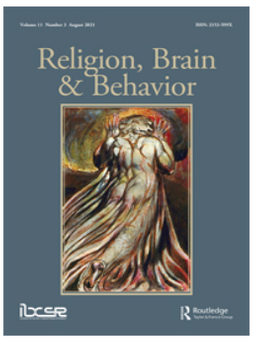

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# Why do great and little traditions coexist in the world's doctrinal religions?

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**ABSTRACT**

Anthropologists and historians of religion have commonly contrasted "great" (literate, authoritative, and centrally regulated) traditions with "little" (popular, unauthorized, and locally variable) traditions. These two dimensions of doctrinal religion are thought to be a product of divergent patterns of learning and cultural transmission. It is common for the official representatives of doctrinal religions to portray the unauthorized practices of little traditions pejoratively as amoral superstitions. Here, we consider an alternative theory, that great and little traditions are a product of distinct forms of cooperation: the one focused on loyalty to large-scale categories evolving via cultural group selection, the other focused on advancing the interests of kin-based relational ties evolving via intra-group selection. To investigate this theory further, we carried out a series of studies with followers of great and little traditions within Burmese Theravada Buddhism, showing overall that great tradition affiliation involves stronger alignment with categorical large-scale groups, while little tradition affiliation involves stronger alignments with relational kin-based groups. We propose an empirically-grounded general theory of the evolutionary processes and psychological mechanisms underlying the bifurcation between great and little traditions in the world's doctrinal religions.

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Religiosity; moral psychology; cultural evolution; cooperation; Burma; Myanmar

## Introduction

Scholars of religion have long argued that orthodox variants of world religions, and their myriad offshoots, differ systematically from the variable and localized cults of lay adherents. This is often described as a contrast between "great" and "little" traditions (Redfield, 1956)—or using a range of related distinctions, such as between "official" and "folk," or "popular" religion. Great traditions are typically literate, urban, and relatively high status, whereas little traditions tend to flourish among relatively uneducated, rural, and low-income populations (Burke, 1978; Dumont & Pocock, 1957; Pain, 2017). Great tradition beliefs and practices may be selectively adopted by the laity depending on their compatibility with local needs (Obeyesekere, 1963). Although elites may attempt to impose their religion in order to control the populace (Scott, 1977), non-elite forms of religiosity are seldom completely eliminated. Instead, they survive, seemingly as an expression of ordinary people's resistance to domination (Kemp, 2018; Trigger, 2003).

Burmese Theravada Buddhism provides a vivid illustration of the main points of contrast between great and little traditions, due to the gulf between doctrinal Buddhism and local "animist"

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beliefs and practices, which include devotion to spirits and demigods (*nats*), wizards (*weikza*), and other beings, as well as astrology and magic (Brac de la Perrière, 2009). According to some scholars, Buddhism is an external veneer superimposed on indigenous animism (Temple, 1906). The two may conflict, but often within the minds of individuals (Spiro, 1978), perhaps with complementary psychological or social functions (Ames, 1964). According to others, animist beliefs are best understood as part of a single Buddhist cosmology (Brac de la Perrière, 2016). Stanford and Jong (2019) have shown that Burmese Buddhist religiosity exhibits a clear two-dimensional structure using a novel psychometric religiosity instrument. These two dimensions correspond not to Buddhism vs animism, but seem closer to an etic contrast between great and little traditions—the former including practices and beliefs promoted by translocal Theravada institutions, and the latter comprising everything else, from heterodox views of the Buddha, to spirit and wizard devotion. While these two dimensions of religiosity in no way undermine the argument that Burmese *religion* cannot be divided in two, they suggest that individual engagement with that religion varies along lines close to those suggested by a distinction between great and little.

One way of conceptualizing great and little traditions is as a distinction between doctrinally elaborated vs cognitively optimal religious systems. According to the theory of "modes of religiosity" (Whitehouse, 1995, 2000), doctrinal systems are characterized by highly routinized rituals and well-developed bodies of teachings, which spread in stable form across populations, for example, as regionally distributed traditions. Several factors are thought to contribute to stabilization of doctrinal systems. Doctrinal beliefs and practices are frequently transmitted via highly regularized forms of worship, making deviations from orthodoxy easier to identify. Top-down systems policing orthodoxy and orthopraxy are facilitated by professionalized religious hierarchies, often requiring protracted training (Whitehouse, 2004). Tight norms, perhaps intensified by existential threats, facilitate peer-to-peer policing (Gelfand, 2018; Whitehouse & Kavanagh, forthcoming). Thus doctrinal systems are not only highly elaborated, they are highly "cultivated" in that their maintenance entails considerable work. They require, for example, institutional arrangements for supervision and enforcement, regular repetition of beliefs and practices to sediment them in semantic and procedural memory, and training and mnemonic supports typically focused around rote-learning and authoritative interpretation of sacred texts. From this viewpoint, great traditions are associated with literate urban elites precisely because they rely on education and top-down policing, elevating religious authorities in status and requiring access to centrally-controlled resources. Thus many great tradition features are wired into the "genome" of the doctrinal mode of religiosity.

By contrast, little traditions are much less costly to maintain, requiring little or no peer enforcement or top-down regulation. Little tradition beliefs and practices tend to be easily transmitted, requiring comparatively little training to acquire or remember. Such traditions have been described as "cognitively optimal", in that their cultural content is organized in a way that meets input conditions of evolved cognitive modules (Sperber, 2001; Whitehouse, 2004). Examples include simple concepts of supernatural agency based on minimally counterintuitive violations of domain-specific ontological assumptions, giving rise to popular notions of witchcraft, divination, or weeping statues (Boyer, 2001). Other examples include evolved predispositions toward mind-body dualism engendering notions of an afterlife or migrating souls (e.g., spirit possession), as well as informing our reasoning about many common problems, from bereavement to psychosis (Bering, 2006; Cohen, 2007; Hood, 2009). In short, little traditions tend to cluster around cultural representations that are naturally easy to acquire, remember and transmit.

Great traditions may be likened to cultivated gardens, requiring great effort to build and maintain, whereas little traditions are like weeds spreading on the wind, growing without the need for special care or cultivation (Whitehouse, 2021). This, anyway, is how many theorists in the cognitive science of religion have sought to understand the relationship between so-called "theologically correct" (TC) doctrinal systems, reproduced in the rarefied cloisters and classrooms of theological schools, and "theologically incorrect" (non-TC) variants that continually

emerge and spread among the laity (Slone, 2005). Experiments have shown that even when research participants know an officially-sanctioned doctrine, such as the portrayal of the Christian God as omniscient, when their cognitive systems are overtaxed, they revert to more intuitive reasoning, such as that God must attend to emergencies in turn rather than simultaneously (e.g., Barrett, 2001). Thus, although there may be a tendency for great traditions to emphasize TC dogma and for little traditions to privilege non-TC variants, these same tendencies exercise an influence within individual minds, such that everyone tends to default to non-TC reasoning when the more heavily-cultivated TC knowledge is lacking or temporarily inaccessible.

Efforts to make precise the relationship between doctrinal and "wild" aspects of a doctrinal system, and factors regulating their relative dominance in a tradition over time, include agent-based models, incorporating variables hypothesized to alter the relative impact of cognitively-optimal variants. One such model constructed a semantic network to describe the belief system of a millenarian movement (a so-called "cargo cult") in Papua New Guinea, commonly known as the Kivung (Whitehouse et al., 2012). Kivung has many hallmark features of doctrinal orthodoxy, being highly routinized and regulated through the supervisory prominence of a centralized hierarchy (Whitehouse, 1995). Nevertheless, mainstream Kivung teachings constantly risk being forgotten or garbled by nonliterate adherents across scattered villages. Researchers modeled these dynamics using a semantic network in which nodes corresponded to beliefs and practices, as commonly expressed in recorded speeches. Some Kivung beliefs and practices are grounded in intuitive ideas about ritual efficacy, mind-body dualism, immanent justice, and teleological functions of natural phenomena. The model assumed that the more distant a given node is from a cognitively optimal anchor point, the more likely it will suffer distortion by erroneous encoding or recall. The model further assumed that the more frequently a node is encountered, the less vulnerable it is to distortion. Another factor influencing the maintenance of TC elements may be the motivational strength of nodes, which is thought to decline with repetition (the "tedium effect"), a tendency that offsets mnemonic benefits of frequent rehearsal. Modulating variables such as these in computer simulations facilitates theoretically-informed predictions about the conditions under which non-TC little traditions come to deviate from doctrinal orthodoxies of great traditions.

Modeling religious systems requires precise specification of relationships between variables that, in this case, are thought to influence the relationship between wild and doctrinal parameters in a semantic network. For example, the above model assumes that the more distant a representation is from an intuitive anchor point, the more repetition it requires to be maintained intact. Modeling the implications of this suggests ways of conceptualizing and quantifying distances between more or less intuitive ideas and exploring how modulating effects of repetition (among other factors) might influence fidelity of transmission of religious representations under specified conditions. This is one way to expand our toolkit for generating testable predictions about the relationship between wild and doctrinal dynamics.

