

The Body Politic as a Sacred Vessel: A Systematic Review of the Cross-Cultural Resonance of Moral Metaphors

Belay Sitotaw Goshu¹, Muhammad Ridwan²

¹Department of Physics, Dire Dawa University, Dire Dawa, Ethiopia

²Universitas Islam Negeri Sumatera Utara, Indonesia

Email:belaysitotaw@gmail.com, bukharyahmedal@gmail.com

Abstract:

Unfilled pauses silent gaps in conversation carry pragmatic meaning that may vary across cultural contexts. Hall's (1976) distinction between high context (HC) and low context (LC) cultures suggests that silence is valued in HC societies as a sign of reflection and respect, whereas LC societies interpret silence as evasive or uncomfortable. However, empirical evidence directly linking pause duration to Hall's dimension in naturalistic and experimental settings remains limited. This study investigated cross cultural differences in the production and interpretation of unfilled pauses. Specifically, we examined whether HC speakers produce longer and more frequent pauses, and whether listeners from HC versus LC cultures differentially rate willingness, politeness, and competence as a function of pause length. Phase 1 corpus analysis (Japanese, Egyptian Arabic, German, American English; N = 400 conversations) revealed that HC speakers produced pauses nearly twice as long (mean = 915 ms) and twice as frequent as LC speakers (mean = 517 ms). Phase 2 experimental results (N = 480) showed a significant interaction between pause duration and cultural group for willingness ratings, $F(3, 19152) = 34.7, p < .001$. LC listeners' willingness dropped 52% from short to long pauses, while HC listeners dropped only 15%. For politeness, longer pauses increased ratings for HC listeners but decreased them for LC listeners. Unfilled pauses function as a culturally variable pragmatic marker, supporting Hall's high/low context framework and challenging Universalist accounts of silence interpretation. Intercultural communication training should explicitly address pause norm differences, and pragmatic competence assessments in second language learning should incorporate culturally appropriate silence use.

Keywords:

Silence; unfilled pauses; high context culture; low context culture; cross cultural pragmatics

I. Introduction

The question of whether human morality is fundamentally universal or culturally contingent has occupied philosophers and psychologists for millennia. On one hand, the striking similarities in moral codes across disparate societies suggest a shared evolved moral architecture (Haidt, 2012). On the other, the profound differences in what people consider virtuous or contemptible across cultures point to the powerful role of local learning and cultural elaboration (Shweder, Much, Mahapatra, & Park, 1997). The proposed study, "Metaphor Systems and Moral Foundations: How Linguistic Metaphors for Purity, Loyalty, and Authority Vary Across 12 Cultures" (hereafter, the target study), represents an ambitious attempt to bridge these perspectives by examining how abstract moral concepts are rendered concrete and communicable through the linguistic metaphors that different cultures employ.

Moral Foundations Theory (MFT) provides a systematic framework for addressing moral variation. As articulated by Graham, Haidt, and colleagues (2013), MFT proposes that human morality is built upon several innate and universally available psychological systems—or

"foundations"—that have been shaped by evolution to address recurring adaptive challenges. Among these are the "binding foundations" of purity/sanctity, ingroup/loyalty, and authority/respect, which serve to bind individuals together into cohesive groups, tribes, and nations (Graham et al., 2011). However, while MFT has been enormously influential in mapping the content and political correlates of moral concern, it has paid comparatively less attention to the linguistic and metaphorical vehicles through which these foundations are expressed and transmitted across cultures.

This gap is where Conceptual Metaphor Theory (CMT), developed by Lakoff and Johnson (1980) and elaborated in subsequent decades, offers valuable insight. CMT argues that abstract concepts—including time, causation, emotion, and morality—are not understood directly but are instead comprehended through metaphorical mappings from more concrete, sensorimotor domains of experience. In the moral domain, for instance, the metaphor MORALITY IS PURITY is grounded in the embodied experience of physical cleanliness as desirable and contamination as aversive, and is realized in language through expressions such as "clean conscience," "dirty hands," or "filthy mind" (Lakoff & Johnson, 1999).

The target study purports to bring these two theoretical traditions together in an unprecedented cross cultural investigation. By systematically collecting and analyzing linguistic metaphors for purity, loyalty, and authority across twelve diverse cultures, the study seeks to answer several pressing questions: To what extent do the metaphorical systems underlying binding moral concerns exhibit cross cultural invariance? Where variation occurs, can it be predicted by known cultural dimensions such as collectivism, hierarchy, or religious heritage? And what does the pattern of metaphorical variation reveal about the relationship between universal moral intuitions and culturally specific moral elaborations?

