

Tyvan *cher eezi* and the socioecological constraints of supernatural agents' minds

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The specific concerns attributed to supernatural agents vary considerably across populations. Evidence from evolutionary psychology suggests that commitment to supernatural agents facilitates prosocial behavior, and ecological studies have shown that costly rites can increase trust and cooperation. While there has been little systematic treatment of what the gods will know and care about, the contents of supernatural agents' minds seem to rest on a continuum between concerns of ritual behavior and concerns of interpersonal social behavior. In the Tyva Republic, many regions and resources are believed to possess protective "masters of the place" (*cher eezi*). Tyvans offer their appreciation for *cher eezi* at ritual cairns by offering food, prayer ties, and/or money. Survey and free-list data demonstrate that spirit-masters are neither omniscient nor concerned with morality, but are acutely concerned with ritual behavior and conservation practices. Moreover, their knowledge breadth is primarily limited to their domains of governance. Survey results nevertheless suggest that Tyvans show a tendency to attribute spirit-masters with knowledge of nearby moral behaviors even though these are not their readily listed concerns.

Keywords: omniscience; morality; ritual behavior; Tyva Republic; religious cognition; supernatural agents

1. Introduction

Humans are equipped with the ability to detect others' minds and to attribute mental states to people, objects, events, institutions, and places. Our "theory of mind" (Baron-Cohen, 1995; Premack & Woodruff, 1978) allows us to rapidly think about features of our world with what Dennett (1987, 1971) calls the "intentional stance." By attributing mental states to the objects of our world, we make sense of them. While there seems to be variation in "theory of mind" abilities between the sexes (Baron-Cohen, 2003, 2002) and between primates (although not without debate) (Call & Tomasello, 2008; Penn & Povinelli, 2007), one of the remarkable features of our species is the ability to explain events in terms of mental states. Cognitive scientists of religion currently treat the ability to attribute mental states to others as an essential feature of religious thought (Barrett, 2004; Guthrie, 1995, 1980). When we attribute beliefs, desires, and perceptions to the gods, we are particularly concerned with the objects of their mental states more than with their forms or features (Boyer, 2001, p. 144). However, remarkably little research has systematically explored how people view the *contents* of supernatural agents' (SNA) minds and whether or not

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there is variation in their attributed domains of knowledge and concern (see Bering, 2002; Boyer, 2002). While humans are concerned with SNAs' minds and this is made possible by a cognitive mechanism responsible for agency attribution, we lack data concerning what their minds contain and theory explaining this variation. Qualitative ethnographies regularly detail what people say about their gods' minds (e.g., the ancestor spirits do not want people to quarrel with each other (Lee, 2003, p. 129); the Nuer's god "sees and hears all that happens and he can be angry and can love" (Evans-Pritchard, 1956, p. 7)), but this research potentially suffers from a lack of generalizability in terms of population-level data and does not account for variance (see Schofield, 2002). Moreover, there is a dearth of quantitative data which would allow the development of models that could account for variation both within and across populations. The present work is a quantitative case study that aims to address these concerns.

2. Background

Globally, SNAs and the domains of knowledge and concern attributed to them seem to be situated on a continuum between two poles, each with a number of correlates (Purzycki & Sosis, in press). On one end of the continuum, non-omniscient SNAs from smaller populations with ethnic religious traditions appear to be primarily concerned with ritual behavior and resource management (e.g., Atran et al., 2002; Lansing, 2007; Lansing & Kremer, 1993). On the other end, omniscient deities from highly stratified state-societies with universalizing traditions seem to be primarily concerned with moral behaviors. In other words, SNAs in the latter contexts are concerned about interpersonal social behavior. Morality is defined here in the social psychological sense as "obligatory and generalizable norms, based on concepts of welfare (harm), fairness, and rights that regulate social relationships" (Smetana, 2006, p. 121). As such, moralizing SNAs are concerned with and even allegedly articulate the codes of conduct designed to maintain social harmony. These poles are the likely effects of population size and social complexity; agriculture facilitates economic specialization, and the more complex a society is, the more likely a population is to worship a high, moralizing deity (Johnson, 2005; Lahti, 2009; Sanderson, 2008; Stark, 2001; Swanson, 1960; Wallace, 1966). As such, these poles may reflect a significant shift in the way in which religious participation affects social behavior.

Boyer (2000, 2002) predicts that SNAs will be attributed with "socially strategic knowledge," that is, reputational knowledge which is relevant for mediating social relationships. These SNAs tend to possess perfect knowledge about human social affairs and mete out punishments to those who transgress prosocial moral codes. Recent evolutionary psychological research conducted in Western societies suggests that omniscient, moralizing SNAs are more likely to be culturally replicated because they curb anti-social behavior (Shariff & Norenzayan, 2007) and/or directly promote prosocial behavior (Bering & Johnson, 2005; Bering, McLeod & Shackelford, 2005; Johnson, 2005; Johnson & Bering, 2006; Norenzayan & Shariff, 2008; Rossano, 2007).