As the above model illustrates, the distinction between highly-cultivated "great" traditions and wilder "little" traditions is a matter of degree, not kind. Thus, it is useful to conceptualize great and little traditions not as ideal types, to which all religious traditions may be assigned, but as "attractor positions" (Whitehouse, 2004, pp. 74–77). That is, some religions tend to cluster around a more doctrinal configuration due to the kinds of factors discussed above but, when those weaken, will drift towards wilder forms—and, if they become sufficiently weak, may lose virtually all doctrinal aspects, eventually clustering around cognitively optimal anchor points typical of little traditions. The concept of "attractor position" has been well-elaborated as part of a conceptual framework known as the "epidemiology of representations" (Sperber, 1996), according to which religious representations are analogous to diseases, exhibiting different types and magnitudes of virulence. Some religions might spread rapidly, like epidemics, before burning out, while others become entrenched within a population, like endemic diseases. Researchers working with this framework have tended to emphasize the non-adaptive nature of these patterns of spread, in particular suggesting that the

tendency of "wild" religious representations to cluster around attractor positions is a by-product of the way human psychological dispositions have evolved.

An important corollary of the distinction between attractor positions and ideal types is that the former is intended not to serve as a means of classifying cultural phenomena within an exhaustive taxonomy, but to capture aspects of the epidemiological dynamics of cultural traditions, such as their patterns of emergence and spread. As such, the purpose of the distinction between doctrinal and wild religious dynamics is not to organize all religions into a fixed taxonomy. Although some may be dominated by wild characteristics, while others exclude them, favoring highly-disciplined doctrinal forms, many religions exhibit an uneasy mixture of both, even if erring toward one end of the spectrum. Moreover, some traditions may exhibit dynamics that are neither primarily wild nor doctrinal, entailing altogether different cognitive and epidemiological characteristics and thus creating a distinct attractor position in their own right. A case in point is the so-called "imagistic" mode of religiosity, associated with rare, emotionally intense rituals (Whitehouse, 1995, 2000, 2004). Such rituals create intensely cohesive groups by fusing personal and group identities based on shared experience (Whitehouse, 2018; Whitehouse & Lanman, 2014). Personally transformative processes of reflection on the meanings of imagistic experiences may involve epiphanic insights diagnostic of mystery cults and esoteric religions, which are neither "wild" in the sense of highly intuitive and easily spread nor "doctrinal" in the sense of officially codified, enforced, and standardized. There may indeed be other attractor positions in the morphospace of religious forms that are neither wild, doctrinal, nor even imagistic (Whitehouse, 2021). Thus, we do not claim that the doctrinal and wild aspects of Burmese religious life that are the focus of the present study, and are of central importance to established literature on "great" and "little" traditions, are exhaustive of all possible attractor positions warranting scientific scrutiny.

A sophisticated effort to characterize the relationship between doctrinal/great and wild/little religions based on an epidemiological framework, argues that there are four typical features common to all wild traditions (Boyer, 2019): lack of a stable, coherent belief system; a focus on pragmatic concerns (especially preventing or ameliorating misfortune); postulation of agents with supernatural powers (e.g., to heal); no sense of community engendered by participation. According to Boyer, wild traditions coalesce around these four features because they satisfy individual, non-cooperative needs—not because of enforcement or group loyalty. That is, from the perspective of adherents, there is no reason why beliefs and practices should be stable, coherent, and subject to enforcement, and adherence does not imply loyalty to others who adopt the same tradition. On this view, the appeal of wild religions lies in the promise of practical assistance, particularly in management of misfortune, coupled with intuitive credibility. This view is broadly consistent both with stereotypes widely documented among practicing religious authorities that portray wild variants of their traditions in pejorative terms, as petty superstitions (Whitehouse & Martin, 2004) but also with scientific studies of the contrasts between moralizing world religions emphasizing universalistic principles and more traditional religions focused on parochial concerns (e.g., Lang et al., 2019).

Great traditions, however, do not simply result from the top-down imposition of ideas and practices. While centralization and hierarchy may allow authorities to police orthodoxy more effectively, the maintenance and spread of doctrinal systems also typically depend on voluntary participation by the laity (Whitehouse, 2004). For example, high-frequency repetition of beliefs and practices not only makes deviations easily detectable but lays foundations for identification with group categories (rather than relational networks), motivating increased commitment to ingroup beliefs and practices and derogation of outgroups (Lane, 2019; Whitehouse & Lanman, 2014). Long-term participation in routinized rituals may also serve as "credibility enhancing displays" that make beliefs and practices more readily transmitted (Henrich, 2009) and any moral rules, for instance, associated with punitive deities (Norenzayan, 2013), more easily enforced. Thus, there may be numerous pathways through which doctrinal systems are regulated not requiring top-down coercion (from Whitehouse & Kavanagh, forthcoming). Here we explore the possibility that, for all the reasons above, great and little traditions arise in part as efforts to address different kinds of cooperation problems.

## Cooperation, morality, and great vs little traditions

If great traditions are fueled by commitment to groups and coalitions, alongside their norms, rituals, and other identity markers, are little traditions motivated by individuals' amoral desires, irrespective of their consequences for cooperation problems, either within or beyond kin groups? Although Boyer's (2019, p. 6) argument suggests that this may be the case, it seems at least as plausible, and potentially compatible with the overall goals of Boyer's approach, that doctrinal and wild religions both have cooperative aspects, but different ones: the former sustain cooperation with categorical groups and coalitions; the latter, with relational groups and kin. Indeed, distinct forms of moral motivation may have evolved because of a need simultaneously to sustain cooperation at the ingroup level and at smaller scales, even when these may conflict. For example, it has been argued that the moral domains postulated by Moral Foundations Theory (MFT) (Graham et al., 2011) can be cleaved into those concerned with binding groups, evolving via cultural group selection, and those concerned with the advancement of individual and kin-based interests, evolving via intragroup competition (Sinn & Hayes, 2017). Likewise, the theory of Morality-as-Cooperation (MAC) (Curry et al., 2019) suggests that distinct moral domains evolved to solve distinct cooperation problems, and in particular that group loyalty, reciprocity, and fairness evolved via cultural group selection to facilitate cooperation among distantly related individuals while caring for kin, and arguably a concern with defending relatives and guarding their property, evolved via intragroup selection. It may then be that doctrinal and wild religions cue complementary moral motivations, the former appealing to binding foundations and the latter to individualizing ones. If so, we would predict that those aligning primarily with great traditions would exhibit stronger tendencies toward moral sentiments which putatively evolved to sustain categorical ingroups than those more aligned with little traditions. Conversely, we would predict that those aligning primarily with little traditions would exhibit stronger proclivities toward moral sentiments which evolved to sustain relational ties and kin groups than those more aligned with great traditions. Further, we would predict that, in an experimental context, making salient beliefs and practices of a great tradition would prime moral sentiments functionally associated with categorical ties whereas making salient beliefs and practices of a little tradition would prime moral sentiments functionally associated with relational ties to kin.

Testing these predictions requires a measure of strength of alignments with a great tradition vs its associated little tradition to serve as predictors, alongside measures of moral commitment to categorical group or coalition vs family or relational group as outcome variables. To make some preliminary steps in that direction, we conducted three studies in Burma among adherents to doctrinal Theravada Buddhism (great tradition) and animistic cults (little tradition). The first study examined relationships between (a) great and little traditions, respectively and (b) a variety of moral domains, measured both by the Moral Foundations Questionnaire (MFQ) and the Morality-as-Cooperation Questionnaire (MAC-Q). In the second study, we primed participants with images corresponding to supernatural agents associated with the two traditions and measured their scores on the MFQ and MAC-Q under these conditions. Consonant with the notion that the cooperative functions of the two traditions are complementary, in the third study we employed three further scales to investigate the extent to which the two traditions engender distinct forms of identity fusion, choices of rule-universalism vs rule-particularism, and levels of relational mobility.

## Study 1: Are great and little traditions associated with different kinds of moral concern?

This study aimed to assess the relationship between great and little tradition religiosity and moral foundations scores. Both MFT and MAC propose sets of universal moral inclinations; while remaining agnostic as to the merits of either theory, we employed their respective questionnaires to assess how the constructs posited in those theories relate to religiosity. According to MFT, three "binding" foundations serve largely to maintain the ingroup, while two "individualizing"

foundations serve to protect individual interests—these interpretations being based on a wider body of empirical and theoretical work, rather than the literal content of the items. By contrast, MAC argues that the human moral palette consists of a different set of at least seven domains, based on principled game-theoretic assumptions. Bearing in mind the above, and allowing for the possibility that the range of moral inclinations might be best described by either theory (or neither, or some combination of both), our primary hypothesis was:

> H1: Stronger alignment with a great tradition predicts prioritization of moral concerns associated with commitment to a larger ingroup (proxied by MFT's binding foundations, and MAC's domains of group loyalty, deference and reciprocity). Stronger alignment with a little tradition predicts prioritization of relational ties to kin (proxied by individualizing foundations of MFT, and MAC domains associated with caring for kin and their protection against non-kin, expressed as concerns with hawkishness, property and fairness), which do not necessarily align with, and may even subvert, commitment to a larger group category.

