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NEW IDEAS IN
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Towards a cognitive theory of existential meaning

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Abstract

The capacity to attribute meaning to personal experiences may rest on a specialized cognitive system enabling this form of causal reasoning. Close examination of these attributional tendencies suggests that this system may be distinct from those underlying other forms of causal reasoning such as a "theory of mind" system in the behavioral domain, a folk physics system in the physical domain, and a folk biology system in the biological domain. A fourth, *existential domain*, an abstract ontological frame within which the subjective, narrative self is envisioned to be contained, may have driven the construction of an intuitive capacity in humans that encourages them to search for the underlying purpose or reason for having had certain life experiences. This system likely has specific, definable operational rules that are responsible for activating such explanatory searches. In addition, it appears anchored to a general intentionality system that promotes the attribution of teleological purpose and higher-order mental states to an abstract agency that is envisioned to cause events and personal experiences. Identifying the component parts of this specialized cognitive system through empirical investigations can help researchers to reconstruct both its evolutionary phylogeny and to track its developmental emergence.
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Keywords: Intentionality; Meaning; Causal reasoning; Cognitive development; Naïve theory

[A]s a result of being showered with blessings, I felt, I hesitate to admit, marked out. Personally marked out, among all, for that long uninterrupted success… I refused to attribute that success to my own merits and could not believe that the conjunction in a single person of such different and such extreme virtues was the result of chance alone. This is why in my happy life I felt somehow that that happiness was authorized by some higher decree. When I add that I had no religion you can see even better how extraordinary that conviction was. (Albert Camus, *The Fall*, 1956)

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1. Introduction

Such are the musings of the eccentric, ex-Parisian lawyer, Jean-Baptiste Clamence, a character endowed by Camus with a disturbing willingness to confront the purpose of existence. After a series of calamitous events, Clamence embarks on a journey to dissect the "artifice" of external meaning, ultimately concluding that existence itself is an affliction of epic proportions—albeit one that humans may never be fully able to escape. On Clamence's view, meaning is an illusion which embeds individuals in self-narratives that lead to elaborate and "absurd" human conventions and deontic frames of social discourse that typically go unchallenged. *The Fall* is a brooding, dark portrait of humanity to be sure, but at its core lays an idea which may linger well beyond its engaging literary effects. Clamence captures a profound truth about the way humans have evolved to confront the realities of their own lives: that *the self sees the self as a privileged entity*, forever playing to real or imagined audiences, thus tangling itself tighter and tighter inside a web of abstractions whose ontological status become increasingly difficult to ascertain—abstractions that cognitive scientists somewhat apologetically refer to as "meaning."

Consider Clamence's confession. He asserts that he has no religion, but he nonetheless envisions himself as an object of special attention, a being whose personal experiences are driven by some ill-defined agency that had singled him out for some purpose or reason. His intellect tells him there is no God, no ancestral spirits, no culturally prescribed deities whatsoever, yet the abstraction remains ineluctably intact—*things happen for a reason*. That this "proto-theistic" abstraction is so frequently glossed over in everyday parlance, not to mention the scientific literature, simply highlights the contour and weight it typically assumes. It is ignored as if it were the most banal and self-evident of things—a fact that suggests how deeply engrained such reasoning may truly be.

In this article, I highlight the possibility that the human penchant for grappling with this form of "meaning" is an extension of our species' ability to conceive of things that are inherently unobservable, particularly causal states. Although causal explanation continues to be a very popular topic in the cognitive sciences, researchers have yet to focus on the most abstract level of causal reasoning of all: the "aboutness" of individual lives and the events and experiences comprising them. There are many reasons why a scientific scrutiny of people's causal reasoning about these phenomena is difficult to achieve. One is that with life events and experiences, the factors that promote attributions of meaning cannot easily be systematically controlled and manipulated. In contrast, it is relatively easy to systematically manipulate factors lending themselves to causal analysis when dealing with human behavior (e.g., Schult & Wellman, 1997) or the dynamics of inanimate objects (e.g., Kotovsky & Baillargeon, 2000). In addition, simulating life events in the laboratory seriously threatens external validity, and if emotionality plays an important role, as I suspect it does, the experimenter is confined to serious ethical boundaries. For example, if people are most inclined to see meaning in traumatic personal experiences (e.g., being diagnosed with cancer, losing a loved one in an accident),

