

**Illuminator of the wide earth; Unbribable judge; Strong weapon of the Gods:**

**Intuitive ontology and divine epithets in Assyro-Babylonian religious texts**

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## **1. Introduction**

The basic contention of Pascal Boyer's "cognitive optimum theory" (as indeed of most current, cognitive theories of religion) is that at some fundamental level – the level of what might be called "everyday, empirical knowledge" (Sperber 1985: 83) - humans everywhere and at all times understand the world in much the same way. Despite the cultural variability of conceptual systems and worldviews, the basic categories of what kinds of things there are in the world, their structure and the causal principles governing their behaviour in fact to vary very little. In this sense, the human mind is endowed with what Boyer, following Keil (1979), calls an "intuitive ontology".

In principle, a workable theory anchored in insights into such a fundamental, panhuman level of cognitive representation carries great promise for the historical study of cultural material. By stipulating limits to cultural relativity, it may serve to constrain and inform our hermeneutical endeavours. The methodological and theoretical problems facing a cognitive study of ancient cultural material are numerous, however, and many of them boil down to the fact that Boyer's theory, and the Cognitive Science of Religion more generally, does not offer a principled way of working with textual, or even linguistic material. While it attaches great importance to the representation of superhuman agents and their actions, very little attention is paid to actual, linguistically encoded concepts of the divine as people speak them and write them down. This is something of a paradox, which needs to be overcome if a cognitive history of religions is to be a fruitful enterprise.

The following essay is a proposal for how that might be done. It uses the Assyro-Babylonian "sun god" Šamaš as a test case, and presents a way of subjecting a body of religious texts from antiquity to a quantitative analysis based on Cognitive Optimum Theory.<sup>1</sup>

## 2. Intuitive ontologies and cognitive optimum theory

Boyer's theory has been explained and summarized numerous times elsewhere, so there is little need to recount other than the bare essentials here (Barrett 2000; Boyer 1994, 1996, 2000a, 2000b, 2001: Chapter 2, 2002; Boyer and Ramble 2001; Lisdorf 2004). Boyer posits three broadly characterized cognitive systems or "domains of inference" that constrain and produce human, ontological assumptions: naïve physics, naïve biology and naïve psychology or "Theory of Mind". From these three he deduces five ontological domains: NATURAL OBJECT, ARTIFACT, PLANT, ANIMAL and PERSON (Boyer 2000b: 198). NATURAL OBJECTS and ARTIFACTS both fall within the domain of naïve physics; PLANTS and ANIMALS both fall within the domain of naïve biology; and what distinguishes PERSONS from things in the other domains is that their behaviour can be understood in psychological terms. The relation between the three inference domains is hierarchical and transitive, so that naïve physics generates expectations regarding PLANTS, ANIMALS and PERSONS also, while naïve biology applies to PERSONS as well as ANIMALS and PLANTS.

Now, Boyer's claim is that religious concepts, even though they obviously do not fall within the purview of "everyday, empirical knowledge", nevertheless draw on these

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<sup>1</sup> The present analysis is partly inspired by Laura Feldt (2007). I would like to thank her and Gabriel Levy for useful criticism in the process of preparing this manuscript.

same, ontological assumptions, but "tweak" them in particular ways (Boyer 2003: 119-20). On the one hand, religious concepts explicitly violate intuitive expectations, as when ghosts (a kind of PERSON) pass invisibly through walls. This makes them extraordinary and attention demanding. On the other hand, apart from these explicit violations, religious concepts are formed largely in accord with intuitive assumptions for their ontological domain, as when we tell stories about *whom* the ghost is, and the past events that gave *him* or *her* their  *motive* for returning to haunt the living. Concepts that strike the right balance between counterintuitive and intuitive properties - what Justin Barrett (2000) has dubbed "Minimally Counterintuitive" (MCI) concepts - constitute a "cognitive optimum"; they are easily remembered and transmitted, and thus more likely to become widespread in any given population. This, according to Boyer, explains the ubiquity, and some of the universal features of religious representations in all human cultures.

It follows from the logic of Boyers scheme that violations of intuitive ontological assumptions come in two forms: As *breaches* of the assumptions associated with an ontological domain or its superordinate domains, or as *transfers* from a subordinate domain. By squaring his five ontological domains with his three inference domains, Boyer arrives at a catalogue of 15 different templates of religious concepts (Boyer 2000a: 198f, 2002; Barrett 2000: 31; Atran and Norenzayan 2004: 721):

OBJECT + violation of physical expectation	ARTIFACT + violation of physical expectation	PLANT + violation of physical expectation	ANIMAL + violation of physical expectation	PERSON + violation of physical expectation
OBJECT + transfer of biological expectations	ARTIFACT + transfer of biological expectations	PLANT + violation of biological expectations	ANIMAL + violation of biological expectations	PERSON + violation of biological expectations
OBJECT + transfer of psychological expectations	ARTIFACT + transfer of psychological expectations	PLANT + transfer of psychological expectations	ANIMAL + transfer of psychological expectations	PERSON + violation of psychological expectations

A deductive scheme such as this should obviously not be taken too seriously, and it will not be necessary to go into its details here. For reasons that should become obvious below, only the two ontological categories of NATURAL OBJECT and PERSON, and the six templates for MCI-concepts based on them, are relevant to the present analysis.<sup>2</sup>