MAC's reciprocity domain was included amongst ingroup-oriented foundations because its items reflect conditional cooperation with those who may be outside one's immediate network, but are likely members of the extended ingroup—indeed, items such as "having an obligation to help those who helped you" appeared ethnographically to fit closely with concerns with help received from, and debt owed to, the sangha (monkhood). The hawkishness domain was included amongst relationally-oriented foundations on the presumption that, by contrast with deference to the extended ingroup, it reflects a drive to compete with others outside one's immediate network, in favor of one's kin and close associates. We also aimed to test an alternative hypothesis, namely:

> H2: As a result of the emphasis of the Buddhist great tradition on loving kindness toward all beings, strength of alignment with the great tradition predicts prioritization of universalistic forms of morality. Strength of alignment with the little tradition predicts prioritization of particularistic forms of morality.

Universalistic morality is understood as comprising moral obligations toward all others, irrespective of status, relationship or group membership; thus, it was proxied by MFT's care and fairness foundations, and MAC's fairness and property domains, all of which concern positive treatment of others without regard to particular circumstances. Particularistic morality is understood as comprising moral obligations based on particular circumstances—for example, reciprocal obligations based on the history of exchanges in a relationship, parochial obligations based on group membership, or obligations based on social status. In contrast with the widespread idea that great traditions encourage group-centered morality, while wild traditions lack moral motivation, H2 attempted to explore the idea that the great tradition is universalistic, while also testing for the possibility that the little tradition is, by contrast, particularistic or parochial, rather than amoral (Lang et al., 2019).

Table 1 shows the respective conceptual groupings of MFT and MAC constructs in each of the two hypotheses.

**Table 1.** Conceptual groupings of factors in studies 1 and 2.

| | | | | | | |
|---|---|---|---|---|---|---|
| H1 | Ingroup morality | MFT | Authority | Sanctity | Loyalty | |
| | | MAC | Group | Reciprocity | Deference | |
| | Relational morality | MFT | Care | Fairness | | |
| | | MAC | Property | Hawkishness | Fairness | Kin |
| H2 | Universalism | MFT | Care | Fairness | | |
| | | MAC | Fairness | Property | | |
| | Particularism | MFT | Authority | Loyalty | Sanctity | |
| | | MAC | Reciprocity | Hawkishness | Group | Kin |
| H3 | Ingroup morality | MFT | Authority | Loyalty | Sanctity | |
| | | MAC | Group | Reciprocity | Deference | |
| | Relational morality | MAC | Kin | Hawkishness | | |
| | Universalism | MFT | Care | Fairness | | |
| | | MAC | Fairness | Property | | |

## Methods

To measure religiosity, we employed the Burmese Buddhist Religiosity Scale (BBRS). The BBRS was developed to detect the dimensional structure of Burmese Buddhism, including aspects of great tradition Theravada as well as little tradition *nat* worship, astrology, and devotion to *weikza*. In the event, it showed a two-dimensional, nearly orthogonal structure, with the little tradition loading on one factor, and the great tradition on the other (Stanford & Jong, 2019).

Two moral psychology instruments were employed. One was the MFQ, designed to measure the strength of the five foundations proposed by MFT: care/harm, fairness/injustice, sanctity/degradation, authority, and loyalty. The second was the newer MAC-Q, based on MAC's seven domains: kinship, reciprocity, group loyalty, hawkishness, deference, fairness and property. Both scales were translated into Burmese and validated, along with the BBRS, through back-translation, interviews conducted with informants in Yangon, and two online pilots.

These three questionnaires, along with a series of demographic questions, were administered online. Participants were 2285 adult Facebook users in Burma who identified themselves as Buddhists, and Burmese as their mother tongue. Those who did not meet these criteria, or failed to complete the scales, were excluded from the original sample ($n = 5639$). The sample skewed heavily toward university-educated respondents.

Non-differentiation and "straight-lining" were assessed using the "longest string" method (Johnson, 2005). Rather than exclude respondents, items for highly non-differentiated scales were marked as missing in 6.6% of cases for the MAC-Q and 7% for the MFQ.

Structural equation modelling (SEM) was conducted to test for relationships between moral foundations and religiosity factors. SEM builds on confirmatory factor analysis (CFA) to allow for simultaneous testing of measurement models and postulated associations between latent variables. While SEM is a well-established method, relatively few studies have thus far employed it to evaluate relationships between religiosity and moral psychology. A notable exception is Bulbulia et al. (2013), who employed SEM to test relationships between MFT foundations and religious orientations in New Zealand.

SEM was carried out in Mplus 8 (Muthén & Muthén, 2017). All analyses were carried out using sample weights calculated to reflect the age and sex distribution in the 2014 Myanmar census (Myanmar Information Management Unit, 2014). Weights were generated using the R anesrake package (Pasek et al., 2014), using recommended parameters (DeBell, 2018; DeBell & Krosnick, 2009). Calculations were made using the weighted least squares method with mean and variance-adjusted chi-square (WLSMV). Missing data were not removed, but modeled in Mplus with maximum likelihood estimation as missing at random (Little & Rubin, 2002). Likert scales were treated as ordinal variables. Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA) are reported below, using generally accepted rules of thumb such that adequate model fit is indicated by CFI $\geq .95$ and RMSEA $\leq .06$ (Hu & Bentler, 1999).

Both the MFQ and MAC-Q were modeled using multitrait-multimethod (MTMM) models with uncorrelated method factors, to account for their use of distinct "judgement" and "relevance" scales (Kenny & Kashy, 1992). Although in addition to the two traditions, the BBRS yields a weak third factor, corresponding to cognitive items (Stanford & Jong, 2019), this was excluded for simplicity. Moreover, while orthogonal measurement models are adequate for the BBRS, great and little tradition factors were here allowed to covary, to reflect their weakly positive relationship. Following common practice, variances of latent dependent variables were left free to be estimated (Ullman & Bentler, 2013, p. 666).

## Results

### MFQ

The CFA measurement model (see Figure 1) fit fairly well (CFI = .944; RMSEA = .021; SRMR = .060; $X^2$ (1601, $N = 2285$) = 3214.341, $p < .001$; TLI = .940), although 4 indicators had an incorrect