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2. Attribution of meaning

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Nevertheless, it is surprising that research on causal reasoning has not yet turned toward this particular issue of "meaning" in the empirical tradition of cognitive science (cf. Baumeister, 1991; Frankl, 1959; McAdams, 2001; Merleau-Ponty, 1969; Sartre, 1956; Wong & Fry, 1998; Yalom, 1980). Investigators have good reason to suspect that finding meaning in life events is enabled by a suite of specialized cognitive skills (Bering, 2002). For one, meaning in the "existential domain" takes the form of intentionality, such that people tend to see reason or purpose in many of their personal experiences. Also, intentional explanations are invoked not toward behavior, as they are in the "social domain," but rather in accounting for the causes of events that occur without a physical agent. Finally, there are likely critical parameters in which attributions of meaning in the existential domain can occur, with age, event characteristics, affective status, moral judgments, and decision making serving as primary determinants. If such attributions are driven by and can be predicted on the basis of these factors coming together in coordinated ways, then there may in fact be a human cognitive system that is specially devoted to processing personally relevant events as intentionally caused rather than as randomly occurring. I present one possible model of this "system" in the current article, leaving the door open for different interpretations of causal reasoning in this domain. I see my primary task as stimulating fruitful discussion in this area and, even more important, as encouraging experimental research that borrows from the design paradigms of cognitive science.

2. Attribution of meaning

Although there are no data to inform us on the matter, I am willing to wager, on the grounds of a number of functional inferences, that humans are the only species capable of pondering the "meaning" of existence, both in the grand scheme of things (Existence with a capital "E") and also in terms of individual lives (existence with a lower case "e"). This is a big claim. Perhaps too big, some might say, for mere scientists to entertain. I disagree with this negative assessment, however, and argue that scientists are precisely the ones who should be considering the issue.

I make this assumption about Homo sapiens existential uniqueness not as a dilettante philosopher nor as a theologian but rather as an evolutionarily minded cognitive scientist who sees some important similarities between the way humans reason about the unobservable causes of action and motion in the physical environment and the way they invoke unobservable causes in explaining personal experiences in the subjective environment. Just as developmental psychologists who employ traditional theory of mind tasks are not interested in whether a fictitious character actually has a false belief—or any belief, for that matter—but instead are interested in how children ascribe such beliefs to other agents, researchers should be able to investigate how individuals make attributions of existential meaning independent of the validity of such judgments. That is, I am not concerned with

the reality of any meaning that is external to human minds (this is the territory of theologians and philosophers), but rather I am interested in the psychological processes by which human minds effortlessly abstract such meaning from a universe that is altogether absent signs of behavioral agency.

First, however, what do I *mean* by "meaning"? The term has many different connotations, but in the present context, "meaning" comes very close to *teleological purpose*, in that it implies intelligent design or a *reason* for being. In that Existence (or existence) can be conceptualized as a discrete phenomenon, much as any other abstract concept or material object, it is also capable of becoming the subject of teleological analyses. Such analyses either implicitly or explicitly involve asking questions such as: "What is the purpose of *x*?"; "Why is *x*?"; "Why is *x* this way and not some other way"; "What is *x* meant to do?" or; "What is the reason for *x*?," wherever "*x*" is some concept with a referent capable of being detected by the human sensory system, or wherever "*x*" is capable of being labeled, defined, and individuated from other concepts (even by reification).

Although teleological reasoning may be most evident when dealing with human artifacts—for example, here is a dial with a small hand, which moves very slowly, and a large hand, which moves more frequently, *what is it meant for?*—there is also evidence that people routinely and automatically engage in this type of thinking for the causes of natural objects, such as pointy rocks and zebras' stripes (Kelemen, 1999a). Indeed, the intuitiveness of teleological reasoning about the natural world might help to explain why the vast majority of people continue to subscribe to a naïve Creationism and find it so difficult to accept "the blind watchmaker" account of natural selection. The unpopularity of evolutionary theory may have as much to do with its taxing cognitive demand of "turning off" a default appeal to intentional agency as it does with people's desire to believe in an intelligent creator (Dawkins, 1986; Dennett, 1995; Evans, 2001; Kelemen, 1999b).

