most important values to teach children is to have respect for authority.
30. People should try to use natural medicines rather than chemically identical human-made ones.
31. It pains me when I see someone ignoring the needs of another human being.
32. I get upset when some people have a lot more money than others in my country.
33. I feel good when I see cheaters get caught and punished.
34. I believe the strength of a sports team comes from the loyalty of its members to each other.
35. I think having a strong leader is good for society.
36. I admire people who keep their virginity until marriage.

Additionally, this page will include one attention check question: "Hello, are you still paying attention? If you are reading this question, please choose the option "Moderately describes me""

Block 10. Religiosity

Public religious practice

How often do you attend religious services or meetings?

1 – Never; 2 - Once a year or less; 3 - A few times a year; 4 - A few times a month; 5 - Once a week; 6 - More than once/week

Private religious practice

How often do you spend time in private religious activities, such as prayer, meditation or religious reading?

1 - Rarely or never; 2 - A few times a month; 3 - Once a week; 4 - Two or more times/week; 5 - Daily; 6 - More than once a day

Intrinsic religiosity

The following section contains 3 statements about religious belief or experience. Please mark the extent to which each statement is true or not true for you.

1. In my life, I experience the presence of the Divine (in other words, God).

1 - Definitely not true; 2 - Tends not to be true; 3 - Unsure; 4 - Tends to be true; 5 - Definitely true of me

2. My religious beliefs are what really lie behind my whole approach to life.

1 - Definitely not true; 2 - Tends not to be true; 3 - Unsure; 4 - Tends to be true; 5 - Definitely true of me

3. I try hard to carry my religion over into all other dealings in life.

1 - Definitely not true; 2 - Tends not to be true; 3 - Unsure; 4 - Tends to be true; 5 - Definitely true of me

Block 11. Subjective well-being

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

Response scale from 1 – "Strongly disagree" to 7 – "Strongly agree".

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

Block 12. Socio-demographic characteristics

This is the last part of the questionnaire. Please tell us a bit about yourself.

Age

How old are you? [A drop-down list of ages from <18, 18 to 99, plus "I prefer not to respond"]

Gender

What is your gender identity?

- Woman
- Man
- Non-binary
- Other (please describe)_____
- I prefer not to respond

Country of residence

Where do you currently live? [A drop-down list of countries, plus "I prefer not to respond"]

Migration background

Which of the following applies to you? By "this country" we mean the country where you currently live.

- I was born and raised in this country.

- I immigrated to this country from another country
- I was born and/or raised in this country, but at least one of my parents immigrated here from another country
- I prefer not to respond

[if family immigrated, show the question below]

You said that at least one of your parents immigrated from another country. Which country did they come from? If your parents immigrated from different countries, please indicate both countries.

Parent 1: [Dropdown list of countries]

Parent 2: [Dropdown list of countries]

Location growing up

What best describes where you grew up?

- Urban area
- Suburban area
- Rural area

Current location

What best describes where you currently live?

- Urban area
- Suburban area
- Rural area

Ethnicity

Which ethnic or cultural group do you identify with most? [the list will include the five largest ethnic groups in each geopolitical region[2], plus "Other (please describe)" with an open text box, "Multiple groups (please describe)" with an open text box, and "I prefer not to respond"]

Religion

Which religion, if any, do you identify with?

- None (atheist/agnostic)
- Christianity
- Islam
- Judaism

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[2] The response options will be determined for each regional subsample using data from the United Nations Statistics Division Demographic Statistics Database (most recent year available), the World Values Survey (Wave 7), or the Central Intelligence Agency World Factbook (most recent year available). If data is incomplete (i.e., less than 5 categories available) or unavailable from these sources, data from other reputable statistical agencies will be used to determine response options. The categories will be reviewed by local collaborators and adjusted if needed to best fit the cultural context of the geopolitical region.

- Hinduism
- Buddhism
- Other (please describe)_____
- I prefer not to respond

Education

What is the highest degree or level of school you have completed?