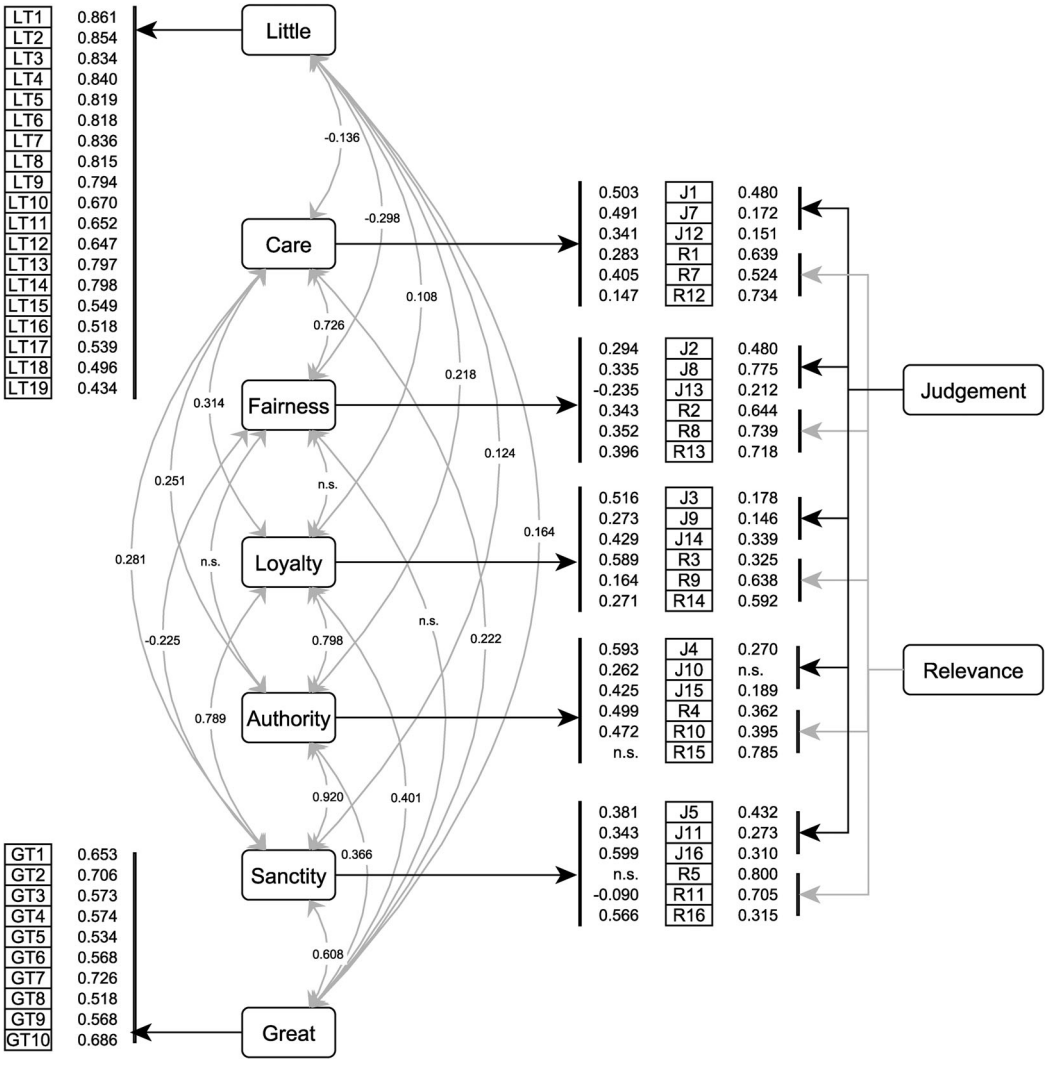


**Figure 1.** CFA measurement model for MFT and BBRS, with standardized coefficients; n.s. = not significant ($p < .05$); BBRS items listed in the order of Stanford and Jong (2019, Table 3).

sign or were not significant ($p < .05$). CFA tests relationships between latent variables and indicators; SEM is necessary to test relationships between latent variables.

Turning to SEM, the H1 model showed a fairly good fit (CFI = .943; RMSEA = .021; SRMR = .062; $X^2$ (1606, $N = 2285$) = 3246.394, $p < .001$; TLI = .939). Two item loadings were non-significant ($p < .05$), while two others loaded with an incorrect valence. Structural loadings were significant ($p < .01$) for all five latent variables. However, contrary to H1, loadings of care and fairness on the little tradition were in fact negative. As such, although the model generated to test H1 (see Figure 2) fit adequately, H1 was rejected.

The H2 model showed a worse fit (CFI = .928; RMSEA = .024; SRMR = .071; $X^2$ (1606, N = 2285) = 3675.586, $p < .001$; TLI = .923). Two measurement items were non-significant ($p < .05$), while three others loaded with an incorrect valence. Only four out of five structural loadings were significant ($p < .05$). The model was therefore rejected.

For the purposes of exploration, a less-constrained model was attempted, allowing all MFT factors to load on both religiosity factors. This model showed similar fit (CFI = .944; RMSEA = .021;

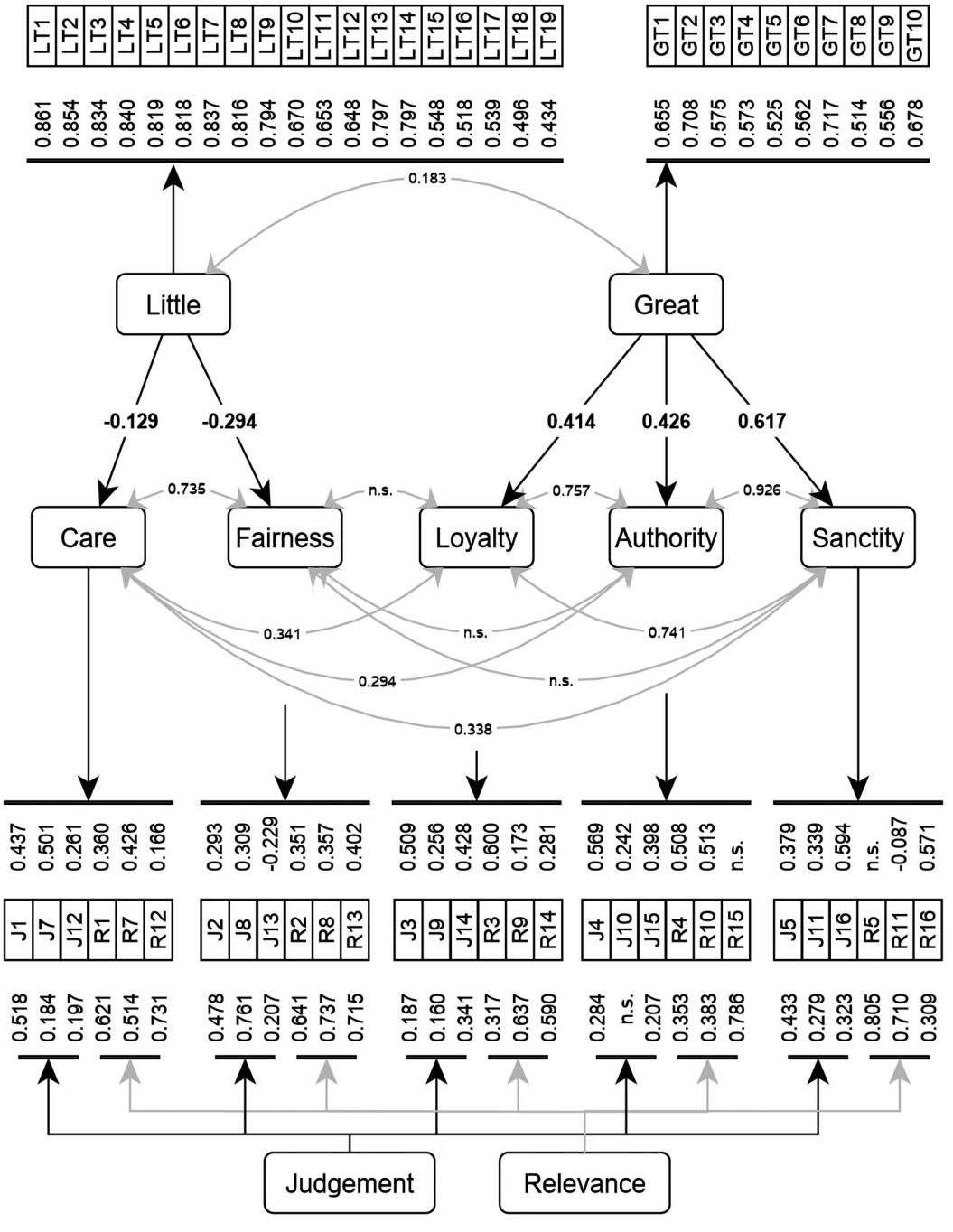


**Figure 2.** H1 SEM for MFT with standardized coefficients; n.s. = not significant ($p < .05$); BBRS items listed in the order of Stanford and Jong (2019, Table 3).

SRMR = .060; $X^2$ (1601, $N = 2285$) = 3214.355, $p < .001$; TLI = .940). However, three of five additional structural loadings were non-significant. Thus the model generated in testing H1 appeared to give a more consistent and parsimonious picture than the unconstrained, a posteriori model.

Finally, an alternative, hierarchical SEM was fitted, in which the two traditions were regressed not on the MFT factors, but on a binding and an individualizing factor, themselves measured by the corresponding moral foundations. The H1 version of this model again showed a fairly good fit (CFI = .944; RMSEA = .021; SRMR = .060; $X^2$ (1711, $N$ = 2285) 30334.875, $p$ < .001; TLI = .940), but again, while binding morality loaded positively on the great tradition, individualizing morality loaded negatively on the little tradition ($p$ < .001). The H2 version of this model resulted in a negative PSI matrix, so was rejected.

### MAC-Q

Figure 3 shows the CFA measurement model (CFI = .950; RMSEA = .017; SRMR = .052; $X^2$ (2336, $N$ = 2285) = 3881.566, $p$ < .001; TLI = .947).

SEM model fit for H1 was good (CFI = .946; RMSEA = .018; SRMR = .056; $X^2$ (2343, $N$ = 2285) = 4017.011, $p$ < .001; TLI = .943) with two non-significant measurement item loadings ($p$ < .05). All structural loadings were significant ($p$ < .01). Once again, the valences of the fairness and property loadings on the little tradition were the opposite of those predicted by H1. Thus H1 was again rejected, although the resulting model (shown in Figure 4) fit adequately.

The H2 model showed a fairly adequate fit (CFI = .937; RMSEA = .019; SRMR = .061; $X^2$ (2343, $N$ = 2285) = 4294.716, $p$ < .001; TLI = .934) with only one non-significant measurement item loading. However, four of the seven structural loadings were non-insignificant ($p$ < .05). H2 was therefore rejected with respect to the MAC-Q.