Behavioral ecologists have argued that religious behavior acts as a communicative signal, and because of this, religion evolved to overcome challenges of coordination and free-rider problems inherent in cooperation (Alcorta & Sosis, 2005; Bulbulia, 2004, 2009; Henrich, 2009; Irons 2001; Soler, 2008; Sosis, 2005; Sosis & Alcorta, 2003; Sosis & Bressler, 2003; Sosis, Kress & Boster, 2007). Religious rituals are difficult to

fake and easy to monitor in small populations, therefore they can minimize free-rider problems. Ritual costs signal solidarity to religious cohorts and limit uncommitted individuals from remaining or entering the community, thus fostering a sense of interpersonal trustworthiness among dedicated ritual performers. In environments where monitoring is possible, SNAs should be primarily concerned with ritual behavior. As populations grow, however, the ability to hold others accountable is weakened by population size, and therefore a population's religious content changes to counter the problems of religious diversity, anonymity, and accountability. It becomes too expensive for larger communities to monitor commitment. Omniscient deity concepts are attempts to curb the problems of increased social complexity, and their knowledge and concerns reflect this; if they know everything, they know when you are immoral even when other members of your society are not present.

Together, these approaches suggest that commitment to supernatural agents functions as a mediator of social behavior, and thus contributes to the evolution of human cooperation. The psychological approaches conclude that SNAs serve to "supervise" behaviors considered important in regular, sustained social contexts. Some religions, however, have SNAs which are not omniscient, moralizing, or punishing. Rather, these agents are acutely concerned with how they are treated and respected in the form of ritual behavior.

The Tyva Republic poses an interesting environment to investigate the contents of supernatural minds. Tyvan collective rituals are typically seasonal rites in designated places. Rural pastoral families are relatively distant from one another, and particular spirit-masters (*cher eezi*, literally "place master") govern specific places and resources. Previous ethnographic observations (Purzycki, 2010) suggest that Tyvan spirit-masters are acutely concerned with ritual behavior and resource preservation rather than interpersonal social behavior. Here I provide quantitative data that verify these conclusions. Specifically, the present study was designed to establish: (a) what the concerns of spirit-masters are, (b) whether or not they are omniscient, (c) if they are indeed not readily attributed with concern for interpersonal social behaviors, and if this is the case, whether or not (d) Tyvans' responses to questions about spirit-masters' concerns would gravitate more toward moral behaviors than non-moral behaviors.

3. Religion in the Tyva Republic

Just north of western Mongolia, Tyva has a number of ecologies and cultural groups. The Todzha district is home to reindeer herders, while residents of the central steppe and western taiga regions subsist primarily on sheep, goat, and cattle herding. Roughly half of the 305,000 residents of Tyva live in the two major cities (Kyzyl and Ak-Dovurak) and the other half live in small villages and/or seasonal yurt encampments (*aal*). These *aal* traditionally had migration routes of their own (Vainshtein, 1980, p. 84), but have undergone a number of significant changes owing to the sedentarization policies of the Soviet Union and the relatively recent privatization of land (Donahoe, 2002). Currently, rural Tyvan households are typically composed of nuclear families in small clusters of kin (Humphrey & Sneath, 1999, p. 154). In addition to passing others' campsites during travel and visiting with neighbors, residents (often including non-kin) in some areas typically gather during seasonal collective rites.

As in much of Inner Asia, Tyvans have been part of larger state systems for centuries, and these systems have undoubtedly changed their pastoral economies and surely altered religious systems over the years (Bawden, 1958; D'iakonova, 2001; Halemba, 2006, pp. 168–170; Kuzhuget, 2003; 2006, pp. 85–90; Potapov, 1969, pp. 360–363; Vreeland, 1953, pp. 175–180, 256–258). These changes, however, are not unidirectional. For instance, while Buddhism has flourished since it was introduced to Tyva around CE 553 by Muhan-Khagan, it has effectively merged with the local animist–shamanist–totemist tradition (Abaev, 2010, p. 17; Khomushku, 2008). Lamas regularly conduct rites typically considered part of the shamanic repertoire of services (e.g., requesting permission from a local spirit-master to build a domicile on its land). While atheism was enforced during the Soviet years with systematic religious persecution, recently there has been a popular resurgence in “traditional” cultural forms and religious expression and a burgeoning indigenous literature industry documenting and/or representing Tyvan cultural traditions (e.g., Arapchor & Orus-ool, 1995; Kenin-Lopsan, 2006; Kuzhuget, 2006; Süzükei, 2007).