When the subject of teleological analysis becomes the human organism's own life, however, it may be that ascriptions of purpose and meaning are altogether inescapable. I would question, for instance, whether characterizing oneself as an "atheist" or "deist" or, for that matter, a "scientist" accurately portrays one as the type of intuitive thinker one is. It may well be that, like Clamence, those who have such explicit beliefs continue to view themselves as privileged inhabitants of their own lives, whose fates are not entirely arbitrarily assigned to them by an indiscriminate nature. To use an analogy, although I doubt they would ever be successful, someone might similarly abandon the prospect that there exist other human minds by becoming a solipsist. This by no means implies that this person's theory of mind system vanishes from their default cognitive profile; it is unlikely that a solipsist would ever cease to respond to other agents *as if* they had minds. Likewise, I would argue that people who have rejected belief systems (e.g., religion) that make explicit causal appeals to the purposefulness of individual existence may find it cognitively effortful to censor intentional explanations when they are confronted with patterns of life events meeting particular demands. Indeed, Weeks and Lupfer (2000) have reported that non-religious individuals frequently appeal to a belief repertoire including fate and immanent justice when explaining ironic or

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life-altering events. The simple fact that such nihilistic beliefs are disproportionately few may speak to the difficulty of "overriding" such beliefs. Although atheism is undoubtedly more prevalent in the general population than solipsism, it is still relatively rare (and the formal philosophical school of existentialism even rarer). For example, a 2002 Gallup Poll reported that 95% of Americans believe in God or a universal spirit.

Regardless, it is not whether people are *capable* of shedding such attributions of meaning that is at issue, but rather the intuitiveness of such attributions and the critical parameters in which they are made. In addition, researchers' primary tasks in this area should be to identify and describe those basic cognitive mechanisms that are necessary for making attributions of purpose and meaning in the existential domain, to uncover the interrelationships occurring between these cognitive mechanisms, and to understand the specific processes by which they operate in human minds. In doing so, scientists can then begin to investigate the development of such a system in children and look at how language and the social world might influence the system's epigenetic expression. Also, the cognitive abilities of closely related species, such as chimpanzees and orangutans, can be probed for components of the system in an attempt to reconstruct its evolutionary phylogeny (Bering, 2001a,b, 2002).

Once we have made some headway in these directions, we can then begin to consider whether the human species' proclivity for finding intentionality in the existential domain has had any functional significance, or adaptive value, in its evolutionary past. Alternatively, such reasoning may be largely a non-adaptive byproduct of other adaptive cognitive mechanisms, such as those driving run-of-the-mill social cognition.

3. The existential domain

I have used the term *existential domain* to refer to an abstract ontological frame within which the subjective, narrative self is envisioned to be contained and which is independent of the *physical domain*, which contains the movements of inanimate objects and associated causal concepts (e.g., mass, gravity, force), the *social domain*, which contains the behaviors of intentional agents and associated causal concepts (e.g., beliefs, desires, intentions), and the *biological domain*, which contains natural physical processes and associated causal concepts (e.g., growth, illness, death). This is not to say that the superficial attributes or even the causal concepts of these other domains do not overlap with the existential domain (or with each other; e.g., Poulin-Dubois & Heroux, 1994). To the contrary, the capacity to attribute purpose and meaning to life events recruits nearly the identical set of causal concepts seen in the social domain when people reason about behavior.

For instance, theistic reasoning, which is based in the existential domain, typically involves questions of the following sort: "What is God trying to tell me?" "What does God want me to do?" "Why is God doing this to me?" Each of these questions can be answered only by appealing to the mental states of the theistic agent in question.

Likewise, phenomena that are based in the physical domain, such as the movement of inanimate objects, can also occur in the existential domain. For example, a kite may become entangled in an electrical wire during a windstorm, but the person flying it "miraculously" avoids getting an electrical shock. Here, the entanglement of the inanimate kite in the wire is envisioned to be guided by unobservable causal forces of wind and gravity (physical domain), but the favorable outcome for the person flying it might be interpreted as happening for a reason (existential domain).