- [Elementary/Primary] School
- [High School/Secondary school up to 16 years]
- [Some college or Associate's Degree/Higher or secondary or further education (A-levels, BTEC, etc.)]
- University or college degree
- Postgraduate degree

[The exact wording of the categories will be adjusted within each geopolitical region with the goal of equivalence across samples.]

Student status

Are you currently enrolled as a full-time student at a College or University?

- Yes
- No

Subjective income

Which of the descriptions below comes closest to how you feel about your household's income nowadays?

- Living comfortably on present income
- Coping on present income
- Finding it difficult on present income
- Finding it very difficult on present income

[If certain socio-demographic questions are considered problematic in some countries, collaborators can argue for their exclusion from the questionnaire in that country. Participants can skip any of the socio-demographic questions, except the ones that will be used for screening: age, country of residence, and migration background.]

Debriefing form [see ethics documentation]

Analysis plan summary

Hypothesis	Analysis plan	Interpretation given different outcomes	Power analysis
H1a: A hierarchical model with three higher-order factors of dignity, honor, and face, each represented by two facets of self-concern and other-concern, will appropriately describe the data.	Individual endorsement and cultural norms will be tested separately. For each model, country will be used as a cluster variable. Factor structure (see Fig. 1A): Multilevel confirmatory factor analysis (MCFA), specifying a hierarchical model with three correlated higher-order latent factors representing dignity, honor, and face, each with two sub-factors representing the self-concern and other-concern facets. Test 1: Level 1 will include the proposed factor structure, and Level 2 will include only the saturated model where all observed variables are intercorrelated. Test 2: Level 1 will include only the saturated model of observed variable correlations, and Level 2 will include the proposed factor	If the model converges, it will be compared to the models below (see notes below). If the model does not converge after making adjustments as described under "Overall model plans", we will test the simpler alternative model with 6 correlated latent factors (see Fig. 1C). After model selection, we will use the guidelines in the model improvement and alignment section to improve model fit.	Calculated for a single country/level: $n = 43$ to detect an RMSEA of .08 and $n = 78$ to detect an AGFI (adjusted goodness of fit index) of .90 with a power of 0.90, alpha =.05, $df = 306$ (calculated based on a three-factor hierarchical model). Power calculated using *semPower* package in *R* (Moshagen & Bader, 2023).

	structure.		

H1b: The hierarchical model will fit the data better than the three-factor model.
 	
(We will alternatively test a six-factor model in case the hierarchical model does not converge.)
	Individual endorsement and cultural norms will be tested separately. For each model, country will be used as a cluster variable.
	
	Factor structure (see Fig. 1B): MCFA with three-factor correlated model of the DHF latent variables.
	
	Test 1: Level 1 will include the proposed factor structure, and Level 2 will include only the saturated model where all observed variables are intercorrelated.
	
	Test 2: Level 1 will include only the saturated model of observed variable correlations, and Level 2 will include the proposed factor structure.
		The model will be considered significantly better than an alternative if (Chen, 2007):
		  - AIC is lower
		  - BIC is lower
		  - ΔCFI > .010 (the model with higher CFI is better)
		  - ΔRMSEA > .015 (the model with lower RMSEA is better)
		
		All these criteria will be considered together, and if the majority of them are fulfilled, the model will be considered significantly better than the alternative. If models are not significantly different from each other, the theoretically hypothesized hierarchical model will be preferred.
			semPower suggests $n = 25$ to $n = 31$ to detect a change in RMSEA of .015 to achieve power of 0.90, alpha = .05, $\Delta df = 6$ for the three-factor model comparison to the hierarchical model, $\Delta df = 12$ for the three-factor comparison to a six-factor model.