### Discussion

Although H1 and H2 were rejected, these results suggest that great and little traditions are associated with distinct varieties of moral concern. In particular, the great tradition predicts moral orientations functionally associated with supporting the ingroup—binding MFT foundations, and MAC domains valorizing group loyalty, deference to authority, and reciprocity. By contrast, the little tradition is positively associated with caring for kin and hawkishly defending family interests in competition with non-kin. Interestingly, great tradition doctrinal content promoting universalistic values finds less resonance than ingroup loyalty, and little tradition adherence even negatively predicts universalism.

It may then be that the moral functions of great and little traditions are complementary. The former is associated with support for a larger collective, but neutral with respect to universalism. The latter is consistent with support for interpersonal relationships and kin groups, in opposition to universalism, but neutral with respect to attitudes toward the larger ingroup. Just as the weak covariance between the two traditions suggests that Burmese Buddhists combine the two in a variety of ways, or none at all, these two sets of moral orientations appear to be available to practitioners in combination or in isolation.

## Study 2: Do supernatural agents associated with great and little traditions prime different kinds of moral concern?

While study 1 showed an association between religiosity and morality across individuals, study 2 used an experimental design to explore whether supernatural agents associated with great and little traditions prime different kinds of moral concern. As both H1 and H2 were rejected in study 1, we aimed to test a third hypothesis, consistent with the results of study 1:

> H3: The great tradition strengthens ingroup-directed moral orientations; the little tradition strengthens relational moral orientations, while suppressing the sorts of universalistic morality that might undermine favoritism directed at kin and close associates.

Specifically, we predicted that primes associated with great tradition religiosity would increase scores on measures of the binding moral foundations of MFT, as well as reciprocity, hawkishness,

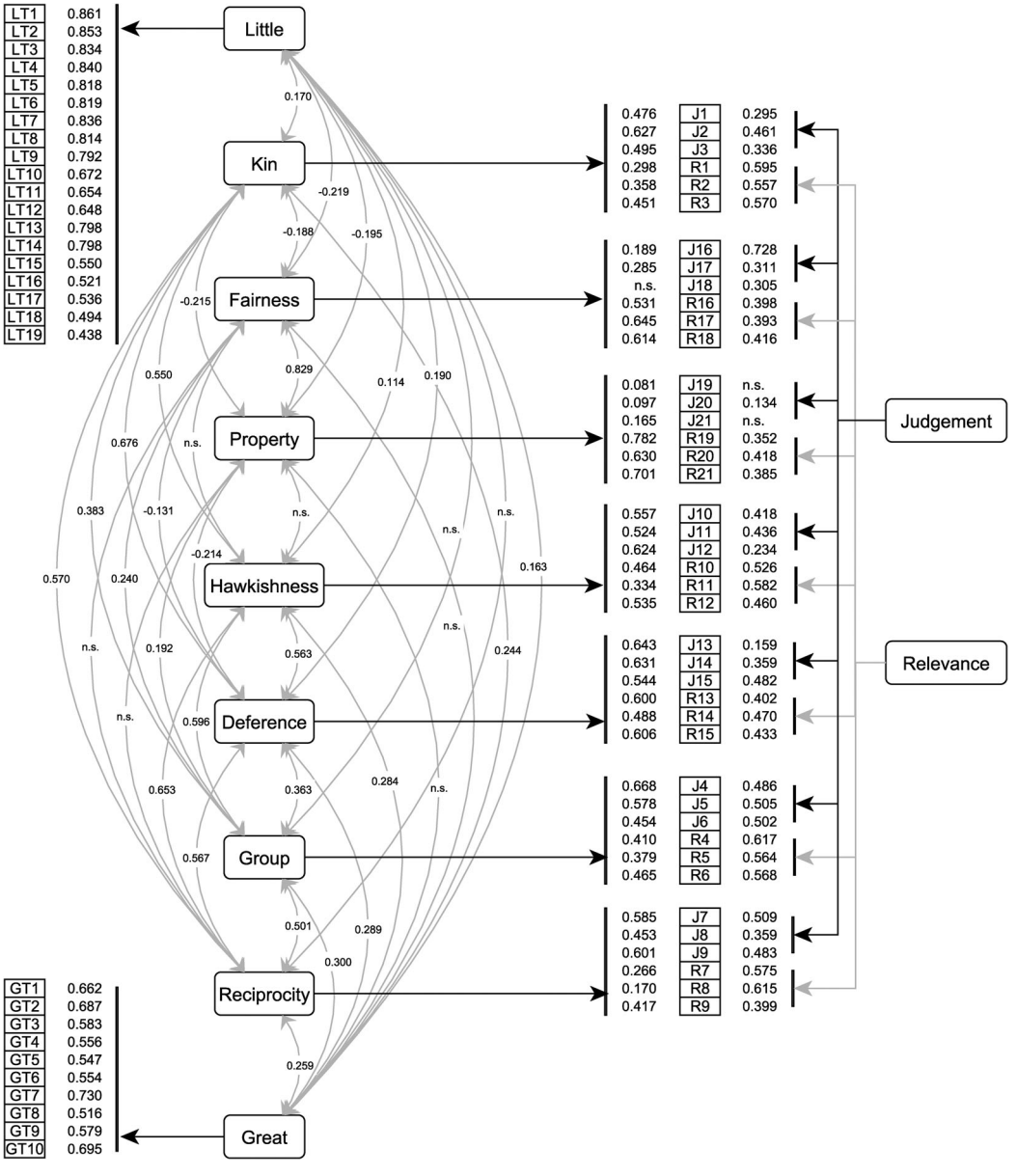


**Figure 3.** CFA measurement model for MAC and BBRS, with standardized coefficients; n.s. = not significant ($p < .05$); BBRS items listed in the order of Stanford and Jong (2019, Table 3).

deference, and in-group morality as proposed by MAC; by contrast, primes associated with little tradition religiosity would decrease scores on measures of MFT's individualizing foundations, as well as property and fairness concerns in MAC, but increase scores on MAC's kinship dimension.

## *Methods*

The MFQ and MAC-Q were administered online to Burmese smartphone users. Subjects were primed by the face of an agent floating in their screen's bottom-right corner while they completed the questionnaires (see Figure 5). In the control condition, this was a human face (condition 1). For

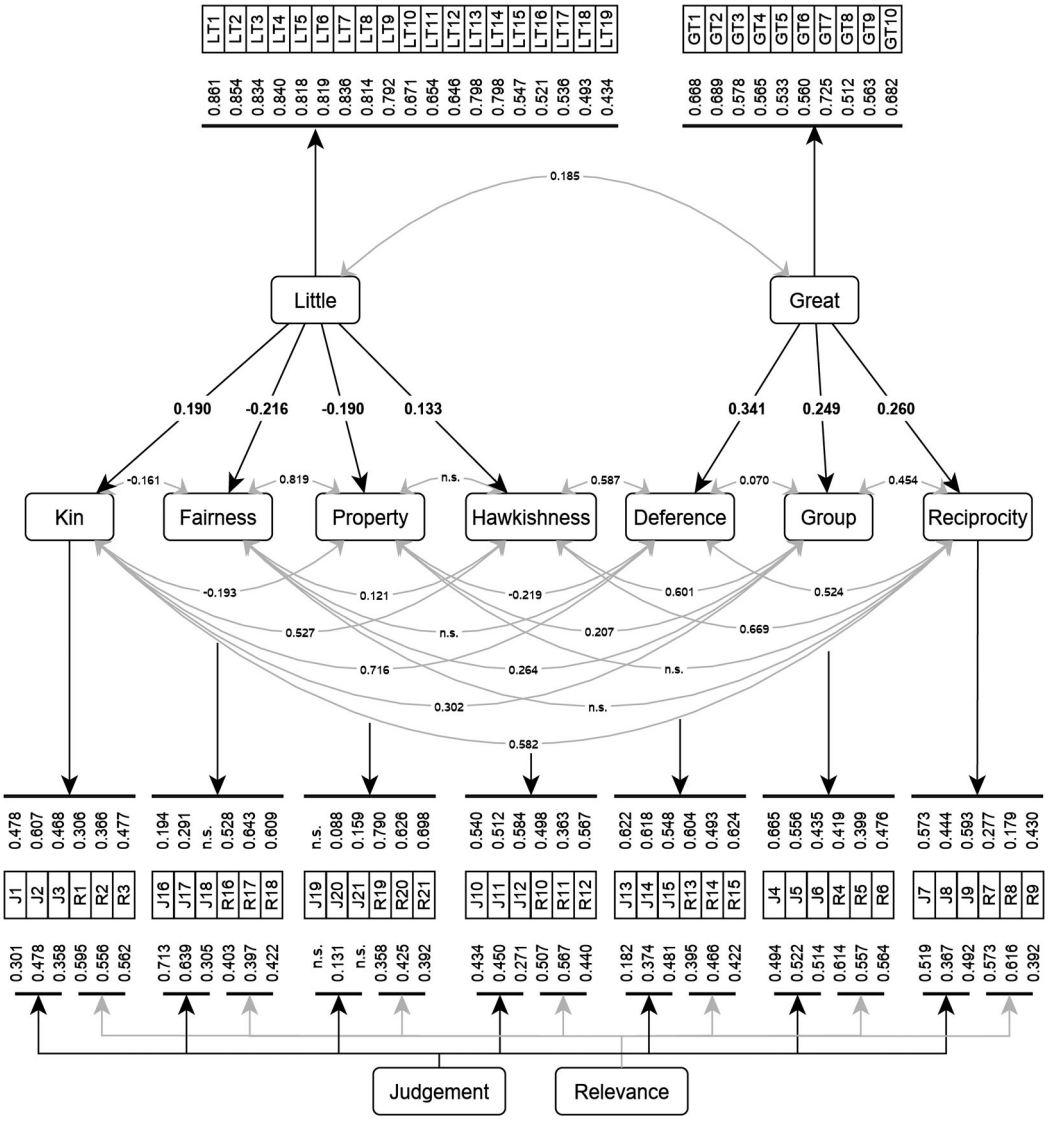


**Figure 4.** H1 SEM for MAC with standardized coefficients; n.s. = not significant ($p < .05$); BBRS items listed in the order of Stanford and Jong (2019, Table 3).