3.1. Tyvan cher eezi

In the Tyvan worldview, there is a multitude of supernatural agents, some of whom seem to be attributed with omniscience and moral concern. The mythological *Erlik-Khan*, for instance, is the master of the “underworld” and can be malevolent and send his minions to wreak havoc on the lives of the sinful (Katanov, 1907, cited in Stépanoff, 2007, pp. 208, 386; Khomusku, 2008; Van Deusen, 2004). It is not clear, however, how significant a role such figures play in active religious thought and practice among laypeople. Regarding the earthly plane, various regions and features of the natural environment are associated with a variety of supernatural agents, *cher eezi*,¹ literally “masters of the place.” Tyvans make distinctions between masters or regions: there are, for example, masters of natural springs (*arzhaan eezi*), fire-masters (*ot eezi*), and masters of other regions and resources. A shaman I interviewed emphasized that these *cher eezi* should not be thought of as “spirits of the forest,” for example, but emphasized their status as *masters*: their roles are protective and people utilize *their* resources. *Cher eezi*'s forms range from marmots and birds to bulls, deer, and people. Elsewhere (Purzycki, 2010), I found that there was little consistency among Tyvans regarding whether or not *cher eezi* were omniscient. The majority of interviewees attributed them only with knowledge of what transpires in their domains of governance. Moreover, most herders with whom I spoke reported stories of the easy deception of spirit-masters. In addition, *cher eezi* were not viewed as moralistic, and a number of Tyvans resisted such attributions (see below). Spirit-masters were reported to be acutely concerned with human devotional practices and the vitality of their areas or resources of mastery, but not concerned with interpersonal human behavior. Importantly, place-masters are quasi-corporeal insofar as they are spirit-like, but they can often take concrete forms and interact with people as well. As such, they are virtually ever-present and localized while simultaneously beyond the constraints of human conceptions of time and space.

3.2. Ritual exchange with cher eezi

Ritualized exchange has long been observed by anthropologists (e.g., Malinowski, 1932; Mauss, 1967), but it is just beginning to be addressed within the milieu of the

cognitive science of religion. Cohen's (2007) work among Brazilian spirit mediums, for instance, details a "three-way exchange relationship" between clients, mediums, and spirits (p. 163). These relationships tap into moral and social cognition and as such may mediate individuals' expectations and perceptions of ritual efficacy (Barrett, 2002; Barrett & Lawson, 2001). Ritualized exchange plays a significant role in the religious lives of Tyvans. Tyva's landscape is peppered with *ovaa* which, depending on their locations, consist of large piles of stones or tree branches. Tyvans pray at these cairns for good fortune that is bestowed by the master of the region or resource. The ethnographic literature of Inner Asia describes *ovaa* and their concomitant practices as having multiple cultural functions including boundary or "orientation marks for travelers"² (Humphrey, 1995, p. 146), places for rituals where only family can participate (Birtalan, 1998; Djakonova, 1977), large-scale seasonal public rituals (Humphrey, 1993, p. 14), and demonstrations of solidarity and strength (Purzycki, 2010; Sneath, 1992). While there is significant variation in cairn practices and beliefs, the *ovaa* complex is a common element to Inner Asia's religious traditions (Bawden, 1958; Halemba, 2006, pp. 168–170; Hamayon, 1990, pp. 717–719; Sneath, 1992; Vreeland, 1953, pp. 175–180, 256–258).

There are a number of ways one engages with the *cher eezi*, both individually and collectively. The collective *ovaa* sanctification (*ovaa dagyyry*) is conducted seasonally or annually at an *ovaa*. While this rite was traditionally a private, male-only affair, these rites are now often conducted for public participation for those in regional districts and extended families. Potapov (1969) observed that people from nearby *aal* and villages would come and bring offerings of animals and their various products (p. 360). The *ovaa dagyyry* rites are typically followed by social activities such as feasting, wrestling, and horse racing. Individualized rites at *ovaa* (*art dagyyry* or "mountain pass sanctification") are similar insofar as one makes offerings to the *cher eezi* in the form of food, tobacco, money, a song (see Levin, 2006; Pegg, 2001), and/or prayer ties (*chalama*). Typically, one walks around the perimeter of the *ovaa* three times while thinking only good thoughts; negative thoughts excite the spirit-master. One is not obligated to make offerings at every *ovaa*, however. If one is on a long journey via car, for instance, stopping at each *ovaa* along the way is impractical. In rural areas, however, one does not necessarily venture too far from one's campsite and therefore may rarely pass by an *ovaa* unless migrating or traveling with herds. Moreover, if one were to stop at an *ovaa* and not give an offering, nothing would necessarily come of it, since spirit-masters do not punish people for transgressions beyond egregious acts of resource destruction (see Purzycki, 2010 for further discussion). *Ovaa* on high mountain peaks allow individuals to see from a distance whether or not people participate in making offerings at *ovaa* when entering particular regions. It does not, however, necessarily allow observers to know who exactly is making an offering (or not), but traditional *ovaa dagyyry* rites presumably would as people bring offerings and sacrificial animals to the *ovaa*.