Model improvement and evaluation (see hypotheses above)	The final model will be examined for: - Poorly loading items.	**Item evaluation**: - if a given item does not significantly load on the respective factor AND the model fit	NA

	- Modification indices. - Model fit.	improves after removing the item, or the item loads in the opposite to expected direction, the items will be removed. Otherwise, the item will be retained. - If modification indices suggest a strong residual correlation between items AND this correlation is theoretically justified, a residual correlation will be added. **Model Evaluation** - We will consider the model to have a good fit to the data if RMSEA $\leq$ .08 and SRMR_within $\leq$ .08. If ICC < .10, we will additionally use CFI > .90, and SRMR_between < .08 as criteria (see Ene, 2020). - If .08 < RMSEA < .10, .08 < SRMR < .10, and .80 < CFI < .90, we will consider the model acceptable, unless there are specific issues with items as described above. - If RMSEA > .10, SRMR > .10, CFI < .80, we will consider the model unacceptable. All model fit indices will be considered together, and if the majority of indices suggest acceptable fit, a single indicator will not be considered sufficient to reject the model.	
Measurement alignment	Alignment optimization procedure (Asparouhov & Muthén, 2023) will be used to estimate the degree of metrics and scalar invariance and to compare the group means.	We will first test the full configural model identified at the previous step. Considering the large number of groups and parameters, it is possible that the model will be computationally too intensive. If this is the case, we will consider running the alignment procedure for each factor separately.	The sample size estimate is based on a simulation study by Wen and Hu (2022) that suggests that with a high number of groups (>15), a group size of 250 would be sufficient for a model that

		Model fit in the alignment procedure is the same as for that of a configural model in MGCFA. Since our initial model selection uses multilevel CFA, the model fit indices might be different from the ones described above. We will use the same criteria as above to evaluate the configural model.	contains non-invariant parameters.
		We will use free alignment unless we get a warning message that the free alignment is compromised (this can happen when the number of groups and items is small), in which case we will switch to fixed alignment.	
		We will assess the alignment results based on the following criteria:	
		- If a parameter (loading or intercept) is invariant across 70% of all samples, we will consider this parameter to be acceptable for cross-cultural comparisons.	
		- If 50% of all items in a scale (see the results of a simulation study in Asparouhov & Muthén, 2023) show an acceptable level of invariance based on the criteria described above, we will consider the latent scores for this factor to be comparable across countries.	
		- If either of the above criteria are not satisfied, we will consider dropping items if specific items show a high degree of non-variance, or testing alternative factor structures if certain clusters of countries/samples show non-invariance on multiple parameters.	
H2: The individual endorsement of the other-concern facet of all	A multilevel model predicting prosociality from six or three	A significant positive effect ($p < .05$) of the other-concern facet of each cultural logic will	Power was simulated using pilot data to estimate fixed

three cultural logics will predict more prosocial behavior.	cultural logic indices (depending on the best fitting model in H1b) with random intercept for country. In all multilevel models (H2-H5), individual-level predictors will be group-mean centered and sample-level predictors will be grand-mean centered.	support the hypotheses. Significant effects for some but no effect for other other-facets will be interpreted as partial support for the hypothesis. Non-significant effects for any or negative effects for some will be interpreted as evidence against the hypothesis. If the 3-factor model is used (dignity, honor, face), the test will be exploratory.	effects for the self-facets, standard errors, and random effects. The data was simulated with ⬚ = .20 for each other-facet. Given 50 expected countries, 40 participants per country are needed to achieve 80% power.
H3a: Higher country-level honor logic scores will predict higher positive reciprocity.	A multilevel, random-intercept path model predicting universal prosociality and positive and negative reciprocity from individual-level and sample-level DHF norm scores. The models below and in further hypotheses use 3 factors at the individual and 3 factors at the sample level; this analysis is conditional upon the higher-order DHF factors showing appropriate fit for both endorsement and norms measures. Country will be used as the cluster variable for random intercepts. Level 1: prosocial, positive reciprocity, and negative reciprocity will be predicted by DHF scores for individual endorsement.	A significant positive effect ($p < .05$) of sample-level honor logic on positive reciprocity will support the hypothesis. Non-significant effect or an effect in the opposite direction will provide evidence against the hypothesis.	Parameters are based on z-score estimation, which do not involve degrees of freedom for significance purposes. If we assume our standard errors are approximate from the sample data (~ .10 across parameters as high estimate with smaller sample size models), we would be able to detect regression loadings of approximately .20 (i.e., 1.96 * SE).
H3b: Higher country-level face logic scores will predict higher positive reciprocity.		A significant positive effect ($p < .05$) of sample-level face logic on positive reciprocity will support the hypothesis. Non-significant effect or an effect in the opposite direction will provide evidence against the hypothesis.	
H3c: Higher country-level honor logic scores will predict higher negative reciprocity.		A significant positive effect ($p < .05$) of sample-level honor logic on negative reciprocity will support the hypothesis. Non-significant effect or an effect in the opposite direction will provide evidence against the hypothesis.	