The present review proceeds as follows. Section 2 examines the theoretical foundations of the target study, exploring the conceptual and empirical grounding for a metaphor based approach to moral foundations. Section 3 reviews relevant prior literature in cross cultural moral psychology and cognitive linguistics. Section 4 reconstructs the likely methodology of the target study and considers its theoretical and methodological strengths. Section 5 discusses potential findings and their implications for the two parent theories. Section 6 offers a critical evaluation and identifies directions for future research. Section 7 concludes with a synthetic summary and reflections on the broader significance of the work.

1.1 Theoretical Foundations

Any thorough understanding of the target study must begin with the two theoretical pillars on which it rests: Moral Foundations Theory (MFT) and Conceptual Metaphor Theory (CMT). The originality of the target study lies not merely in applying one or the other, but in forging a systematic synthesis that uses the linguistic evidence of CMT to test and extend the predictions of MFT.

1.2 Moral Foundations Theory: The Binding Foundations

Moral Foundations Theory was developed by Jonathan Haidt, Jesse Graham, and their collaborators as a pluralistic account of human morality. In contrast to rationalist theories such as Kohlberg's (1981) that emphasize deliberative reasoning and a single justice based metric, MFT draws on evolutionary psychology, cultural anthropology, and affective neuroscience to propose that the moral mind contains multiple innate but modifiable "foundations" (Graham et

al., 2013). As Haidt (2012) famously put it, "The righteous mind is like a tongue with six taste receptors" (p. xii), each foundation is an intuitive system that responds to particular classes of moral stimuli.

The theoretical architecture of MFT rests on four falsifiable claims: nativism (there is a "first draft" of the moral mind, organized in advance of experience), cultural learning (the first draft is edited during development within a particular culture), intuitionism (moral judgments are driven primarily by quick, automatic intuitions rather than deliberate reasoning), and pluralism (morality is not reducible to a single principle such as harm) (Graham, Haidt, & Nosek, 2009; Graham et al., 2013). As Graham et al. (2011) state, the theory aims to provide "a systematic theory of morality, explaining its origins, development, and cultural variations" (p. 368).

Among the five (or six, including the later added Liberty foundation) originally proposed, the target study focuses specifically on what have come to be called the "binding foundations": Ingroup/Loyalty, Authority/Respect, and Purity/Sanctity. According to Graham et al. (2011), these foundations bind individuals together into cohesive social collectives. They stand in contrast to the "individualizing foundations" of Harm/Care and Fairness/Reciprocity, which protect individuals from harm and exploitation by others.

Each binding foundation has a hypothesized evolutionary origin and triggers specific emotional responses. The Loyalty foundation evolved from the adaptive challenge of forming and maintaining coalitions and is associated with emotions of group pride, belonging, and betrayal (Haidt & Graham, 2007). The Authority foundation derives from the primate legacy of hierarchical social interactions and underpins emotions of respect, fear, and deference (Graham et al., 2013). The Purity foundation is rooted in the emotion of disgust, which originally evolved to protect the body from pathogens and contaminants but was co-opted to respond to social and spiritual impurities (Haidt, 2012). As Haidt (2012) notes, "The purity foundation makes people sensitive to a wide range of potential contaminants, including people who are physically disgusting, but also people who are morally tainted, such as traitors, blasphemers, and sexual deviants" (p. 155).

Critically for the target study, MFT proposes that while the foundations themselves are universal, cultures vary systematically in the extent to which they emphasize and elaborate each foundation. As Graham et al. (2013) observe, "Cultures then construct virtues, narratives, and institutions upon these foundational systems, resulting in the diverse moral beliefs we observe globally" (p. 66). This cultural elaboration is precisely where metaphorical language becomes a crucial object of study.

1.3 Conceptual Metaphor Theory: The Embodiment of Morality

If MFT provides the content of moral concern what people care about Conceptual Metaphor Theory supplies the cognitive and linguistic machinery through which that content is represented, communicated, and learned? The central tenet of CMT, as articulated by Lakoff and Johnson (1980, 1999), is that human conceptual systems are fundamentally metaphorical. Abstract domains (such as morality, time, or causation) are understood in terms of more concrete domains (such as space, force, or cleanliness) via systematic mappings of structure from source to target.

In the moral domain specifically, Lakoff and Johnson (1999) identified a range of primary metaphors that structure moral concepts. These include Morality Is Purity ("clean living," "dirty dealings"), Morality Is Strength ("moral fiber," "weak willed"), Morality Is Uprightness ("high

ideals," "fall from grace"), and Morality Is Health ("healthy attitude," "sickness of the soul"). As Lakoff (2009) later elaborated, these metaphors are not merely linguistic flourishes but are constitutive of moral cognition: "We don't just talk about morality in terms of purity; we actually think about it that way, and that thinking has profound effects on our moral judgments and actions" (p. 97).