If SNAs primarily function to curb antisocial behavior, then Tyvans should readily and freely report that spirit-masters are angered by immorality. However, if SNAs function in non-universalizing religious contexts to motivate religious ritual, then Tyvans ought to attribute acute concerns for ritual behavior to *cher eezi*, significantly more so than moral behaviors. Attributions of knowledge and concern for moral behaviors to *cher eezi*, however, if revealed to be significant relative to nonmoral behavior, would indeed suggest a bias towards attributing SNAs with

knowledge of and concern for prosocial behavior even though they may not function to curb antisocial behavior.

4. Study

4.1. Participants

Participants ($N = 66$; 39 women; age $M = 37.98$, $SD = 12.99$; four did not report age) were interviewed in the capital city of Kyzyl between the months of March and May of 2010. Only ethnic Tyvans who could speak and read Tyvan well were interviewed. All participants were non-specialists (i.e., not shamans or lamas). Survey questions were translated into Tyvan, back-translated to English, and edited for consistency. All data were collected using written surveys that were completed on the streets, and in various schools, clinics, and other institutions throughout Kyzyl with the help of assistants. Surveys took around 20–30 minutes to complete.

4.2. Methods

The entire procedure consisted of a number of tasks including answering basic demographic questions, questions about religiosity, and basic questions about the *cher eezi*. After answering these initial questions, participants were asked to free-list up to 15 items of five domains: (1) what makes a good and (2) bad Tyvan person, (3) what makes the spirit-masters happy, (4) what makes them angry, and (5) spirit-masters and their domain of mastery. Participants were not able to modify free-lists after viewing the survey. One of the free-list tasks was to list as many *cher eezi* and their places/resources of mastery as participants could. These data were analyzed using *chi-square* in order to determine whether or not there existed a pattern of attributed spirit-master type and resource mastery. Items that were repeated were not included in the analysis. A clear pattern emerged in terms of the spirit-master type and the resource of governance: spirit-masters of wider regions (districts, mountains, mountain passes, forests) were significantly more likely to be human-like spirits than spirit-masters of discrete resources (lakes, natural springs, and trees), which were more likely to be in animal form ($n = 27$, $\chi^2(2) = 21.77$, $p < 0.001$).

As this pattern emerged, it was important to see if spirit-master type had any effects on knowledge/concern attribution and control for these effects if necessary. In order to test for effects of master type (human vs animal) on attributions of omniscience and morality, there were two variants of the survey: the introduction of one variant ($n = 37$) read as follows: “The *cher eezi* of Bayan-Kol is a beautiful woman on a horse. Imagine that we are at her *ovaa*. Please answer the following questions as though we were there. Please circle your answers below.” The second variant’s ($n = 29$) introduction was similar, but used a different spirit-master and resource which is located in another district: “Adargan *Arzhaan*’s (in the Övür district) *cher eezi* is a small marmot” These examples were taken from previous interviews (Purzycki, 2010).

The survey treatments consisted of 39 questions: 10 moral items done in proximity to the *ovaa* (e.g., Does the *cher eezi* of this place know if I stole from another person here?), 10 moral items conducted at a significant distance from the *ovaa* (e.g., . . . if I lied to someone when I am at home in America?), 10 non-moral items knowable at the *ovaa* (e.g., . . . that my eyes are blue?), and nine non-moral items only knowable distantly from the *ovaa* (e.g., . . . that the car parked at my house

is orange?). Of the moral items, half were positive and half were negative social behaviors. Participants' answers were converted to a scale of 2 to -2: "Of course" (2), "Probably" (1), "I don't know" (0), "I doubt it" (-1), and "No" (-2). Each item was accompanied with a sub-question of whether or not they *cared* about such information. Except for the factor analysis, participants' mean scores in each category were used for analyses. These scales were designed in order to determine whether or not *cher eezi* were omniscient and/or moralistic. The scale items were designed to determine whether or not Tyvans would moralize *cher eezi*, but the free-list items remained unalterable. Again, these items were answered after the free-lists which were not revisable upon completion, allowing more salient items relevant to spirit-masters to be listed prior to answering the survey questions (see Romney & D'Andrade, 1964).