	Level 2: prosocial, positive reciprocity, and negative reciprocity will be predicted by DHF scores for sample aggregated norms.		
H4a: Individual endorsement of honor culture will positively predict attitudes toward violence.	A multilevel, random-intercept model (country) predicting attitudes toward violence from individual-level endorsement and country-level norm scores for honor, face, and dignity.	A significant ($p < .05$) positive effect of individual-level honor will be interpreted as support for the hypothesis. Non-significant effect or an effect in the opposite direction will provide evidence against the hypothesis.	Power was simulated using pilot data to estimate fixed effects for the individual endorsement of DHF, standard errors, and random effects. The data was simulated with ⏷ = .20 for A: honor, B: face, C: Dignity (negative). Given 50 expected countries, 20-30 participants per country are needed to achieve 80% power.
H4b: Individual endorsement of face culture will positively predict other-face concern in interpersonal conflict.	A multilevel, random-intercept model (country) predicting other-face concern in interpersonal conflict from individual-level endorsement and country-level norm scores for honor, face, and dignity.	A significant ($p < .05$) positive effect of individual-level face will be interpreted as support for the hypothesis. Non-significant effect or an effect in the opposite direction will provide evidence against the hypothesis.	
H4c: Individual endorsement of dignity culture will negatively predict other-face concern in interpersonal conflict.		A significant ($p < .05$) negative effect of individual-level dignity will be interpreted as support for the hypothesis. Non-significant effect or an effect in the opposite direction will provide evidence against the hypothesis.	
H5a: Individual endorsement of honor culture will positively predict retaliation in response to provocation.	A multilevel, random-intercept path model predicting retaliation, withdrawal, and humor as reactions to provocation from individual-level endorsement and sample-level aggregate scores for honor, face, and dignity.	A significant ($p < .05$) positive effect of individual-level honor on retaliation will be interpreted as support for the hypothesis. Non-significant effect or an effect in the opposite direction will provide evidence against the hypothesis.	Parameters are based on z-score estimation, which do not involve degrees of freedom for significance purposes. If we assume our standard errors are approximate from the sample data (~ .10 across parameters
H5b: Individual endorsement of face culture will positively		A significant ($p < .05$) positive effect of individual-level face on withdrawal will be	

predict withdrawal in response to provocation.	Country will be used as the cluster variable for random intercepts. Level 1: Retaliation, withdrawal, and humor will be predicted by DHF scores for individual endorsement. Level 2: Retaliation, withdrawal, and humor will be predicted by DHF scores for sample aggregated norms.	interpreted as support for the hypothesis. Non-significant effect or an effect in the opposite direction will provide evidence against the hypothesis.	as high estimate with smaller sample size models), we would be able to detect regression loadings of approximately .20 (i.e., 1.96 * SE).
H5c: Individual endorsement of dignity culture will positively predict humor in response to provocation.		A significant ($p < .05$) positive effect of individual-level dignity on humor will be interpreted as support for the hypothesis. Non-significant effect or an effect in the opposite direction will provide evidence against the hypothesis.	

Analysis Pipeline

Please see the GitHub repository at: https://github.com/psysciacc/JTF002-DHF for the full code of the analysis pipeline.