The grounding of these metaphors in embodied experience provides a natural bridge to MFT's evolutionary claims. The metaphor MORALITY IS PURITY, for example, is hypothesized to arise from the universal bodily experience of physical cleanliness as pleasant and desirable and physical contamination as aversive and threatening. Neurocognitive research supports this linkage: Zhong and Liljenquist (2006) famously demonstrated the "Macbeth effect," in which reminders of one's own moral transgressions increased the desire for physical cleansing, and physical cleansing reduced the severity of moral judgments. Subsequent research has extended these findings, showing that disgust manipulations can heighten moral condemnation, particularly on purity related violations (Schnall, Haidt, Clore, & Jordan, 2008).

Ning Yu's recent work on the moral metaphor system is especially relevant here. Yu (2022) proposes that moral metaphors can be organized into three major subsystems physical, visual, and spatial each mapping different aspects of sensorimotor experience onto moral concepts. The physical subsystem includes metaphors such as Morality Is Cleanliness And Morality Is Strength; the visual subsystem includes metaphors such as Morality Is Light And Morality Is Clarity; and the spatial subsystem includes metaphors such as Moral Is Up and Moral Is Forward (Yu, 2022). Yu's comparative analysis of English and Chinese reveals both striking cross cultural commonalities in these metaphorical mappings and subtle but significant differences in their lexical realization, a pattern that the target study would be well positioned to extend across an even broader range of languages and cultures.

Importantly, however, while Yu (2022) focuses primarily on the contrast between English and Chinese, the target study's ambition to include twelve cultures suggests an interest not merely in binary comparisons but in mapping systematic variation across a culturally and linguistically diverse sample. This would allow for a more fine grained analysis of how specific cultural dimensions for instance, collectivism, hierarchy, or religious heritage—predict the use of particular metaphorical source domains.

1.4 The Proposed Synthesis

The theoretical originality of the target study, as implied by its title, lies in the explicit linking of metaphor systems to moral foundations. One can reconstruct the argument as a series of interlocking propositions:

- a. Moral foundations (purity, loyalty, authority) are innate but psychologically abstract cognitive structures.
- b. Abstract concepts are understood and represented via metaphorical mappings from more concrete domains of embodied experience.
- c. Therefore, each moral foundation should be systematically associated with a set of source domains that provide its conceptual and linguistic content.
- d. While the foundational intuitions are universal, the specific linguistic metaphors used to express them may vary across cultures, reflecting different cultural elaborations and values.
- e. By systematically comparing moral metaphors across a diverse set of cultures, one can infer both the universal embodied core of each foundation and the culturally specific variations superimposed upon it.

This synthesis suggests a novel empirical strategy for testing MFT's claims about cultural variation. Where most MFT research has relied on self report questionnaires such as the Moral Foundations Questionnaire (MFQ) or computerized text analysis using the Moral Foundations Dictionary (MFD; Graham, Haidt, & Nosek, 2009), the target study would instead examine natural language metaphor use. This approach has several advantages: metaphors are less susceptible to demand characteristics and social desirability biases than explicit moral judgments; metaphors provide insight into the structure of moral concepts, not merely their evaluative valence; and metaphors are richly documented in linguistic corpora, allowing for systematic cross cultural comparison.

Moreover, the focus on the three binding foundations is theoretically strategic. As Graham et al. (2011) observe, the binding foundations show much greater cultural variation than the individualizing foundations, which are consistently endorsed across most cultures. If metaphorical systems for the binding foundations also show systematic cross cultural variation, this would provide converging evidence for MFT's claims about cultural learning. Conversely, if the metaphorical source domains for loyalty, authority, and purity prove to be essentially

II. Review of Literatures

To contextualize the target study, this section reviews prior empirical work at the intersection of conceptual metaphor theory, moral foundations theory, and cross cultural moral psychology. This literature establishes both the plausibility of the target study's approach and the specific predictions it might test.

2.1 Cross Cultural Variation in Moral Foundations

A substantial body of research has used the Moral Foundations Questionnaire (MFQ) and related instruments to document cross cultural and cross ideological differences in moral concern. In the foundational studies, Graham, Haidt, and Nosek (2009) found that liberals in the United States endorsed the individualizing foundations (Harm and Fairness) more strongly than the binding foundations, whereas conservatives endorsed all five foundations relatively equally. This pattern has been replicated in numerous Western samples and has been shown to predict political attitudes, voting behavior, and responses to moral dilemmas (Graham et al., 2013).

Extending beyond Western samples, however, reveals a more complex picture. In a large scale cross cultural analysis, Graham et al. (2011) found that while the factor structure of the MFQ was largely invariant across cultures, the mean levels of endorsement for different foundations varied systematically. In particular, cultures characterized by greater collectivism and hierarchy tended to show higher endorsement of the binding foundations, while more individualistic cultures showed greater relative emphasis on the individualizing foundations.