### 3. Assyro-Babylonian religion

The history of ancient Iraq is a turbulent one, with periods of peace alternating with periods of war and general chaos, and small city-states expanding into major empires, only to wither as others rose to power. From 1792 BCE, the year of King Hammurapis accession to the throne, until 539 BCE, when the entire area came under Persian rule,

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<sup>2</sup> The fundamental question is, where do these domains come from? They correspond roughly to the various headings under which cognitive psychologists subscribing to the theory of domain specificity have conducted their research (Hirschfeld and Gelman 1994a), but as Boyer has himself noted (Boyer and Barrett 2006): *The problem [...] is that the domains themselves are not construed in a principled way. In most studies of domain-specificity, the precise understanding of what are 'artifacts' (often oddly called 'objects') or 'animals' or 'living things' is left to the experimenter's commonsense, as if that was a privileged road to cognitive structure.* See also (Boyer and Barrett 2005). This weakness of the theory remains even if the empirical tests of its predictions are generally supportive (Boyer and Ramble 2001; Barrett and Nyhof 2001; Atran and Norenzayan 2004; Gonce et al. 2006; Lisdorf 2007).

the main epicentres of these political fluctuations were the city of Babylon, around 85 km south of present day Baghdad, and the city of Assur, about 250 km to the north of Baghdad, in what is today the Salah ad Din province. Important differences and developments notwithstanding, this period can be treated as a continuous whole, both linguistically and culturally (Oppenheim 1964; Roaf 1990).

Broadly speaking, two institutions dominated Assyro-Babylonian society: the royal palace and the temple. The separation of secular and religious power at the institutional level was accomplished in prehistoric times, but the king continued to have numerous religious duties. The authority of the king was delegated through an extended network of officials; one branch of this network was the legal system, in which the king was the last instance of appeal (Postgate 1992: ch. 7, 14 & 15).

Assyro-Babylonian religion was polytheistic; the number of divine names attested running into the thousands, but in most periods there were only about 10 prominent gods with a fairly stable hierarchy among them. In general terms, each god was attributed with particular identifying traits and a particular domain of relevance, although the picture is far from coherent. For example, the god Ea was described as cunning and wise, and was often called on in rituals of magic, while Šamaš usually was associated with justice and divination. Many gods were linked with natural phenomena, such as Nisaba, who was the god of grain and reed (and of writing, since reeds were used for writing cuneiform), Sin, the moon god, and Šamaš, whose name etymologically means "sun" (Lambert 1975; Black and Green 1992; Bottero 2001)

The temple cult centered on the daily offerings to the gods who inhabited the city temples in the form of anthropomorphic statues. The often massive amounts of food served were later redistributed among the temple staff, and thus formed an important part of the temple economy.

The extant sources fall within a wide variety of types and genres. There are inscriptions recounting the exploits of kings, and myths and literary works recounting those of gods and heroes. There are prayers and hymns addressed to gods, and elaborate ritual instructions used in the temples or in and around the royal court. There are incantations concerned with healing, exorcism and with averting future misfortune; many of these seem to have had the king as their patient, and may have served political purposes. The quantitatively largest group of texts deals with divination.

The texts come from all periods and places, though the bulk of them derive from excavations of the large royal library collection of the 6<sup>th</sup> and the 7<sup>th</sup> centuries BC. This does not necessarily mean that they were composed at that time, but rather that for the majority of texts we do not know the exact context in which they originated. There was no Assyro-Babylonian "canon", although certain texts were of course more popular and widely circulated than others.

#### 4. Divine epithets

"Divine epithets" can be defined as formulaic and conventionalized, linguistic expressions concerning superhuman agents. The following excerpt from a prayer put in the mouth of the Assyrian king Assurbanipal (668-627 b.c.) is a typical example of how epithets were used in Assyro-Babylonian religious texts. (Foster 2005: 734; Ebeling 1953)

O great lord who occupies an awe-inspiring dais in the pure heavens,  
 Golden tiara of the heavens, symbol of royalty,  
 O Šamaš, shepherd of the people, noble god,  
 Seer of the land, leader of the people,  
 Who guides the fugitive on his path,  
 O Šamaš, judge of heaven and earth

Who directs the heavenly gods.  
 who grants incense offerings to the great gods,  
 I, Assurbanipal, son of his god,  
 Call upon you in the pure heavens.

The first eight lines are made up entirely of epithets. The main argument for focusing on divine epithets in order to study conceptions of the divine is that they may give some indication of how the gods were conceptualized in everyday discourse. An epithet is the kind of thing you could say to or about a deity without anyone raising an eyebrow. If deities are indeed "culturally postulated superhuman agents", divine epithets are the actual cultural postulates being made regarding them.

The textual corpus used in the present analysis is delimited by the entries related to Šamaš in Knut Tallqvist's book "Akkadische Götterepitheta" (1938). In spite of being relatively old, Tallqvist's work is still cited as a reliable reference. The main problem with using it is of course that the number of relevant texts and textual fragments that have been excavated and published has at the very least doubled since 1938. In order to be conclusive, the following analysis should of course include this newer material, although it is unlikely that it would alter the overall pattern significantly. The following, then, should be seen as a pilot study.

Tallqvist cites 224 different texts from a wide variety of genres, containing 321 different epithets applied to the god Šamaš, distributed on 503 textual occurrences altogether. On the face of it, these figures seem to contradict the claim that divine epithets were conventionalized and oft-repeated. In fact, 59,8 % of all epithets occur only once, and as little as 1,5 % of all epithets occur more than ten times, the top scorer being "king of

heaven and earth", which occurs 21 times in the corpus (thus accounting for 4,2 % of all textual occurrences). This is hardly what would be expected, if epithets reflected widely held cultural concepts.