4.3. Results

Free-list data from 21 individuals confirm previous ethnographic results (Purzycki, 2010), namely, that *cher eezi* are acutely concerned with ritual behavior and resource preservation. Table 1 shows the range of responses regarding what makes the masters happy and each category's listed average per respondent. All behaviors other than moral behaviors could be construed as ritual behaviors as they are all directed towards the spirit-master, rather than other people. On average, ritual behaviors were listed more frequently than conservation behaviors, asking permission for resource exploitation, remaining quiet, moral behaviors, and believing in the *cher eezi*. If, however, we combine all behaviors directed towards spirit-masters and all those behaviors which are interpersonal, behaviors directed toward *cher eezi* are on average listed significantly more often than interpersonal behaviors, $t(20) = 9.31$, Bonferroni adj. $p < 0.001$.

Regarding what makes spirit-masters angry (Table 2), the majority of listed concerns referred to overexploitation and pollution of resources. The moral behaviors which they become angry about range from "not respecting one's ancestors," "swearing and fighting," "theft," and "murder," etc. Moral violations, not participating in or violating ritual protocol, drinking alcohol,³ making loud noises, and a lack of belief were all listed relatively sporadically. Nevertheless, again there is a clear distinction between behaviors directed towards the *cher eezi* and towards people; grouping listed behaviors into those directed towards the spirit-masters and their domain of mastery and those directed towards people demonstrates that what makes the spirit-masters angry are violations of relationships between them and people and not interpersonal moral violations, $t(20) = 2.40$, Bonferroni adj. $p = 0.03$. While these ecological and religious behaviors may indeed be ultimately socially strategic, the question arises as to whether or not the traditional social units of a pastoral economy allow for the monitoring of such

Table 1. Summary of responses to what makes the *cher eezi* happy?

	Ritual	Conserve	Permission	Quiet	Moral	Belief	Total	Ritual	Moral
<i>n</i>	47	14	5	3	1	1	71	70	1
<i>M</i> listed	2.24	0.67	0.24	0.14	0.05	0.05	3.38	3.33	0.05
<i>SD</i>	1.22	0.73	0.54	0.36	0.22	0.22	1.72	1.65	0.22
% total	0.66	0.20	0.07	0.04	0.01	0.01	1.00	0.99	0.01

Table 2. Summary of responses to what makes the *cher eezi* angry?

	Conserve	Moral	Ritual	Drinking	Noise	Belief	Total	Ritual	Moral
<i>n</i>	32	16	12	9	5	5	79	54	25
<i>M</i> listed	1.52	0.76	0.57	0.43	0.24	0.24	7.52	2.57	1.19
<i>SD</i>	1.29	1.26	1.12	0.51	0.44	0.54	4.42	1.99	1.40
% total	0.41	0.20	0.15	0.11	0.06	0.06	1.00	0.68	0.32

behavior and whether or not there are actual sanctions against those who engage in them (e.g., if Mergen hunts too much, he may be ostracized; if Onzagai does not offer food to the *cher eezi*, her reputation may be on the line, etc.). This point is addressed below. In summary, what primarily concerns *cher eezi* are the ritual behaviors directed towards them and violations of their resources of mastery. These were listed significantly more frequently and consistently than moral behaviors.⁴

A principle components analysis using Varimax rotation solving for three factors demonstrates that the knowledge items do not constitute a single variable and as such *cher eezi* are not omniscient. Presumably, results derived by adherents to the Abrahamic traditions would, in fact, constitute a single variable as the Abrahamic god is represented as knowing everything. If two factors of moral items vs non-moral items emerged from the data and these two factors were negatively correlated, then this would suggest that *cher eezi* only know moral behaviors. Likewise, if two factors of proximate vs distant moral items emerged, then Tyvans would be answering exclusively in terms of the proximity of an item to the spirit-masters' domain of mastery. However, these items clustered in three domains (Figure 1): (1) moral behaviors conducted at the *ovaa* ($\alpha = 0.95$, $M = 1.09$, $SD = 0.81$), (2) moral behaviors conducted away from the *ovaa* ($\alpha = 0.94$, $M = 0.21$, $SD = 1.09$), and (3) all non-moral items ($\alpha = 0.98$; $M = -0.59$, $SD = 1.14$). Tyvans clearly make distinctions between domains of knowledge that *cher eezi* have in two dimensions: proximity of act to the *ovaa* and whether or not the act is moral. All sub-questions of whether or not the *cher eezi* care about such items loaded in the same fashion (Table 3).