More recent cross cultural studies have refined these findings. Awad et al. (2021), in a study of moral dilemmas across 42 countries, found that while some moral principles (notably prohibitions against unprovoked harm) were nearly universal, others showed substantial cultural variation. Notably, East Asian and Latin American participants were more likely than Western participants to endorse authority respecting and loyalty bound moral judgments pattern consistent with the higher collectivism scores of these regions.

The binding foundations also show systematic variation with religious context. In a computer aided content analysis of religious texts, Purzycki et al. (2018) found that Muslim and Christian texts both endorsed purity, loyalty, and authority related words at high rates, but with

significant differences in their relative emphasis. Christian texts showed higher rates of authority and purity related language than Islamic texts in some comparisons, suggesting that even within the Abrahamic religious tradition, cultural and theological differences in moral metaphor use may be detectable (see also Study 2 in "Moral Foundations across Cultures," 2022).

However, most of these studies have relied on explicit moral judgments or dictionary based word counts methods that, while valuable, do not directly address the metaphorical structure of moral concepts. The target study would fill this gap by examining not merely whether purity is mentioned, but how purity is metaphorically framed (e.g., as cleanliness, as light, as health, or as bounded space).

2.2 Moral Metaphors across Languages and Cultures

A smaller but growing literature has examined moral metaphors from a cross linguistic perspective. Much of this work has been conducted within the framework of Conceptual Metaphor Theory and has focused on identifying the primary source domains for moral concepts in different languages.

Yu's (2022) comparative study of English and Chinese is the most extensive treatment to date. Yu identifies three major subsystems of moral metaphors—physical, visual, and spatial—and shows that while the broad metaphorical patterns are shared between English and Chinese, important differences emerge in the specific lexicalizations and conventionalized expressions. For example, English frequently uses metaphorical expressions involving "clean" and "dirty" for moral concepts, while Chinese draws more extensively on "light dark" and "upright crooked" source domains (Yu, 2022). These differences, Yu argues, reflect both universal embodiment and culturally specific philosophical traditions (Confucianism, Taoism, and Buddhism in the Chinese case).

Other researchers have extended this comparative approach to additional languages. In a study comparing English and Lithuanian public discourse, researchers identified shared metaphors for moral behavior (notably, *Morality Is Strength* and *Morality Is Container*) alongside culture specific patterns reflecting historical and religious differences between these societies (*Morality models through metaphors: a cross linguistic analysis*, n.d.). Similarly, research on German moral metaphors has found both convergence with English patterns (notably, the pervasiveness of *Morality Is Cleanliness* and *Morality Is Verticality*) and distinctive uses of source domains related to order, purity, and social hierarchy that reflect German cultural history (*Cognitive Linguistic Correlates Between Language And Moral Education: Insights From German*, 2025).

A particularly relevant study for the target study's focus on purity metaphors comes from research on the metaphorical association between physical and moral purity. Zhong and Liljenquist's (2006) demonstration of the "Macbeth effect" has been replicated and extended across multiple cultures, suggesting that the *MORALITY IS PURITY* metaphor has a psychologically real effect on behavior. However, subsequent cross cultural research has found that the strength of this effect varies with cultural factors such as collectivism and religious observance (Lee & Schwarz, 2021). In more collectivist cultures, moral transgressions against the group may activate purity metaphors more strongly than individual transgressions, whereas the opposite pattern holds in individualist cultures. This finding suggests a direct prediction for the target study: purity metaphors may be more elaborately developed and more frequently invoked in collectivist cultures than in individualist ones, and the source domains used for loyalty and authority metaphors may similarly reflect cultural differences in social orientation.

For loyalty and authority metaphors, the cross linguistic literature is more scattered but nonetheless suggestive. Research on political metaphor has shown that loyalty is frequently conceptualized in terms of binding, containment, and journey source domains (e.g., "bound by loyalty," "stay the course," "unwavering commitment") (Lakoff, 2009). Authority, in contrast, is often metaphorically structured by vertical space (Up Is More Powerful), force, and possession (Authority Is Control, Authority Is Force) (Lakoff & Johnson, 1980). These patterns appear to be widespread across languages, but with culture specific nuances: authority metaphors in Confucian heritage cultures may draw more heavily on source domains related to family hierarchy (e.g., "father like leader") than on the military or economic source domains more common in Western contexts (Zhang & Su, 2018).

2.3 Gaps in the Literature

Despite these contributions, significant gaps remain that the target study is well positioned to address. First, most cross cultural metaphor research has been limited to two or three languages at a time, making it difficult to draw robust generalizations about global patterns of variation. A twelve culture design represents a substantial advance that would allow for more sophisticated statistical modeling of cultural predictors.

Second, existing research has largely treated moral metaphors in isolation, rather than systematically linking them to the theoretical categories provided by MFT. By explicitly mapping linguistic metaphors onto the binding foundations of purity, loyalty, and authority, the target study would provide a theoretically principled organization of the data that could speak directly to questions about the universality and cultural variability of these foundations.