The figures are, however, somewhat misleading. Numerous epithets are synonyms or only slight grammatical variations on the same expression. There are, for example, five different epithets that literally mean "Illuminator of Darkness". More importantly, most epithets are simple permutations on a fairly limited repertoire of expressions, as the following examples illustrate:

*"Light of heaven and earth", "Lord of heaven and earth", "Judge of heaven and earth", "Supreme judge of heaven and earth", "King of heaven and earth", "Creator of heaven and earth"; "Light of the Gods", "Judge of the Gods", "Creator of God and Goddess"; "King of Heaven", "King of Justice", "king of Mankind", "King of the Land"; "Light of Above and Below", "Light of Heaven", "Light of the Earth", "Light of Heaven and Earth", "Light of the great Gods"*

And so on ad infinitum. Clearly, the linguistic variation is far greater than the variation at the conceptual level. This is exactly why an ontological and semantic analysis is needed.

### **5. The problem of representativity**

A note needs to be made regarding the problem of representativity. It is in the nature of archaeological evidence that what has or has not been excavated is largely a matter of chance. In the present analysis, the term "text" refers to individual textual compositions, rather than individual extant fragments or manuscripts. This means that texts that were copied particularly often do not weigh relatively more in the analysis than esoteric or rare material. By analogy, this amounts to giving the same weight to the lords' prayer and John 1:1-5 in a study of Christianity, even though the former is quite obviously

massively more salient than the latter. There is no safe way out of this predicament. The only thing that can be done is to test for systematic differences within the material, whether for instance certain textual genres, or texts from certain periods differ significantly from others. I have not been able to find such differences.<sup>3</sup> Epithets seem, in other words, to be coherently and evenly distributed across the corpus, which is a good argument that there are no strong biases in the material.

There are other, related problems in singling out divine epithets as our object of study. First of all, epithets are not the only way that deities are conceptualized in texts. Divine epithets are defined by certain grammatical and formal features, thus leaving out other expressions with the same or similar conceptual content. For example, the expression "the one who brings the day" is an epithet proper, while an expression such as "all humankind kneels at your rising" is not - although both expressions quite clearly conceptualize Šamaš in the same way: as the rising sun. Using divine epithets as an inroad to the study of god concepts is feasible only on the assumption that epithets are in fact a reliable index of how Šamaš is conceived in any given text. For present purposes, I will have to simply assert that this is the case. I am not aware of any texts where the conceptual content of the epithets used differs markedly from other elements in the text in which they appear. But clearly, this assertion could be criticized for being hermeneutically circular.

An even more difficult problem is that not all concepts are linguistically encoded. The context of an expression may implicitly suggest that a superhuman agent is to be

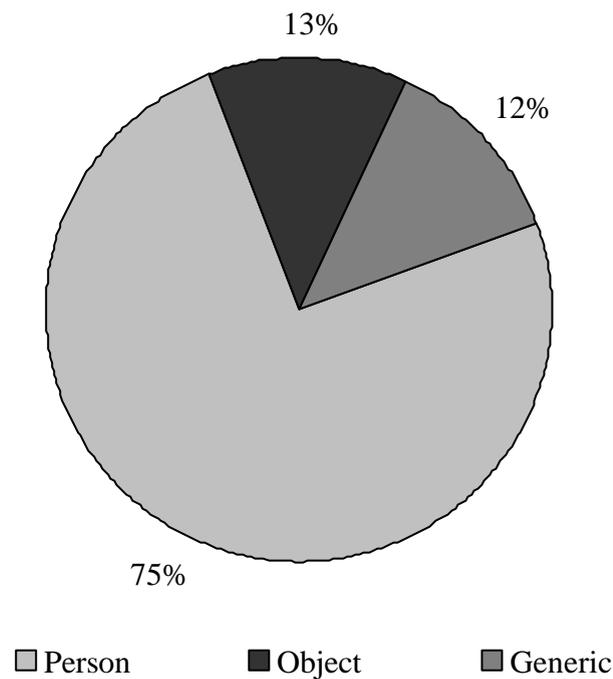
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<sup>3</sup> My initial hypothesis in this study was that different textual genres would display massive and systematic differences in the epithets used.

conceived in a certain way, even though it is not expressed in language. I will return to this problem below.

With these caveats and reservations in place, it is now time to turn to the actual analysis.

## 6. Distribution of epithets across ontological domains



*Figure 1 The distribution of divine epithets across basic ontological domains*

The distribution of epithets across ontological domains is shown in figure 1. The PERSON category contains epithets that are clearly anthropomorphic such as "great lord", "unbribable councillor", "warrio of the gods", "pre-eminent son" and so on, while the OBJECT category contains epithets that target the physical appearance and properties of the sun, such as "displayer of light", "who brings down feverish heat upon the earth at midday", "dressed in sparkles", "singular brilliance" and "radiant god".

The category that I have chosen to call "generic" expressions covers two kinds of epithets: 1) expressions that do not imply any ontological constraints on the object to which they are applied, and 2) expressions that might very well have done so, but which are opaque or ambiguous to modern scrutiny. Examples of the former are epithets such as "great", "exalted" and "all-powerful"; examples of the latter are "the one who reveals the evil-doer" and "lifegiver".