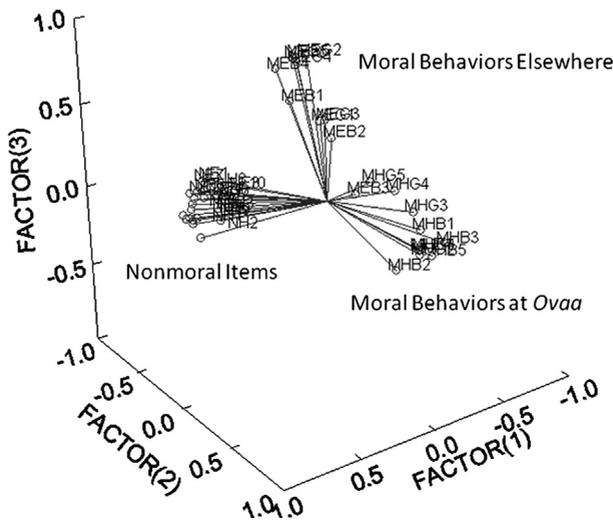


Figure 1. Factor loadings plot of *cher eezi*'s knowledge items.

Table 3. Summary of rotated factor analysis results.

		Nonmoral items	Moral at <i>ovaa</i>	Moral elsewhere
Knowledge	Eigenvalues	18.36	7.40	3.87
	% of variance	38.96	19.29	17.73
	α	0.98	0.95	0.94
Concern	Eigenvalues	17.58	8.19	3.12
	% of variance	37.68	19.81	16.59
	α	0.98	0.95	0.94

ANOVAs (Analysis of Variance) demonstrate that *cher eezi* type (woman vs marmot) did not have significant effects on attributed proximate moral knowledge ($F(1, 64) = 0.02, p = 0.89$), concern ($F(1, 64) = 0.02, p = 0.89$), on distant moral knowledge ($F(1, 64) = 0.28, p = 0.60$) or concern ($F(1, 64) = 0.38, p = 0.54$). This suggests that even though type of resource is correlated with type of spirit-master, the actual *form* of SNAs does not have an effect on Tyvan conceptions of moralization or breadth of knowledge. Beyond the scope of the present research report, the question of why this pattern exists remains. All results below, therefore, are derived from the two pooled treatments.

If there is a general tendency to attribute moral concern and knowledge to SNAs, then moral items should rate significantly higher than the non-moral items. In addition, if proximity to the *ovaa* plays a significant role in how Tyvans conceive of *cher eezi's* access to information, this should also affect responses insofar as distant moral acts will be both less known and less cared about than proximate acts. There were significant effects for proximity of moral act on masters' knowledge ($F(1, 130) = 27.67, p < 0.001$) and concern ($F(1, 130) = 14.69, p < 0.001$); *cher eezi* are reported to know and care more about local moral acts than distant ones. Moreover, they are characterized as undoubtedly more knowledgeable ($F(1, 262) = 70.18, p < 0.001$) and concerned ($F(1, 262) = 42.04, p < 0.001$) about moral behaviors than nonmoral items. Spirit-masters were also reported to be significantly more knowledgeable of bad behaviors than good behaviors conducted at their place of mastery ($t(65) = 3.06$, Bonferroni's adjusted $p = 0.02$) but there was no significant difference between bad and good distant moral behaviors, $t(64) = -0.87, p = 0.39$ (Table 4). In terms of their concerns, they were not concerned with proximate bad or good behaviors any differently, although this effect does border on significance, $t(65) = 1.89, p = 0.06$. As for distant bad or good, there are no significant differences in attributed concern, $t(64) = -1.03, p = 0.31$. Importantly, they were also reported to be significantly more knowledgeable of local moral behaviors than concerned with them, $t(65) = 2.93$, Bonferroni's adjusted $p < 0.01$. There was no significant difference between *cher eezi's* concern and knowledge of distant moral behaviors, $t(65) = -1.39$, Bonferroni's adjusted $p = 0.17$.

Table 4. Grand means and standard deviations of question type ratings.

		Bad	Good	Moral	Nonmoral
At <i>ovaa</i>	Knowledge	1.20(0.87)	0.97(0.87)	1.09(0.81)	-0.54(1.27)
	Concern	0.87(0.73)	0.73(1.00)	0.81(0.96)	-0.45(1.23)
Distant	Knowledge	0.17(1.12)	0.21(1.15)	0.21(1.09)	-0.51(1.16)
	Concern	0.09(1.13)	0.14(1.09)	0.13(1.07)	-0.41(1.15)

In one question, participants were asked about spirit-masters' knowledge breadth and provided a number of options. In terms of knowledge breadth, 19 (28.8%) participants claimed that *cher eezi* know everything that happens in the world, yet 37 (56.1%) responded that they only know what happens in their area of governance. Three (4.5%) claimed that spirit-masters know everything that happens in Tyva whereas 4 (6.1%) suggested that spirit-masters only know what happens to themselves and 3 did not answer the question and no one filled in a response to the "other" option. If there is a relationship between omniscience and concern for morality, then attributed breadth of knowledge should predict concern for moral behaviors. Indeed, attributed breadth of knowledge predicts knowledge ($F(3, 57) = 4.27, p = 0.001$) and concern ($F(3, 57) = 4.97, p < 0.01$) for distant moral behaviors. While tentative given the small sample size, this finding is consistent with previous findings of the positive relationship between omniscience and moral concern across populations (Johnson, 2005; Lahti, 2009; Sanderson, 2008; Stark, 2001; Swanson, 1960).