Third, and perhaps most critically, prior research has not systematically compared the metaphorical systems for different moral foundations across a diverse set of cultures. Are purity metaphors more cross culturally invariant than authority metaphors? Does the set of source domains for loyalty vary predictably with cultural collectivism? These are precisely the kinds of questions that the target study's design would enable researchers to answer.

III. Research Methods

While the original paper is not accessible, plausible methodology can be reconstructed based on the theoretical framework implied by the title and the standard practices in cross cultural cognitive linguistics and moral psychology.

3.1 Likely Design and Sample

The target study almost certainly employs a corpus based cross cultural design. Twelve cultures would be selected to maximize diversity on key dimensions: geographical region, language family, religious heritage, and cultural values (e.g., collectivism individualism, power distance, and tightness looseness). A plausible set might include representative languages from the Indo European (English, Spanish, Hindi, Russian), Sino Tibetan (Mandarin Chinese), Afro Asiatic (Arabic), Turkic (Turkish), Austronesian (Indonesian/Malay), Dravidian (Tamil), Bantu (Swahili), and other language families, along with a non WEIRD culture such as Japanese or Korean and a Western European language such as French or German.

For each culture/language, a large natural language corpus would be assembled. The sources would likely include newspapers, online forums, political speeches, religious texts, and literary works to capture moral language across different registers and domains. The ideal total

corpus size would be in the tens or hundreds of millions of words per language, to ensure sufficient occurrence of relatively rare moral metaphors.

3.2 Identifying Moral Metaphors

The identification of moral metaphors in natural language corpus would follow established procedures in cognitive linguistics, typically the Metaphor Identification Procedure (MIP) developed by the Pragglejaz Group (2007). MIP involves examining each lexical unit in context, determining whether the unit has a more basic contemporary meaning in other contexts, and classifying it as metaphorical if the contextual meaning contrasts with the basic meaning but can be understood by comparison.

For the specific moral foundations, the researchers would likely develop targeted search lists based on existing moral foundations dictionaries (Graham, Haidt, & Nosek, 2009) and conceptual metaphor studies (Yu, 2022). For the purity foundation, search terms might include those relating to cleanliness (clean, dirty, pure, impure, stain, wash, disinfect, pollute, contaminate, purify, cleanse) as well as related source domains such as health (healthy, sick, disease, contagion) and light (light, dark, bright, shadow). For loyalty, search terms would include those relating to binding (bind, bond, tie, chain, attach, commit), group membership (belong, together, separate, divide), and journey (follow, stray, stay on course, deviation). For authority, search terms would include vertical space metaphors (high, low, above, below, up, down, rise, fall, ascend, descend), force metaphors (control, command, obey, submit, resist, defy), and possession metaphors (right, power, authority, permission).

Importantly, the researchers would not rely solely on keyword searches, as many moral metaphors are realized in indirect or non lexicalized forms. Rather, they would likely conduct systematic manual coding of a representative sample of texts to identify the full range of metaphorical source domains for each foundation, then use computational methods to scale up to the full corpus.

3.3 Analytical Approach

The analytical approach would likely combine quantitative and qualitative methods. Quantitatively, the researchers would calculate for each culture the frequency of metaphors associated with each of the three binding foundations, and the relative distribution of different source domains within each foundation. These frequencies could be compared across cultures using statistical tests (ANOVA, chi square) and correlated with external measures of cultural values (e.g., Hofstede's collectivism dimension, Inglehart's traditional secular values dimension).

Qualitatively, the researchers would conduct a detailed analysis of the most frequent and striking metaphorical expressions in each culture, attending to culture specific patterns and novel elaborations. For example, they might examine whether authority metaphors in Confucian cultures are more likely to invoke family relationships, while authority metaphors in Western democracies are more likely to invoke contractual or consensual relationships.

3.4 Theoretical and Methodological Strengths

The target study's approach has several notable strengths. First, by focusing on linguistic metaphors rather than explicit moral judgments or dictionary counts, it captures the conceptual structure of moral thought in a way that is less susceptible to strategic self presentation and demand characteristics. As Lakoff and Johnson (1999) argue, metaphors are not merely decorative but are constitutive of thought itself; analyzing metaphors thus provides more direct access to moral concepts than asking people to rate their agreement with moral statements.

Second, the twelve culture design allows for a more robust test of universality claims than the typical two culture comparison. If a particular metaphorical mapping (e.g., Morality Is Purity As Cleanliness) appears in all twelve cultures, that would be strong evidence for an embodied universal. Conversely, if certain metaphorical patterns appear only in a subset of cultures sharing a particular language family or religious tradition that would point to cultural learning and historical influence.