Unsurprisingly, the main ontological distinction that can be made is that between OBJECT and PERSON. There is in fact a small group of epithets that formally conceptualize Šamaš as an ARTEFACT – namely "Shield of the white temple", "mirror of the wide earth", "strong weapon of the Gods" and the one quoted above, "Golden tiara of heaven". I will argue, however, that these should be understood as metaphorical expressions (Cf Heimpel 1968). "Weapon" and "Shield" are metaphors of strength and protective power ("The white temple" being the names of two temples devoted to Šamaš, one in the city of Sippar and one in Larsa), "tiara" is a lyrical description of the luminance of the sun, while the word translated as "mirror" literally means something that is looked at or stared at - in other words, an object of prayer or devotion.

Consequently, these expressions are counted as "generic" in figure 1.<sup>4</sup>

Metaphorical language poses particular problems for a theory that focuses on ontological category violations, such as cognitive optimum theory. The theory of domain specificity would seem to be incompatible with the "everything is metaphor"-

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<sup>4</sup> To Assyriologists the most remarkable thing is perhaps that there is not a single epithet that conceptualizes Šamaš as an ANIMAL, animal imagery, such as "calf", "wild bull" and so on being otherwise extremely common in Mesopotamian religious language. See (Feldt 2007)

view so influential in certain corners of cognitive linguistics. The fact that tables have "legs" or that clocks have "faces" lures no-one, save perhaps the occasional preschooler, into thinking that they have intestines as well, or produce offspring that inherit their properties (Keil 1994: 236). Clearly, metaphorical projections are constrained by the ontological status of the target domain.<sup>5</sup> Not all "concept combinations" have ontological implications (Franks 2003).

We need, in other words, to maintain the distinction between metaphorical and literal language. This is not always easy in the case of religious concepts, as it is exactly the ontological status of the entities to which these concepts are applied that we are trying to figure out. So how can we know? In many instances the ontological implications of an expression is made obvious by its immediate context, but often all we can do is make an educated guess. For all that we know that might have been what the ancients themselves did as well; we cannot assume that the meaning of all of these expressions was transparent to the people using them.

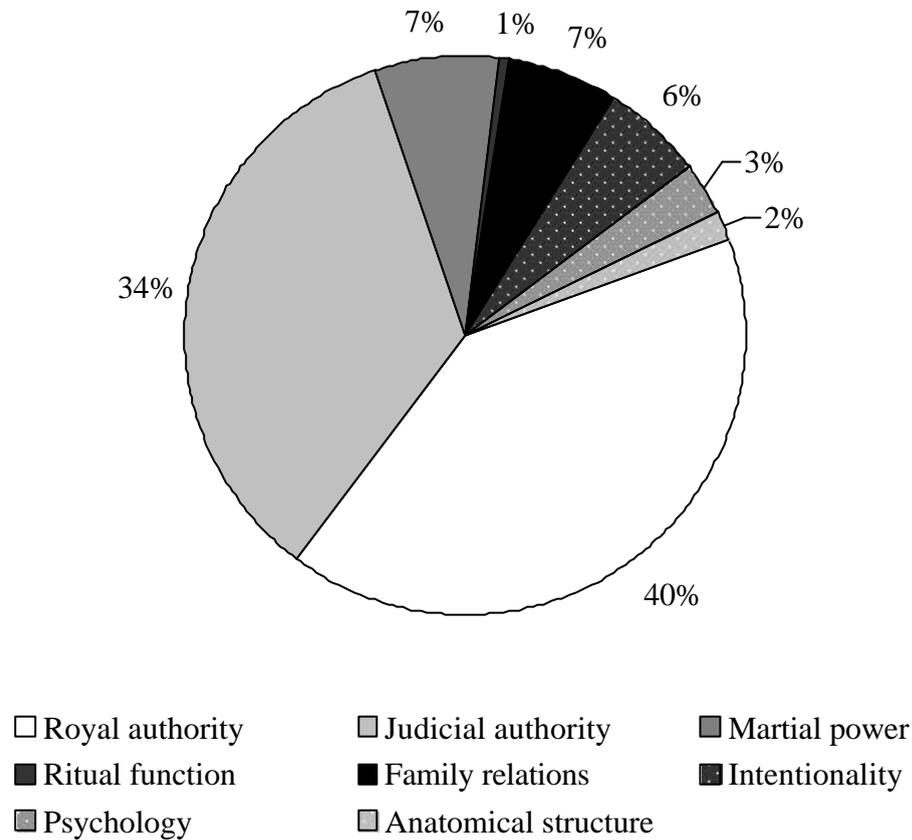
### **7. Conceptual components of the person ontology**

The fact that the PERSON ontology accounts for three quarters of all epithets is hardly surprising. According to Boyer's theory, PERSON concepts will generally be more likely to be culturally successful, because they activate Theory of Mind, and thus have a very high "inference potential" (Boyer 1996). Šamaš is, by all counts, a classic example of what is generally termed anthropomorphism, the projection of human attributes onto the nonhuman (Guthrie 1993; Boyer 1996). But as Boyer has rightly argued, such an account is too imprecise to be of any explanatory use (Boyer 1996: 89). We need to take

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<sup>5</sup> The failure to account for these types of constraints on metaphorical projections is arguably one of the major shortcomings of Conceptual Metaphor Theory (Murphy 1996; See also Hirschfeld and Gelman 1994b: 23; Keil 1979: 154).

a more detailed look at exactly *which* human features are projected onto the gods. This can be done by distinguishing the various semantic fields that comprise the PERSON ontology. I have identified eight such fields, as shown in figure 2.