the little tradition condition, a *nat* was used (condition 4). However, for the great tradition, two separate conditions were employed: a Buddha (condition 2) and a deva (condition 3). Devas, otherwise known as "outer *nats*", are angel or demigod-like spirits, largely imported from the Hindu pantheon, who, unlike "animistic" *nats*, may be concerned with morality, and who have historically been thought to police Buddhists' moral behavior. Thus, because both devas and *nats*, by contrast to the Buddha, are thought to be active observers of individuals, we hypothesized that an active observer associated with the great tradition might exhibit a stronger priming effect than the Buddha, who is a symbol of that tradition, but is, according to doctrine, not watching. That is, we predicted that both deva and Buddha primes would increase binding morality relative to control, but the deva significantly more so than the Buddha. Several candidate images for each prime were pre-tested with respondents to study 1; the images selected were those recognized correctly by the greatest proportion (between 75% and 98%) of respondents.


**Figure 5.** Study 2 primes: (1) Human control; (2) Buddha; (3) deva; (4) nat.

Participants were 1695 adult, self-identified Buddhist Facebook users in Burma whose mother tongue was Burmese. 3024 respondents were excluded from the original sample ($n = 5646$) because they did not meet these criteria or did not respond to the questionnaires. Further exclusions were made of those who completed questionnaires implausibly quickly (Leiner, 2019) or wrongly identified the prime in a debriefing question. Analyses were carried out with unweighted data to assess sample average treatment effects, rather than estimate population treatment effects (Miratrix et al., 2018).

MFQ and MAC-Q scores were computed by first standardizing item values to correct for differences in scale use, then summing items corresponding to each moral domain. Tests for normality and equality of variance, followed by one-way ANOVA and Kruskal–Wallis rank sum tests, were performed with the R stats and car packages (Fox & Weisberg, 2019). To compare prime conditions against control, Dunnett's test was carried out using the R multcomp package (Hothorn et al., 2008).

### Results

The results of one-way ANOVA and the post hoc Dunnett's test are shown in Table 2. Levene's test did not suggest inequality of variances between conditions for any of the dependent variables; however, as the Shapiro–Wilk test indicated non-normality in some conditions for nine of the twelve dependent variables, Table 2 also reports the Kruskal–Wallis $H$ test.

With the addition of an effect on deference, the effects of the little tradition prime were as predicted: respondents primed with a *nat* scored higher on kinship and hawkishness, and lower on universalistic domains, as compared with the control. By contrast, the two great tradition primes produced no detectable effect.

### Discussion

These results suggest a psychological association between the little tradition and the forms of morality with which it was associated in study 1. Surprisingly, the *nat* prime increased not only these, but also those associated with MAC deference. It is unclear why this might have occurred, but it is notable that, like hawkishness, deference constitutes a form of status-based morality, consistent with the notion that the little tradition drives moral particularism. Alternatively, increased deference concerns might have arisen from the imagined presence of the *nat*—a powerful figure who must be respected and placated.

We found no effect of Buddha and deva primes on ingroup alignment, however. While many studies have found that religious priming increases ingroup-directed prosociality, an increasing number of null results has made clear that priming effects are highly sensitive to environmental

**Table 2.** Results of one-way ANOVA and the post hoc Dunnett's test.

| | | | | | Dunnett's test: Estimate vs control | | |
|---|---|---|---|---|---|---|---|
| | ANOVA F (3,1691) | Kruskal-Wallis *H* (3) | $\eta^2$ | Cohen's f | Buddha | Deva | Nat (with 95% CI) |
| Kinship | 5.887** | 18.173** | .010 | .102 | −.2466 | −.1195 | .4443*, [.0424, .8462] |
| Hawkishness | 3.604** | 11.451** | .006 | .080 | .2463 | −.0733 | .4395*, [.0333, .8458] |
| Deference | 3.767** | 9.4883* | .007 | .082 | .2823 | −.0881 | .4940*, [.0428, .9451] |
| Property | 4.281** | 10.735** | .008 | .087 | −.0286 | .1898 | −.5805*, [−1.0966, −.0645] |
| Care | 2.704* | 8.4801* | .005 | .069 | −.05766 | .0307 | −.37775*, [−.7463, −.0093] |
| Fairness (MFT) | 3.947** | 13.015** | .007 | .084 | −.2795 | −.1279 | −.5714**, [−.9794, −.1634] |
| Group | .715 | 2.0041 | | | | | |
| Reciprocity | .392 | 1.2283 | | | | | |
| Fairness (MAC) | .887 | 2.7512 | | | | | |
| Authority | .783 | 1.8869 | | | | | |
| Loyalty | 1.649 | 2.9164 | | | | | |
| Sanctity | .691 | 1.9182 | | | | | |

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

influences, as well as experimental design (Watanabe & Laurent, 2020). Images of these two kinds of agents are pervasive in everyday Burmese life, which may have resulted in habituation, undermining priming effects (Rieth & Huber, 2010). Alternatively, our human control may have been perceived as an ingroup member observing the participant, thus inadvertently priming ingroup morality. These explanations aside, our results do not suggest any psychological association between great tradition agents and ingroup morality. We tentatively conclude that this association appears to hold between individuals, but not within them.

Nevertheless, the experiment showed that, even in imperfect conditions of priming respondents to a smartphone questionnaire, the mere image of a little tradition agent has a small measurable effect on moral dispositions. Specifically, it seems to push individuals toward kin and status-based morality, and away from universalism.

## Study 3: How morally absolute, groupish, and relationally mobile are great and little traditions?

The results of the first two studies are consistent with the idea that the great tradition is oriented mainly to categorical group ties and coalitional psychology, while the little tradition is oriented to relational ties and kin psychology. Study 3 aimed to explore this further, by assessing three further hypotheses. The first drew on identity fusion theory, which explains extreme pro-group behavior as arising from a deep sense of oneness with a group. This may occur locally —fusion of one's identity with personal acquaintances—or in an extended form: fusion with an abstract group category (Whitehouse, 2018). We hypothesized that little tradition affiliation would predict local fusion with kin and other associates, while great tradition affiliation would predict extended fusion with categorical groups such as Buddhists and countrymen. Second, we hypothesized that the little tradition would predict greater rule-particularism vs rule-universalism—that is, a view of moral judgements as based on circumstance, not general rules—while the great tradition, dependent on impersonal norms to enforce cooperation with unknown ingroup members, would predict the reverse. Finally, we hypothesized that if the little tradition sustains cooperation in interpersonal relationships, then it should predict lower relational mobility; while if the great tradition is sustains cooperation with unknown ingroup members, it should predict higher relational mobility.

## Methods

This survey was conducted online, among a sample of 2848 self-identified Buddhist Burmese Facebook users. The relational mobility scale (RMS) (Thomson et al., 2018), Ma and Parks' (2007) universalism/particularism scale (UPS), and a modified verbal fusion scale were translated into Burmese, back-translated by independent translators and validated through cognitive interviewing in Yangon. Participants completed the BBRS in addition to these instruments.

In order to capture not only fusion with one group, but the possibility that individuals may be fused either with a larger collectivity or with smaller groups of interactants, fusion was measured with a series of seven items corresponding to the seven items of the verbal fusion scale (Gomez et al., 2011), but modified to require respondents to choose to which of seven groups each statement most applied. We hypothesized that these options would correspond to two kinds of fusion (Swann et al., 2014): local ("family", "friends", "neighbors") and extended ("Buddhists", "country", "sangha"), with "humanity" as a reference category. CFA was carried out in Mplus, employing robust maximum likelihood (MLR) estimation as fusion items were represented by nominal variables. More and less constrained models were attempted to test the relative fit of the model partitioning fusion items into local and extended fusion factors. SEM was then conducted, still using the MLR estimator, incorporating simultaneous testing of the fusion factor structure, BBRS religiosity factors, and the relationship between the two.