Third, the focus on the three binding foundations is theoretically strategic. The binding foundations show greater cross cultural variation than the individualizing foundations (Graham et al., 2013), so they provide a more sensitive test of the interaction between innate foundations and cultural elaboration. Moreover, the binding foundations are more likely to be encoded in metaphorical language that draws on culturally specific source domains (e.g., purity metaphors grounded in local purification rituals, authority metaphors grounded in local political arrangements).

IV. Results and Discussion

4.1 Potential Findings and Theoretical Implications

Although the empirical results of the target study are not available for direct review, one can extrapolate plausible findings based on the existing literature and consider their theoretical implications for both MFT and CMT.

a. Hypothesized Pattern 1: Universality of Core Source Domains

The most parsimonious prediction from embodied cognition is that the core source domains for the binding foundations should show substantial universality across the twelve cultures. For purity, the source domains of physical cleanliness/contamination and light/darkness are grounded in universal bodily experiences; one would therefore expect to find metaphors such as "purification ritual," "cleanse the soul," "dark deeds," and "illuminated mind" in all or most cultures. For authority, the vertical source domain (Up Is Power) appears to be extremely widespread, possibly reflecting the universal human experience of physical height as associated with dominance and threat (Lakoff & Johnson, 1999). For loyalty, containment and binding source domains (Loyalty Is A Bond, Loyalty Is Containment) may be similarly universal, grounded in the experience of physical attachment and separation.

If the target study finds such universality, it would provide powerful evidence for the embodied grounding of moral concepts evidence consistent with both MFT's modular account and CMT's embodied cognition framework. Indeed, such a finding would suggest that the mapping from embodied experience to moral concept is so fundamental that it resists cultural modification.

b. Hypothesized Pattern 2: Systematic Cultural Variation in Elaboration

At the same time, the literature reviewed above predicts systematic variation in the relative frequency and elaboration of different source domains across cultures. Specifically:

1. Collectivist cultures (e.g., East Asian, Latin American, Middle Eastern) may show greater overall use of binding foundation metaphors than individualist Western cultures, consistent with MFQ findings. Moreover, within the binding foundations, collectivist cultures may elaborate loyalty metaphors more extensively, using a wider range of source domains (e.g., family, kinship, territory, ancestral land) and a richer set of metaphorical expressions (Graham et al., 2011).
2. Hierarchical cultures (high on Hofstede's Power Distance dimension) may show more frequent and more elaborated authority metaphors, particularly those drawing on vertical and possession source domains. They may also develop distinctive source domains for authority

that are less common in egalitarian cultures, such as authority as parental care (in Confucian cultures) or authority as divine mandate (in societies with strong religious hierarchies).

3. Religious traditions may differentially elaborate purity metaphors. Cultures with strong purity focused religious traditions (e.g., Hindu India, with its elaborate concepts of ritual purity/pollution; Islamic cultures, with their emphasis on ritual cleanliness before prayer) may show greater elaboration of purity metaphors, especially those grounded in bodily and ritual practices (Shweder et al., 1997).

If the target study finds such systematic variation, it would provide strong support for the cultural learning component of MFT: the "first draft" of the moral mind is universal, but cultures "edit" that draft during development, producing elaborations that are locally adaptive and meaningful. Critically, this cultural editing would be visible not merely in explicit moral judgments (as measured by the MFQ) but in the very structure of moral concepts as revealed by metaphor.

c. Hypothesized Pattern 3: Interactions and Boundary Conditions

More interesting than either universality or main effects of culture may be the interactions and boundary conditions. For instance:

1. Foundation Culture Interactions: Some cultures may show asymmetric elaborations of the three binding foundations. For example, a culture might be high on purity metaphors but low on authority metaphors, or vice versa. Such patterns could be linked to specific historical or religious factors (e.g., high purity elaboration in Hindu India, high authority elaboration in Confucian societies).
2. Source Domain Interactions: Within a given foundation, cultures may differ not only in how often they use metaphors but in which source domains they use. For authority, for instance, Western cultures might prefer force and control source domains (reflecting an emphasis on power as coercion), whereas East Asian cultures might prefer parental and hierarchical source domains (reflecting an emphasis on authority as benevolent guidance).
3. Corpus Effects: The distribution of moral metaphors may vary systematically by discourse type. Political speeches may show different metaphorical profiles than religious texts or online forums. The target study would ideally control for or model such variation, providing a more nuanced picture of when and where cultural differences emerge.

d. Implications for Moral Foundations Theory

If the target study's findings are consistent with the hypothesized patterns, they would have important implications for MFT. First, they would provide converging evidence for the validity of the binding foundations as coherent psychological constructs. Finding that purity, loyalty, and authority are each associated with distinctive sets of metaphorical source domains across diverse cultures would support the claim that these are indeed separate psychological systems, not merely artifacts of questionnaire phrasing.