*Figure 2 Distribution of epithets among the semantic fields comprising the PERSON ontology*

The field "Royal authority" covers such epithets as "King of heaven and earth", "Lord of truth and justice", "Leader of the people", "He whose command is not changed" and so on, while "Judicial authority" covers epithets like "Exalted judge of heaven and earth", "Unbribable judge", "Passer of verdicts", and "The one whose justice and decisions are quickly carried out". There is a considerable overlap between these two semantic fields, as well as between the royal field and the field of "Martial power" – indeed, epithets

such as "great warrior", "conqueror of enemy lands" and "hero" are often applied to human kings.

The minute field "Ritual function" contains only a couple of epithets that describe Šamaš as a "seer", that is, a divination priest. Šamaš played an important role in rituals of divination, although these epithets are not particularly prevalent in that textual genre. (Starr 1983).

Epithets in the category "Family relations", such as "Brother of Marduk" "Beloved of Aya" and "God who calms his father's heart" mainly address the relative status of various deities, while the target of an expression like "Father of the black-headed" is the relation between deities and men ("the black-headed" being a conventional expression for "humans", that is the inhabitants of Babylonian and Assyria).

The category "Intentionality" plays a role somewhat similar to that of the "generic" category in figure 1. It covers concepts that clearly imply intentional action, but do not otherwise seem to constrain their object more specifically. Examples are "decider of destinies" (accounting for 2 out of 6%), "releaser of curses" and "the one who guides the fugitive on his path". Quite clearly Šamaš *does* something here, but exactly how and in what capacity seems underdetermined by the expression itself.

By contrast, the epithets in the "Psychology" field entail more definite conceptions of mental states and perceptual processes, such as "wise", "who hears prayers", "who sees through peoples hearts" and "who loves the living".

Lastly, the domain "Anatomical structure" covers epithets such as "Great god with long arms", "Who has a lapis-coloured beard" and so on. Two things should be noted here: First, the fact that there are very few of these epithets does not necessarily mean that Šamaš was not generally conceived of as having anatomical structure, as anthropomorphic pictorial representations of deities were very common – indeed, the lapis-coloured beard ascribed to Šamaš probably is a description of the divine statue of

him that inhabited his temple. Second, the verb "treading" or "walking" should perhaps be interpreted as a metaphorical description of the movements of the sun across the sky, rather than as implying that Šamaš has anatomical structure (legs).

The most striking fact in this survey of the semantic fields falling under the PERSON ontology is of course that Royal, Juridical and Martial epithets together account for 81 % of all epithets. What characterizes these epithets is that they are inherently social: they posit a clear, social hierarchy, and attribute specific social roles and modes of operation to the deity. Their source domain is Assyro-Babylonian society, and they are not explicitly concerned with belief-desire psychology or other aspects of "the mind". Incidentally, royal and martial epithets are widely applied to most Assyro-Babylonian deities, while the judicial epithets are, if not exclusive to Šamaš, at least mostly applied to him (Tallqvist 1938; Jacobsen 1976: ch. 4).

It could be argued that the scarcity of explicitly psychological concepts poses a problem for Boyer's claim that "anthropologists know that the *only* feature of humans that is *always* projected onto supernatural beings is the mind" (Boyer 2001: 163), but it seems reasonable to assume that the naïve psychology is there, even if it is left tacit. While the projection of mind or agency does not necessarily entail the ascription of more specific human features such as anatomical structure, family relations or social roles, the projection of these features will "almost invariably" entail the projection of agency and psychological properties (Ibid.). A judge, a king or someone who has a beard is, by definition and by default, an intentional agent, a person.

### **8. Anthropomorphism and the distinctness of ontologies**

Part of the idea of anthropomorphism as a transfer of features from the human domain is that it is transferred *onto* some other, non-human domain. Šamaš, being a "sun god",

would seem to be a classic example of this: A natural phenomenon, onto which human features is projected.

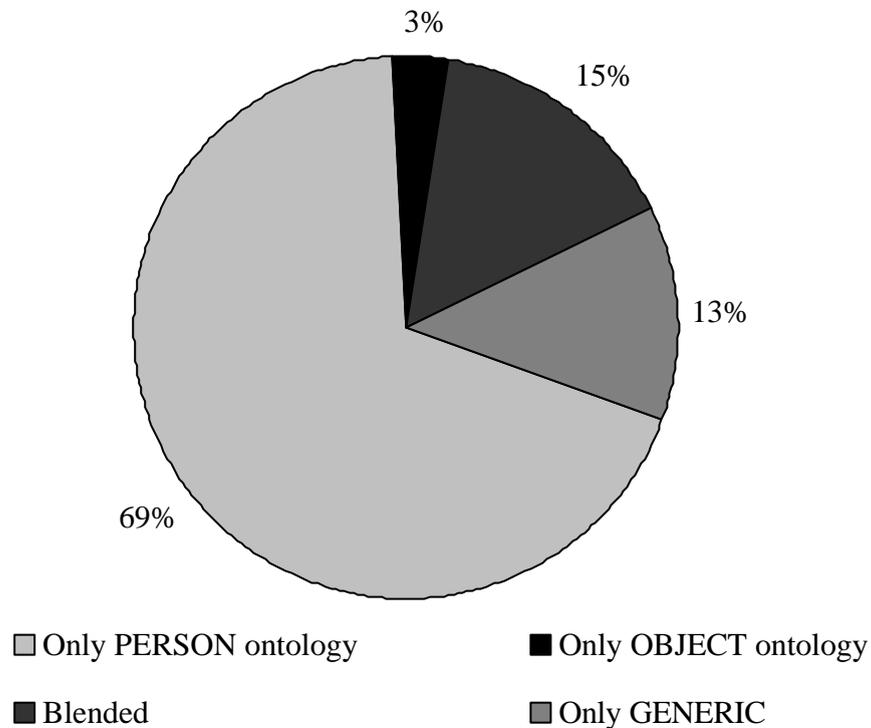
Boyer's explanation of the universality of this kind of transfer is twofold. First, as already explained, he claims that concepts that derive some of their structure from naïve psychology have a greater inference potential than other types of concepts; this goes both for concepts belonging to the PERSON ontology, and for transfers onto other types of concepts. Second, the transfer of features from the PERSON ontology onto the OBJECT ontology constitutes a breach with intuitive expectations which makes such projections salient, in the sense of attention-grabbing; they become, in other words, MCI-concepts. These two features converge to make anthropomorphic projections particularly likely candidates for successful cultural transmission.