The RMS and UPS were assessed using CFA in Mplus as in study 1, following which their relationships with the BBRS factors were assessed using SEM. All analyses were conducted using samples weighted demographically as in study 1.

## Results

### Fusion

In the SEM combining the BBRS with the two-factor fusion model, all item loadings were significant ($p < .01$) and as expected. The SEM showed the predicted structural relationships: local fusion was predicted positively by the little tradition ($\beta = .079$, $p < .05$, 95% CI [.026, .132]), but negatively by the great tradition ($\beta = -.186$, $p < .001$, 95% CI [−.239, −.133]); while extended fusion was predicted by the great tradition ($\beta = .178$, $p < .001$, 95% CI [.123, .234]) but unrelated to the little tradition ($\beta = .032$, $p = .372$).

### Rule-particularism and rule-universalism

As found during scale development (Ma & McLean Parks, 2007), a one-factor model was inadequate to capture the PU scale (CFI = .744; RMSEA = .101; SRMR = .070; $X^2$ (35, $N = 2572$) = 947.848, <.001; TLI = .671). Instead, following the authors' argument that this reflects differences in answering style for reverse-coded items, a two-factor model was fitted, incorporating a method factor loading negatively on these items, and positively on the others (CFI = .937; RMSEA = .051; SRMR = .038; $X^2$ (34, $N = 2572$) = 258.427, $p < .001$; TLI = .917). The structural model, regressing rule-universalism-versus-rule-particularism on great and little tradition factors, showed fairly good fit (CFI = .945; RMSEA = .032; SRMR = .059; $X^2$ (698, $N = 2572$) = 2544.153, $p < .001$). Again, loadings were as predicted; great tradition affiliation predicted increased rule-universalism-versus-rule-particularism ($\beta = .464$, $p < .001$, 95% CI [.402, .526]), while little tradition affiliation predicted the reverse ($\beta = -.168$, $p < .001$, 95% CI [−.230, −.107]).

### Relational mobility

Using the factor structure given in Thomson et al. (2018), which breaks the RMS into two correlated "meeting" and "choosing" factors, and one method factor, the measurement model for the RMS showed good fit (CFI = .970; RMSEA = .044; SRMR = .029; $X^2$ (52, $N = 2771$) = 325.417, $p < .001$; TLI = .961). The structural model, regressing relational mobility on great and little tradition

BBRS factors, also showed good fit (CFI = .951; RMSEA = .030; SRMR = .056; $X^2$ (774, $N$ = 2771) = 2748.119, $p$ < .001; TLI = .948). Loadings were as predicted; relational mobility increased with the great tradition ($\beta$ = .219, $p$ < .001, 95% CI [.167, .271]) and decreased with the little tradition ($\beta$ = −.170, $p$ < .001, 95% CI [−.222, −.118]).

### *Discussion*

These results further support the view that the little tradition is associated with investment in relational rather than categorical ties. Little tradition practitioners are more likely to feel fused with family and friends; to see moral judgements as a matter of particular circumstances rather than universal principles; and to see interpersonal relationships around them as stable.

The great tradition, by contrast, is associated with forms of cooperation associated with a larger ingroup. Its practitioners are more likely to feel fused to this abstract ingroup; to understand morality in terms of impersonal norms that apply even between strangers; and feel that those around them may change interpersonal relationships throughout their lifetime.

As the great tradition is a translocal form of religiosity, we should not be surprised that its practitioners score highly on relational mobility. But *nat* and *weikza* devotees, like monks, form part of translocal communities, in which experts and lay practitioners travel between distant sites within Burma, exchange knowledge and form relationships (Brac de la Perrière, 2011; Patton, 2018). The little tradition, then, appears to have as much potential as the great for enabling practitioners to transcend local boundaries and form new relationships. Thus we cannot explain the difference in relational mobility scores simply by pointing to one tradition being translocal, and the other not. Instead, the above evidence suggests that the two traditions may appeal differently to individuals with differing levels of relational mobility because of their ability to support cooperation on very different scales.

## General discussion

The above studies were subject to a number of limitations. They were conducted online in 2017 and 2018, during a time of intensifying interreligious conflict in Burma, and were not preregistered. Moreover, samples skewed toward the university-educated, possibly because of unfamiliarity with questionnaires and a lack of digital literacy among other groups. Thus our results must be taken as preliminary.

These considerations notwithstanding, our findings suggest that the Burmese Buddhist great tradition predicts higher relational mobility combined with strong categorical ties and extended fusion to the ingroup, whereas the little tradition predicts lower relational mobility combined with strong relational ties and psychological kinship, and is negatively associated with universalism. Priming individuals with a little tradition stimulus provides further support for these associations.

Our results weigh against the doctrinal idea of the great tradition as a universalizing force. While the positive association with rule-universalism and relational mobility chimes with the suggestion that great traditions facilitate cooperation between strangers in far-flung locales, both moral foundations and identity fusion suggest that the objects of obligation for adherents are far from universal. Instead, great tradition affiliation predicts decreased fusion with humanity, and instead that adherents feel merged with the extended ingroup—a feeling reflected in higher scores on ingroup-oriented moral foundations. Thus, while the great tradition seems to accompany the breaking down of local and particularistic barriers to cooperation, what replaces them is not universalism, but orientation toward an extended collectivity, in implicit opposition to outgroups.

It must be noted that this may also reflect historical particularities of Burma. Since the mid-nineteenth century, Theravada has been shaped by nationalist movements in Burma, Sri Lanka, and elsewhere. Defense against corruption of the official religion has frequently been presented as the prime legitimating factor of post-colonial states, and nationalists have propagated an ideology which elides

Buddhist identity with that of the ethnic majority, and presents the ethnoreligious majority as under attack by outgroups (Turner, 2014; Walton, 2016, 2017). In this context, it is unsurprising that adherents to orthodoxy would also demonstrate fierce loyalty to the broader ingroup.

While the great tradition does not appear universalistic, the little tradition negatively predicts and even suppresses universalism. Nevertheless, it is positively associated with rule-particularism, as well as particularistic, kin and status-based moral foundations, and these latter effects were cued by our prime. Given the association with lower relational mobility and local fusion, it seems the little tradition accompanies a smaller scale of cooperation, taking place at the level of interpersonal relationships, rather than a larger collectivity.

There are several ways to interpret the direction of causation between the two traditions and the dependent variables we have examined. One is that extended ingroup affiliation causes great tradition affiliation, while investment in interpersonal relationships drives little tradition affiliation. Relationally-mobile individuals may participate more in monastic institutions, while those with nationalistic or Buddhist-extremist views might more fervently favor religious forms promoted as ingroup doctrine. Meanwhile, many little tradition practices are oriented around material objectives such as helping kin; those more concerned with kin relationships may be more likely to resort to them. It could be that lower relational mobility leads to greater interpersonal investment, thus driving adherence to the little tradition as a way of nurturing such relationships.

A second interpretation is that great tradition participation drives affiliation to the extended ingroup, while little tradition participation increases investment in interpersonal relationships. That is, the more one participates in the former, the more one feels fused with the extended ingroup, cares about ingroup morality, believes in absolute rules, and becomes open to new relationships. The adoption of universal rules and clear markers of ingroup membership, or willingness to help ingroup members, may lead to increased relational mobility, by facilitating cooperation with strangers, based on common membership of, and loyalty to, the extended ingroup and its rules. Similarly, little tradition participation may drive local fusion, rule-particularistic morality, and low relational mobility. Associated rituals, often based around concerns and spirits of kin, neighbors, or villages (Christian, 1981), may encourage a sense of solidarity with local others. This orientation toward local, interpersonal loyalties may lead to increased rule-particularism, allowing the history of a relationship to take priority over universal rules. This in turn might decrease relational mobility, as individuals with rule-particularistic orientations may have less basis for cooperation with those outside their relationship network.

The causal arrows may also run in both directions: greater participation in the two traditions may make people both more group- or family-oriented, and these orientations in turn may lead to more fervent participation in great or little traditions, respectively. At any rate, our results suggest a complementarity in function between the two traditions. On one hand, the great tradition appears to correspond with group-orientation. On the other hand, the little tradition appears to correspond with relational and especially familial ties. But far from competing, these two dimensions are nearly orthogonal in Burma, suggesting a complementary, rather than a competitive relationship.

Cultural evolutionary dynamics may help explain this complementarity. Recall that little traditions have been variously portrayed as cognitively optimal, "wild," and "theologically incorrect." These labels stem from efforts to understand how people gravitate towards certain kinds of beliefs and practices when they can choose freely, without strong institutional pressures. While it may be tempting to assume that under these conditions, religionists will favor representations that are personally gratifying, for example, because they meet input conditions of evolved cognitive modules, this need not imply that wild religion results from purely selfish motivations. True, there is a focus on combating misfortune, but often the target of ritual or magical interventions is not oneself, but one's family. This focus on kin constitutes an important and ancient aspect of human cooperation, one that little traditions seem especially to foster. And one corollary of this commitment to family is hawkish protectionism of the interests of kith and kin and a lack of willingness to adopt more universalistic moral values.