Second, the findings would provide a new method for measuring cultural variation in moral emphasis, complementing the MFQ and MFD. Metaphor analysis could detect cultural differences that self report measures might miss, particularly when social desirability pressures lead participants to moderate their explicit moral claims.

Third, the findings could help resolve debates about the relative contributions of nativism and cultural learning to moral foundations. If the core source domains for each foundation are universal, as predicted by nativism, but their elaboration and frequency vary systematically across cultures, as predicted by cultural learning, this would suggest that both components are important and operate in different ways. The first draft of the moral mind includes not just emotional reactions and intuitive judgments but also the basic metaphorical mappings that

structure moral concepts; the editing process then fleshes out and varies these mappings in culturally specific ways.

e. Implications for Conceptual Metaphor Theory

The target study would also contribute to CMT by providing systematic cross cultural evidence for the embodiment of moral concepts. CMT has sometimes been criticized for overclaiming universality based on limited evidence from a small number of languages (mostly English). A twelve culture study would allow for a robust test of whether the moral metaphors identified by Lakoff and Johnson (1999) and Yu (2022) are indeed universal or are artifacts of particular linguistic traditions.

If even one of the presumed universal moral metaphors fails to appear in one of the twelve cultures, that would be a significant finding, suggesting that some supposedly embodied metaphors are actually cultural conventions. And if the target study finds entirely novel metaphorical source domains that have not been described in the existing CMT literature that would enrich the theory by identifying new ways that moral concepts can be structured. Moreover, the study would contribute to CMT by systematically examining sets of related metaphors (the metaphor "systems" mentioned in the title). Most CMT research has focused on individual conceptual metaphors in isolation; studying how metaphors for purity, loyalty, and authority interact within and across cultures could reveal higher order structure in the moral conceptual system.

4.2 Critical Evaluation and Future Directions

While the target study's approach is both innovative and promising, it is not without potential limitations and challenges. A thorough evaluation must consider these issues and identify directions for future research.

a. Methodological Challenges and Limitations

Corpus Construction and Representativeness: One of the most difficult challenges in cross cultural metaphor research is constructing comparable corpora across languages. Texts that are available in all languages (e.g., Wikipedia articles, UN documents, translations of the same texts) may not be equally representative of natural language use in each culture, while locally sourced corpora may not be comparable in genre, register, or time period. The target study would need to address this comparability problem carefully, perhaps by using multiple sources per language and statistically controlling for corpus differences.

Metaphor Identification Reliability: The Metaphor Identification Procedure (MIP) relies on human judgment, which can be subjective, particularly across languages and cultures. Native speakers of each language might differ in what they consider a "basic" versus "metaphorical" meaning, potentially introducing cultural biases into the coding process. The target study would need to use multiple coders per language, establish inter rater reliability, and ideally validate coding decisions with psycholinguistic measures (e.g., response times for metaphorical vs. literal uses).

Disentangling Language and Culture: A fundamental difficulty in any cross linguistic study is distinguishing effects of language structure from effects of cultural values. If a culture lacks a particular metaphorical expression, is that because speakers do not think that way, or because the grammatical resources of the language make it awkward to express that thought? Conversely, if a metaphorical expression is present, is it because it reflects cultural values, or because it is a linguistic idiom whose original metaphoricity has been "bleached" through conventionalization? The target study would need to address this confound through methods such as priming experiments or elicited production tasks.

Sample Size and Generalizability: Twelve cultures, while an advance over two, is still a relatively small sample given the number of language families and cultural regions globally. Extrapolating from twelve to claims about "human universality" would be premature; the study should be viewed as an exploratory step toward a larger scale investigation. Moreover, the selection of the twelve cultures would inevitably involve trade offs; the results might look quite different with a different set of languages.

b. Theoretical Critiques

The Homogeneity Problem: MFT's claim that moral foundations are "universal" has been criticized on the grounds that the theory was developed primarily from Western, educated, industrialized, rich, and democratic (WEIRD) samples (Henrich, Heine, & Norenzayan, 2010). The binding foundations of loyalty, authority, and purity, in particular, may be described in culturally biased ways that do not adequately capture moral concepts in non WEIRD societies. The target study could address this critique by ensuring that non WEIRD cultures are well represented and that the coding categories are developed inductively from local language use rather than imposed a priori from Western theory.

The Reductionism Problem: Both MFT and CMT have been criticized for reductionism—MFT for reducing the richness of moral experience to a handful of "foundations," and CMT for reducing the richness of linguistic meaning to a small set of conceptual metaphors. The target study might inadvertently reinforce these reductions if it forces complex cultural moral concepts into predetermined categories. A more productive approach would be to allow for the emergence of culture specific moral concerns that are not captured by the existing foundation framework, and to identify metaphorical patterns that do not fit neatly into the purity/loyalty/authority tripartite classification.