If this account is at all adequate in the case of Šamaš, we should be able to describe at least a significant portion of the Assyro-Babylonian concepts of Šamaš along the following lines, utilizing a scheme developed by Boyer (Boyer 2000a: 101, 2000b: 197; Boyer and Ramble 2001: 537; Barrett 2000: 31)

1. a pointer to the OBJECT domain
2. an explicit representation of a *transfer* of properties from the PERSON domain
3. a link to (nonviolated) default expectations for the OBJECT domain.
4. additional encyclopedic information
5. a lexical label: Šamaš

We have already seen in figure one above that the number of "pointers" to the object domain is in fact rather small – 13 % of all epithets - the vast majority of epithets being explicit representations of the PERSON domain (and thus, in this scheme, belonging to point 2 and possibly 4). But of course, epithets do not occur in isolation; 65 % of the texts in the corpus contain two or more epithets. If intuitive expectations deriving from the OBJECT domain are indeed fundamental to how Šamaš is conceptualized, and if the many epithets from the PERSON domain represent transfers onto the OBJECT domain,

then we should expect epithets from the OBJECT domain 1) to occur, in most instances, alongside epithets from the PERSON domain and 2) to be fairly widely and evenly distributed across the corpus.



*Figure 3 The relative number of texts with epithets pointing to the PERSON ontology, to the OBJECT ontology, to both, or with only generic epithets.*

Figure three shows that while the first of these predictions is true, the second is clearly false. In this analysis, the texts are divided into four categories. The "PERSON" and "OBJECT" categories cover texts that contain one or more epithets that either belong to one of these ontologies exclusively, or a combination of these and generic epithets. The Blended category covers texts that contain two or more epithets from different ontological domains, while the generic category obviously covers texts with only generic epithets.

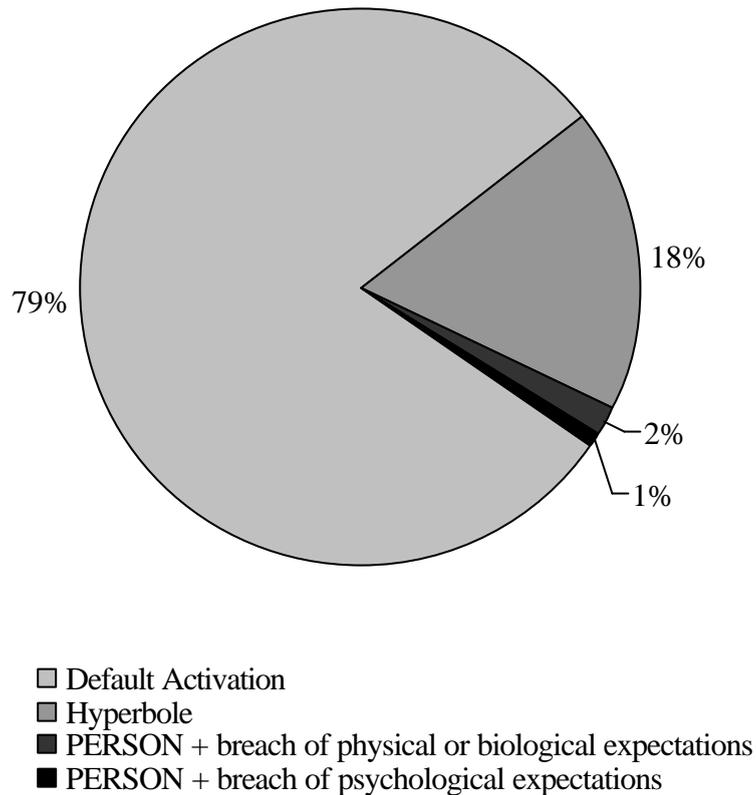
Of the 18 % of the corpus that contain epithets from the OBJECT domain, only 3 % contain epithets from that domain only. In so far as Šamaš is represented as an OBJECT, the ontological assumptions associated with this are usually followed by the explicit representation of features from the PERSON domain. Regarding the 3 % of text where there is no evident transfers from the PERSON domain, it could be argued that this group of texts is an artefact of a too narrow definition of anthropomorphism. Even if Šamaš is addressed in terms that highlight only the experiential features of the sun, the fact that Šamaš is addressed at all – named, praised, prayed to, posited as a participant in rituals, in short: deified - entails the ascription of intentional agency, even if it is not fleshed out in explicitly anthropomorphic or psychological language. Either way there is some, albeit limited, support for the thesis that concepts of Šamaš was based on Boyer's template of religious anthropomorphism, that is as an OBJECT with transfer of properties from the PERSON domain.