By contrast, it seems great traditions might propagate themselves in part by inducing followers to divert resources toward cooperation with the extended ingroup, often in competition with other groups. Possible mechanisms facilitating this tendency to pull together in the face of outgroup threat include conditioning cooperation on past experience of us-versus-them or us-versus-nature competitions (Whitehouse et al., 2017), norm-tightening in response to ecological triggers such as natural disaster (Gelfand, 2018), or extreme reciprocity based on the logic that one's willingness to make sacrifices triggers such willingness in others when, as a consequence, everyone does better (Whitehouse, 2018). Great tradition claims on group loyalty could well have been the key to success in cultural group selection. But the ability to establish a pathway to strong categorical ties depends on identity markers capable of being stabilized across a large population of relative strangers. As discussed in the introduction, this would seem to require routinization of a doctrinal tradition's beliefs and practices that makes deviation readily detectable, and systems of top-down and peer-to-peer policing that make conformity enforceable. These innovations facilitate establishment of "theologically correct" orthodoxy via routinization and mnemonic supports (especially sacred texts). And they help explain how rule enforcement comes to be so closely associated with group loyalty in great traditions: both are indeed mutually reinforcing factors in creation of stable categorical ties.

If great and little traditions are indeed complementary tendencies within doctrinal religions, one providing an edge in between-group competition and the latter in competition between local relational networks, then we would expect the relative prominence of each to vary with the types of competition that are most prevalent in a given regional ecology. We would predict, for example, that in a society with high relational mobility, and where advancement of individual goals is pursued somewhat independently of obligations to extended kin, elders, and ancestors, doctrinal religions would be relatively unencumbered by little traditions, or that their tendency to resurface could be effectively suppressed by continuous vigilance and policing, coupled perhaps with periodic reformations. This arguably describes the situation in Northern European and North American Protestantism more or less accurately. By contrast, in East Asia, where heavy reliance on rice cultivation requires stable relational networks, extended kin groups and low relational mobility, we would predict a greater need for little traditions, with perhaps more variable reliance on great traditions as a principle of group alignment and cooperation (cf. Whitehouse, 2021). This is seemingly consonant with the idea of East Asian relational collectivism, itself historically supported by Confucian ancestor worship (Brewer & Chen, 2007; Khun Eng, 2006). Although this might not be a "little tradition" in the sense of a deviation from Confucian orthodoxy, it is striking that as it spread across East Asia, Buddhism reached an accommodation not only with local spirit worship, but with Confucian ancestor veneration and gift exchange rituals—although Buddhist doctrine has often been in tension with these practices. Arguably, then, Buddhist great traditions appear most successful when they allow for complementary forms of religiosity which sustain interpersonal cooperation—in this case, Confucianism along with Daoism and elements of local village religion.

Future research is needed to sharpen and extend predictions of this kind and test them in a more systematic way against cross-cultural and historical evidence. Would we find that the ecological niches for great and little traditions are those we have predicted if we were to sample a wider variety of countries in which the world religions and their offshoots are practiced? Likewise, are our predictions borne out by evidence on how great and little traditions have evolved over time, for instance in the history of Christianity in Europe or Islam in North Africa and the Middle East? What factors regulate levels of tolerance toward little traditions on the part of doctrinal authorities? When and why is incorporation preferred to suppression or exclusion? To what extent can purer versions of great and little traditions persist in isolation and under what conditions does one type of tradition tend to require the other? Such questions demand not only further experimental and correlational studies of the kind presented here but also statistical analysis of ethnographic data (e.g., Atkinson & Whitehouse, 2011), historical evidence (e.g., Whitehouse et al., 2021), and formal models to explore the precise evolutionary dynamics of interdependent traditions. Nevertheless,

our initial findings provide preliminary support for the broad and portentous theoretical claim that great and little traditions sustain forms of cooperation at different societal levels. The relative prevalence of each corresponds to an ecologically contingent trade-off between allocation of resources to cooperation at the ingroup level and at the level of interpersonal and familial ties.

## Conclusions

The theory we have presented here has important implications for the evolutionary dynamics of religion more generally. It has been argued that great traditions in the world's doctrinal religions evolved culturally as ways of facilitating cooperation among relative strangers in ever more complex social systems, for example, by promoting beliefs in moralizing supernatural enforcement (e.g., Norenzayan, 2013) or by establishing stable orthodoxies capable of unifying large populations (e.g., Whitehouse, 2004). One version of this idea, supported by evidence from world history, is that the first large scale religious organizations emphasized forms of cooperation based on hawkishness and extreme deference expressed in highly coercive forms of top-down domination (often expressive violently through the arbitrary exercise of power by divinized rulers and cruel practices such as human sacrifice) but that beyond a certain threshold of complexity, more ethical religions associated with the Axial Age evolved, emphasizing fairness and reciprocity and laying foundations for the great traditions of today's world religions (Mullins et al., 2018; Whitehouse et al., 2019). While there is much ongoing debate about whether, how, and when great traditions contributed to the rise of sociopolitical complexity (e.g., Whitehouse et al., 2021), many have tended to assume that religious beliefs proliferating *outside* organized doctrinal traditions, whether ancient or modern, are mere by-products of our evolved psychology, whose cooperative functions and moral salience are either minimal (Boyer, 2019) or largely unknown (McKay & Whitehouse, 2015). Such "cognitively optimal" religious beliefs (Whitehouse, 2004)—ranging from intuitive forms of mind-body dualism (e.g., Bering, 2006; Bloom, 2004; Hood, 2009) and promiscuous teleology (Evans & Lane, 2011; Kelemen, 1999) to minimally counterintuitive constructs such as weeping statues and flying witches (Boyer, 2001; Slone, 2005)—have been described as "wild", owing to their tendency to recur and spread like weeds in the interstices of more highly cultivated great traditions (Boyer, 2019).

Nevertheless, if the theory proposed in this paper is correct, then cognitively optimal religious beliefs and practices, including wild/ little traditions, may best be understood not so much as an evolutionary by-product but as a set of evolved adaptations for cooperation in small-scale relational and kin-based social groups. Long after cooperation begins to be organized at the level of translocal, categorical groups, individuals continue to rely for their daily subsistence on local cooperation with kin, neighbors and friends. We suggest that the interplay between great and little traditions reflects a tension between these two levels of cooperation: If the extended ingroup cedes too many resources to local networks, it will fail to thrive and expand; but if it fails to reach an accommodation with them, it risks cannibalizing the very social capital on which much of the survival and wellbeing of its followers depends. Thus, all over the world, we find great traditions inveighing against little traditions, while simultaneously turning a blind eye to some level of deviation in practice.

If we are correct, then there may be implications, too, for current geopolitical trends. Most obviously, the picture of great traditions as fostering extended ingroup cooperation helps clarify how nationalist and other political movements have mobilized them in Burma and elsewhere, including in fueling interethnic and interreligious conflict. It is telling that in the Burmese case, the post-independence state has repeatedly railed against the "superstition" of the little tradition (Smith, 1966); and in recent years, extreme nationalist groups within the sangha have begun to attack *nat* devotees, physically as well as verbally ("Monks in Myanmar," 2019). It may be that the little tradition is a threat to these groups not only because it represents ideological deviation, but because it constitutes competition for resources against the implicitly Buddhist nation-state.

Elsewhere too, the growth of religious fundamentalism, from Hinduism to Islam and Christianity, has seen the birth of myriad groups advocating austere and extreme devotion to their respective extended ingroups (Emerson & Hartman, 2006). If the theory presented here is correct, then we would expect that many of these groups may be self-limiting: The more they refuse to compromise with non-fundamentalist little traditions, the more they risk eroding crucial social capital amongst their followers. Thus, all else being equal, we should expect over the long run that they tend either to vanish or to become more tolerant of little traditions, and interpersonal loyalties. However, this tendency may depend on economic and ecological circumstances; in those societies, for example, where the payoffs to interpersonal cooperation are low—for example, because of poverty or the erosion of social capital through war, disaster, or post-industrial atomization—followers may be less negatively affected by demands to divert ever more resources toward a categorical group (Iannaccone, 1997).

While our findings are tentative, they suggest that even aspects of religion which seem unconcerned with cooperation may have cooperative implications. We should therefore take seriously the experience of the many adherents who feel a palpable tension between their allegiances to distinct dimensions of their own religion. The case of Theravada Buddhism, so central to past debates over the structure of religions, shows at least that evolutionary theorists cannot simply proceed by taking doctrinal religions at their word. When it comes to the role of religion in cultural evolution, little traditions also matter.

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## Data availability statement

The data that support the findings of this study are openly available from OSF at http://doi.org/10.17605/OSF.IO/GBDFP.

## Disclosure statement

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