5. Discussion

Most of the participants did not readily free-list moral concerns to the *cher eezi*. Yet, in the context of answering survey questions, there emerges a clear tendency towards moralizing them relative to nonmoral knowledge and concern as if participants' moral reasoning "pulls" answers toward a positive response. Nevertheless, this is clearly mediated by the spatial relationship between the item and the domain of the spirit-master. This is consistent with the idea that SNAs function to mediate social behavior. The results, however, clearly show that *cher eezi* are attributed with more knowledge than concern. Moreover, they are not omniscient; their attributions of moral knowledge and concern are primarily local. This is consistent with the idea that there may indeed be a cognitive bias towards moralizing SNAs even though in some contexts they may function to facilitate ritual behavior (or nothing at all). As we do see cross-cultural variation in the forms of SNAs, their attributed breadth of knowledge, and what they seem to care about, this variation may reflect a particular fluidity in *specific* mental state attribution. If this is correct, even though there may be a pan-human bias to moralize SNAs – even when moral behavior is not among their readily stated concerns – such a bias can be overridden by other concerns. Just as people will attribute qualities (e.g., ignorance, physical bodies) to their deities which are not their doctrinal, reflective beliefs, Tyvans do not regularly moralize these spirit-masters, but their responses certainly lean towards attributing them with knowledge and concern of moral behavior relative to non-moral information. Indeed, a number of Tyvans explicitly stated that the moral/non-moral questions were "not how Tyvan people think" as though these questions were about things which were irrelevant to the *cher eezi*. As noted elsewhere (Purzycki, 2010), when asked directly about whether or not spirit-masters care about the moral behaviors of people, some individuals resisted the question and stated that such a belief is particular to Christians and not Tyvans (p. 41, note 11). The point is that these items were not the typically attributed contents of *cher eezi*'s minds, but there does seem to be a trend toward doing so when framed relative to non-moral items.

According to Tyvans, *cher eezi* are certainly aware of and care about one's offerings, but their knowledge is largely considered to be limited to their resource or area of governance. This corresponds to the pastoral ecology insofar as one's grazing

land is limited to particular regions. Moreover, they do not punish if someone does not leave an offering; the free-lists suggest that they do not even become angry if one does not. Rather, spirit-masters require *sustained* devotional practice (Purzycki, 2010). *Cher eezi* seem only to actively punish when the resources they govern are overexploited and polluted and the free-list data are consistent with this conclusion. In terms of socially strategic knowledge, the only concern that the masters are attributed with that may be socially strategic is that of overconsumption – perhaps hunting too much, for example, is seen as greedy or impinging on the hunting potential of others. Then again, ritual participation (or lack thereof) may affect individuals' reputations as well. In the case of travelling, one pays their respects at *ovaa* for further luck. Attributing socially strategic information to the spirit-masters seems functionless if one is alone or with family. If an SNA knows everything and is particularly concerned with moral behavior, then this may motivate individuals to actually engage in prosocial behavior (or at least avoid antisocial behavior). *Cher eezi* do not seem to really care about the moral behaviors of people even though they are reported as knowing them. They care that people respect *them* and their places of mastery. The question then becomes whether or not these attributed concerns actually have effects on behavior.

As noted above, many *ovaa* are located on regularly used traveling routes. Even remarkably remote mountains had large stone cairns at their apex making ritual costs visible to anyone in the area. Presumably, when traveling with kin one need not religiously signal commitment to them, since they are more likely to readily engage in reciprocal behavior, which can increase one's inclusive fitness (Hamilton, 1964). However, if someone were tending his or her flock alone or with a few others, making offerings at *ovaa* and other resources may serve to signal commitment to non-kin who may be in the area, thus minimizing potential conflict. Twice when visiting a natural spring on the neighbors of my hosts' land in the northwestern taiga, we left money and prayer ribbons at the natural spring for the *arzhaan eezi*. While collecting water, the neighbors visited and we socialized, which suggests that there is indeed the ability to monitor payments when resources are exploited on others' land.