The fact remains, however, that 82 % of the texts in the corpus contain no explicit pointers to the OBJECT domain whatsoever, nor any links to nonviolated assumptions from that domain. In these texts, Šamaš is conceptualized singularly and exclusively as a PERSON. This must mean that Boyer's template of divine anthropomorphism does not apply to these texts. Unless, that is, there are some tacit pointers or links to the OBJECT domain. This may not be as hopelessly ad hoc as it sounds; it is in fact an interpretative principle that has dominated the study of Ancient Near Eastern religion since Max Müller (Westh 2001). For one thing, the deity's lexical label, "Šamaš", could be construed as a pointer to the OBJECT domain. After all, the name does mean "sun", at least etymologically. Further, the individual occurrence of a deity cannot of course be understood in complete isolation from how the deity is described elsewhere, and pointers to the OBJECT domain may be recurrent enough to constitute a salient feature of a culturally stable conception of this deity.

This is a somewhat speculative line of argument, however. If indeed intuitive, non-violated default expectations deriving from the OBJECT domain play a significant part in the great number of explicitly anthropomorphic texts, we are in need of an explanation why it does not show at all at the surface level – indeed, why there is apparently no “link to (nonviolated) default expectations for the OBJECT domain” in these texts (Boyer and Ramble 2001: 537). It is more reasonable then to simply accept that Šamaš was, in the vast majority of cases, construed as fundamentally humanlike. In other words, the data seem to fit very well with the part of Boyer’s argument that explains the prevalence of anthropomorphic projections with their superior inference potential, but not with the idea of MCI-concepts. Unless, that is, Šamaš, when construed as a PERSON, has some other counterintuitive properties.

### **9. Counterintuitive Concepts**

Figure 4 shows the relative frequency of intuitive and counterintuitive epithets in the corpus. The category "default activation" covers epithets with no evident counterintuitive properties, whether they point to the OBJECT or the PERSON ontology. Examples of epithets in based on the templates "PERSON + breach of physical or biological expectations" are "who makes the dead alive", "who destroys lands at the blink of an eye " and "Great lord who occupies a terrifying dais in the pure heaven". Examples of epithets based on the template "PERSON + breach of psychological expectations" are "who sees through the evil of the enemy", "who watches over everything" and "who hears prayers".



*Figure 4 Relative frequency of intuitive and counterintuitive epithets in the corpus*

As already noted, there are some interpretative difficulties here. Is an epithet such as “whose face is radiant” an OBJECT onto which a property from the PERSON domain (a face) has been projected, a PERSON that violates intuitive, physical expectations (people aren’t radiant, literally speaking) or is it a metaphorical expression? Similar questions are posed by epithets such as “who wanders the roads of heaven and earth” and so on.

A comment is needed on the distinction made between counterintuitiveness and what I have called hyperbole. A fairly large group of divine epithets pointing to the PERSON ontology are hyperbolic in the sense of extending the scale of concepts beyond the realistic or humanly possible: “Leader of *everything*”, “the exalted judge *who leads the upper and the lower lands*”, “ruler of *the living*”, “just shepherd *of humanity*” and so on.

As extraordinary these concepts are, they are hardly counterintuitive in the technical sense presupposed by Cognitive Optimum Theory. If anything, they are bizarre in the sense proposed by Barrett And Nyhoff (2001: 78). One could argue, however, that they *imply* counterintuitiveness; for example, "Leader of everything" might imply violations of psychological or physical assumptions such as sensory limitation or location in space. Again, there are interpretative difficulties – is "all-powerful" hyperbolic or counterintuitive? In any case, even if we grant hyperbolic expressions status as counterintuitive, the general picture is clear: MCI concepts are not all that prevalent in the corpus.

What does this entail for Cognitive Optimum Theory? One problem with the theory is that the scope of its predictions is not very specific. Does the theory entail that all religious concepts are minimally counterintuitive by definition, as some of Boyer's readers seem to think? (e.g. Pyysiäinen 2003). Does it predict that the distribution of intuitive and counterintuitive concepts in any tradition will converge toward the distribution in the recall experiments that have been made (Lisdorf 2004)? Does it entail, more modestly, that minimally counterintuitive concepts are generally a salient part of any religious system, although they need not be the only or even the dominant type? (Atran and Norenzayan 2004: 722). Or does it merely set out to explain the evolutionary paradox of why and how people entertain counterintuitive concepts at all, given a theoretical framework – modularity theory and evolutionary psychology – that otherwise has as its fundamental axiom that human cognition is governed by fairly tight

intuitive constraints?<sup>6</sup> The first two readings would seem to be contradicted by the data presented here, while the last two are of course entirely compatible with them.