The Directionality Problem: Finally, there is a fundamental question about the direction of causation between moral metaphors and moral foundations. Do moral foundations structure the metaphors people use to talk about morality (as MFT might suggest)? Or do the metaphors available in a culture's language shape the moral intuitions that people develop (as linguistic relativity might suggest)? Most likely, the relationship is bidirectional and reciprocal, but the target study's correlational design would not be able to establish causality. Future research would need to employ experimental methods for instance, priming cultures with particular metaphors and measuring subsequent moral judgments to address this question.

c. Future Research Directions

Several fruitful avenues for future research emerge from the target study's framework. Developmental Studies: When do children acquire the metaphorical mappings that structure adult moral concepts? Cross cultural developmental studies could trace the emergence of purity, loyalty, and authority metaphors in child language, identifying points of universality and cultural divergence (Xu & Wang, 2021). Such studies would help resolve the nature nurture debate by showing which aspects of moral metaphor are present early in development and which emerge later through cultural learning.

Neurocognitive Investigations: Neuroimaging studies could investigate whether the same neural systems are activated by moral judgments and their metaphorical expressions. For example, does hearing a purity metaphor ("he has a dirty mind") activate the insula and other disgust related regions in the same way as seeing a disgusting image? Cross cultural neuroimaging could test whether the neural bases of moral metaphors are universal or culturally variable.

Experimental Manipulation: If the target study identifies specific metaphorical source domains that are differentially used across cultures, researchers could experimentally manipulate exposure to these metaphors and measure effects on moral judgments. For example, would priming Chinese participants with a "filial loyalty" metaphor increase their endorsement of authority respecting moral judgments, relative to a neutral control condition? Such experiments would provide causal evidence for the role of metaphor in moral cognition.

Interventions: Finally, understanding the metaphorical structure of moral concepts could inform interventions designed to reduce moral conflict and promote cross cultural understanding. If different moral communities conceptualize the same foundation in different ways (e.g., authority as dominance vs. authority as parental care), recognizing these differences could facilitate more productive dialogue across moral divides.

V. Conclusion

"Metaphor Systems and Moral Foundations: How Linguistic Metaphors for Purity, Loyalty, and Authority Vary across 12 Cultures" represents an ambitious and theoretically significant attempt to bridge two influential traditions in the cognitive science of morality. By systematically linking the contentful categories of Moral Foundations Theory to the structural analysis of Conceptual Metaphor Theory, the target study opens a new frontier in the investigation of moral universality and cultural variation.

The review presented here has argued that such a study is both theoretically motivated and methodologically feasible. Moral Foundations Theory provides a principled framework for selecting the moral concepts of interest purity, loyalty, and authority, which have been shown to vary systematically across cultures while retaining a common core. Conceptual Metaphor Theory provides the analytical tools for identifying and comparing the linguistic expressions through which these abstract concepts are rendered concrete and communicable across twelve diverse languages and cultures. Together, these two frameworks offer a more comprehensive account of moral cognition than either could provide alone: MFT tells us what moral intuitions people have; CMT tells us how those intuitions are structured, expressed, and transmitted through the vehicle of language.

The potential findings of the target study ranging from universal embodied mappings to systematic cultural variations in elaboration would have important implications for both theories. For MFT, a systematic pattern of cross cultural variation in moral metaphors would provide strong support for the cultural learning component of the theory, while the presence of universal core mappings would support the nativist component. For CMT, a twelve culture study would provide the most extensive cross linguistic test to date of claims about the embodiment of moral concepts, potentially identifying universal patterns that have been obscured in studies limited to a few languages.

Of course, the target study also faces significant challenges, including the difficulty of constructing comparable corpora across languages, the subjectivity of metaphor identification across cultures, and the perennial problem of disentangling language and culture. Moreover, the study's correlational design limits its ability to address questions of causation and directionality. But these challenges are not insurmountable, and they point toward exciting directions for future research, including developmental studies, neurocognitive investigations, experimental manipulations, and real world interventions.

In the broader landscape of moral psychology, the target study represents a welcome shift toward genuinely cross cultural, linguistically informed investigation. Too much of the field remains focused on Western, English speaking participants, generalizing from a sliver of human experience to universal claims about human nature. By centering linguistic diversity and cultural variation, the target study aligns moral psychology with the best traditions of anthropology and cognitive linguistics, reminding us that to understand human morality, we must study it in all of its cultural and linguistic manifestations.

Whether the specific findings of the target study match the patterns hypothesized here must await the paper's publication and peer review. But regardless of the empirical outcome, the theoretical synthesis that the study represents bridging moral foundations and conceptual metaphors, universality and cultural variation, psychology and linguistics is itself a significant contribution. It provides a framework that future researchers can build upon, refine, and extend, bringing us closer to a truly integrated cognitive science of human morality.

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