The fact that singing, tying colorful flags, and other ritual demonstrations are attractive also suggests that *ovaa* serve as place markers for signaling behavior insofar as one is willing to engage in risky and/or exploitative behavior in order to gain the favors of spiritual agents. Taking time to rest and pay one's respects to spirit-masters may convey to those using the land that one is willing to pay a price for safe passage or to exploit the resources which have a spirit-master. While the religious rationale is for the masters, the value may lie in maintaining safe relations with other people who *can* monitor whether or not costs were paid. As mountain passes are on the lands of other families, and masters are those governing these areas, paying a price demonstrates a commitment to land, *cher eezi*, and human occupants alike. As such, spirit-masters' concerns are largely for such offerings rather than moral behaviors, as offerings are potentially the most useful acts in such areas. Moreover, during seasonal collective rites at these *ovaa*, individuals bring offerings as a gesture of commitment to other individuals and in turn signal their own solidarity to other groups (Sneath, 1992). Nevertheless, Tyvans will readily but minimally moralize *cher eezi* when asked. This suggests that there is a moral bias in reasoning about SNAs' minds, but this bias may not influence their function which in traditional societies is primarily that of rationalizing religious behavior.

6. Conclusion

This research can ultimately address age-old anthropological concerns about pan-human universals and cultural particulars; as our databases expand, the relationships between the universals of religion and its particular expressions can be revealed. There are already hints of this at work, as researchers seem to regularly find that in a small and therefore more easily monitored social environment there may be no direct need for all-knowing, moralistic cosmic judges. What nevertheless unifies *cher eezi* and other SNAs is their regular concern for human behavior. Future cross-cultural research should determine whether the priming of SNAs affects prosociality differentially and whether or not urbanism has effects on moralizing and omniscience attribution. Moreover, systematic cross-cultural mapping of SNAs' mental contents will shed light on variation. This will allow us to further develop models and test hypotheses regarding how religion changes under particular conditions.

Ongoing studies in Tyva will test whether or not there is any relationship between engaging and not engaging in ritual behavior and perceptions of trustworthiness. If ritual participation is, in fact, able to be monitored, then those committed to religious mores should be deemed more trustworthy than those who are not so committed. Nomadic pastoralism in Tyva requires that individuals and their campsites travel near areas where other people reside. On these routes lie *ovaa* where weary travelers stop, rest, and pay their respects to resident spirit-masters. These guardians are neither omniscient, nor concerned with human conduct beyond treatment toward them and their places of mastery. Because paying respects comes in the form of a small price, and because these rituals may signal commitment to other people already in the area, *cher eezi* are acutely concerned with such behaviors. This suggests that socioecology imposes significant constraints on the readily attributed contents of supernatural agents' minds and the breadth of their knowledge and concern. Of course, further systematic cross-cultural research is required in order to assess these ideas.

Acknowledgements

This research was financially supported by the University of Connecticut's Department of Anthropology and Oxford University's Cognition, Religion and Theology Project which was funded by the John Templeton Foundation. Many thanks go to Tayana Arakchaa, Brian Donahoe, Dan Finkel, Xüler Kadyg-ool, Jordan Kiper, Jessica McCutcheon, Nadia Oorzhak, Anai-Xaak and Zhenya Saryglar, Rich Sosis, Paul Swartwout, Valentina Süzükei, Ayana Mongush and the Tyvan National Orchestra, the researchers at the Tyvan Institute for the Humanities, and to the many Tyvans who took the time and effort to be interviewed. I also thank the anonymous reviewers who provided critical feedback on an earlier draft of this paper.

Notes

1. Tyvan, a Turkic language, is a seven-case agglutinative language and has features of vowel and consonant harmony. As such, there are eight different ways to pluralize regular nouns. Plural for *er* (man) is *erler*, *kys* (girl), *kystar*, and so forth. As *cher eezi* literally means "master of the place," pluralizing it would be *cher eeleri* as "ee" (master) is pluralized (-ler) with a 3rd person possession marker (-i) that follows vowel and consonant harmony rules. I use these terms as group nouns in the singular for consistency, convenience, and euphoniousness.

2. I am skeptical that *ovaa* really serve as “orientation markers” as it presumes that travelers know the region less than they would without them. My experience with herders suggests that such landmarks would only be useful to those unfamiliar with the region rather than those who reside there.
3. Drinking alcohol excessively is a serious social problem in Tyva, and this may be a relatively recent concern attributed to spirit-masters.
4. These data could be considered the equivalent of the “theologically correct” (or in this case inconsistent) versions of the contents of *cher eezi*’s mental contents. As demonstrated by Barrett (1998) and others (Barrett & Keil, 1996; Slone, 2004), even though in many cases there are authoritative versions of SNAs, people often process them in ways that run counter to these versions. After-the-fact moralization of *cher eezi* would be an example of this, and also indicate that there are biases towards moralizing spirits who are not readily moralized.

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