A possible counter-argument to the claim that most concepts of Šamaš were not MCI-concepts could be that the counterintuitive properties of Šamaš were somehow tacit. The very idea of a "god" is counterintuitive enough as it is; adding further intuitive violations in the form of epithets would only clutter the cognitive system unnecessarily, and would reduce the inference potential and memorability of concepts. (Barrett 1999, 2004: 24f)

There are at least two problems with this argument. First, it is vulnerable to severe methodological criticism as it, in effect, turns the absence of evident counterintuitive properties in a god concept into proof that the god concept is counterintuitive. Second, part of the very logic of Cognitive Optimum Theory is that, in order for MCI concepts to be entertained and transmitted, the violations of intuitive expectations that make them salient must be *explicit*. (Boyer 1994: 407, 1998: 881, 2000b: 197; Boyer and Ramble 2001: 537; Sørensen 2007: 38). The whole point of the theory is that it is only the counterintuitive properties that need to be culturally transmitted; the intuitive properties are "filled" in automatically and unconsciously. A tacitly counterintuitive concept is, simply, a contradiction in terms.

A more reasonable argument would be that the counterintuitive properties of these religious concepts are not tacit per se - only they are not encoded in the texts, but

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<sup>6</sup> I take it for granted that we can rule out the absurdly strong reading of Boyer's theory, that MCI-concepts will always and invariably have a transmission advantage over intuitive concepts (Alles 2006: 331; Barrett 2004: 24)

suggested by their ritual, pragmatic or social context. Addressing a prayer to a god who is not manifestly present, or who is present in the form of a statue made of wood, metal and precious stones, is about as counterintuitive as can be. This is an argument with some strength but, again, it reduces the notions of counterintuitiveness and cognitive optimum to a priori assumptions, and commits us to some very specific ad-hoc assumptions regarding how these concepts were transmitted.

A more promising line of argument would be, I think, to simply accept what the data suggest, and try to find an explanation for it. The obvious place to look is the medium through which these concepts have become available to us: writing. Although the sources analyzed here to some extent reflect an oral tradition, they are written texts, meticulously reproduced by a class of educated specialists. This means that the filtering effects of memory and communication were largely bypassed, and thus there was no need for the god concepts to balance around the cognitive optimum (Sperber 1985: 86)

In most discussions of Cognitive Optimum Theory, MCI concepts are contrasted with explicitly and maximally counterintuitive, “theologically correct” concepts. The metarepresentational potential offered by writing and material culture is assumed to allow concepts to part ways with the intuitive, taking off into the spheres of theology, philosophy and science (Sperber *ibid.*; Barrett 1999: 336f; McCauley 2000). In the case of Assyro-Babylonian religion, these same mechanisms may have permitted god concepts to move in the other direction, away from the cognitive optimum toward the predominantly intuitive. There's nothing in the theory that precludes that possibility. The question is, why would this happen?

A likely candidate for an answer comes from figure 2 above. 75 % of all epithets in the PERSON domain, or about 61 % of all epithets in the corpus, have the political power structures of Assyro-Babylonian society as their source domain. The gods were, by and large, modelled on the king and his various officials. The prevalence of

anthropomorphic epithets in the corpus was, in other words, ideological (Benavides 1995; Binsbergen and Wiggerman 1999).

## 10. Conclusion

When discussing the results of the present analysis with a close friend and colleague, one of his objections to the conclusion that Šamaš had in fact only very few counterintuitive properties, was: "As epithets – right? I mean, looking at the broader myths and rituals Šamaš is minimally counterintuitive - right?"

It is an interesting question that reveals a lot about the methodological problems faced by a cognitive history of religions. It is no problem, of course, to find instances of minimally, and perhaps "not so minimally counterintuitive" concepts in Assyro-Babylonian, as in probably any religious tradition (Barrett 2004: 29f). The problem is, why single out exactly those properties as salient and characteristic of religious concepts? Without some principled way of delimiting what is and what is not relevant data, and at what level of generality "concepts" are to be identified, any historical analysis along the lines of Cognitive Optimum Theory will be subject to a massive confirmation bias.

The route chosen here to avoid this trap was to keep the conceptual analysis very close to the level of actual, linguistic encoding, and to subject the data to a quantitative analysis. This strategy raises numerous problems of its own, as it clearly is risks throwing the baby out with the bath water by bracketing out the cultural and pragmatic contexts, which ultimately give concepts their meaning. Even under these constraints, however, the results of the analysis gave a clear indication of the ways cognitive structures, material culture and social factors interact in the formation and transmission of religious concepts. Assyro-Babylonian concepts of the deity Šamaš do seem to fall rather neatly into the basic ontological domains proposed by cognitive optimum theory;

but the theory cannot account for the actual distribution of concepts across the different ontological domains, nor can it explain the semantic content of the concepts used, and violations of intuitive ontological assumptions do not seem to play the prominent role that the theory predicts.

Regarding the deity Šamaš, an Assyriologist could argue - and rightly so - that what has been uncovered here by means of cognitive theorizing is little more than the glaringly obvious. The prevalence of anthropomorphic god concepts in the Assyro-Babylonian period has been recognized by everyone within the field (Jastrow 1898: vol II, 49; Dhorme 1910: 58f; Landsberger 1974: 13; Kramer 1948; Lambert 1975: 49, 1990; Jacobsen 1976: ch. 3-4; Selz 1997: 185), and the notion that the source of these concepts was royal ideology is just plain common sense; what else would it be? (Jastrow 1898: *ibid.*; Jacobsen 1976: *ibid.*; Binsbergen and Wiggerman 1999). What may be new and controversial in the present analysis is not that Šamaš was anthropomorphic, but that despite being a "sun god", his association with the sun in fact played a rather marginal role in how he was conceived. (Cf Edzard 1965: 126; Lambert 1971; Black and Green 1992: 182; Bottero 2001: 59).

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