What is unique about the existential domain, however, are the causal pathways by which attributions of intentionality are made within domain boundaries. In other words, what triggers mental state attributions in the existential domain is different from what triggers causal reasoning in the physical, social, and biological domains. Namely, it is the event itself, which encompasses, but is not exclusive to, the behaviors of other agents as well as the movements of inanimate objects, which is interpreted as being *about* some underlying causality *outside of* these other domains. For example, while the experience "not getting electrocuted" may be composed of behaviors from the social domain ("Why didn't Gianni tell me that there was a windstorm coming when I informed him of my plans for this afternoon?"), and also movement of inanimate objects in the physical domain ("The wind was just too strong to keep the kite away from the wire"), the experience "not getting electrocuted" has a semantic structure independent of these behaviors and physical properties in that it is *also* seen as being caused by some abstract force. This underlying causality takes the form of intentionality, such that the *occurrence of the event* is represented as a communicative message conveyed to the self by an intentional agent (e.g., "God wanted me to learn a lesson.").

In addition, causal reasoning in the existential domain appeals directly to the mental states of some intentional agency without requiring a behavioral intermediary. Of course, in the social domain, behaviors often occur at some temporal distance from their effects on an audience, and in such cases the actor's intentions cannot be directly inferred from their behavior but only inferred from physical evidence and signs that the behavior occurred (Moore, 1996; Williams, 1995). For example, a series of footprints with especially deep imprints left in the mud beneath a window might tell an astute investigator that the person who left these footprints was in a hurry to get out of the house after burglarizing it. Although this might seem similar to the way people attribute meaning to life events—in that the agent is not observed to act directly in front of us but only leaves signs of his or her intentions—it is actually quite different. In such cases, physical evidence of prior behavior is used to diagnose the intentions of the agent who engaged in the behavior—the evidence means that a behavior occurred, and it is from the representation of this now absent behavior that intentions are inferred (Moore, 1996). In the existential domain, however, because behaviors (either occurring on-line or in the past) are not envisioned to have caused events, it is not necessary to represent behavior in order to make inferences about intentions. Rather, events in the existential domain are equivalent to behavior in the social domain in that they directly symbolize underlying mental states. There is no "action-at-a-distance" in the existential domain—there is no action, and there is no distance, but only the direct

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4. The three "Existential Tiers": event, experience, and existence

Up to this point, I have used several key terms interchangeably, but for the sake of clarity the following terms should be properly distinguished from each other: (1) *event*, (2) *experience*, and, (3) *existence*. These concepts represent increasingly complex levels of meaning unique to the existential domain, such that they are hierarchically positioned within this abstract ontological frame and can be appropriately viewed as "existential tiers." The hierarchical description reflects the idea that the two higher existential tiers—*experience* and *existence*—subsume the more basic levels of meaning. That is, experience is separate from but also composed of events, and existence is separate from but also composed of both events and experience. I suspect also that this increasing complexity will be shown in continuous stages of cognitive development in children with respect to their causal reasoning in the existential domain.

4.1. Existential Tier I: events

In the existential domain, an *event* can be defined as a physical transpiration, or a set of physical transpirations, occurring in real objective space, and which serves to impinge upon the subjective construal such that the occurrence of the event is represented as being about something other than the event itself—namely, the intentions of an abstract agency. An event, in other words, is the least abstract of the existential tiers in that it refers to either the movement of inanimate objects, the behaviors of agents in the physical environment, natural changes in the biological domain, or some combination of these. For example, an event can be limited to the movement of inanimate objects, such as a picture falling from a wall, or the sun setting. It can also be limited to behavior, such as a teacher recording the wrong grade, or a dog barking. An event might also, however, be constructed from the primary properties of both the social and physical domains, such as a waiter spilling a glass of wine, or a person hammering a nail.

What distinguishes an event from the other existential tiers is that, although these physical transpirations impinge upon the subjective construal, making an inference of existential meaning does not require that the event happens *to* the individual making the inference. Rather, the individual is an onlooker of the event, and views the event as being intentionally caused *for them* as a receptive audience but not *to them*. This means that an event is typically something external to the individual making attributions of purpose or meaning to the event; it is something that happens to *other people out there* in the environment, while being seen as a referential gesture made especially *for them* on the part of some abstract intentional agent.

In order to see an event as meaningful, there are several basic cognitive abilities that an individual likely must possess, including *secondary representation, shared attention*, and an understanding of *protodeclarative communication*. Secondary representation involves a perceptual referent, or primary representation, being simultaneously represented as being about something other than its perceptually apparent features. Such a process might involve cognitively "decoupling" the actual perceptual referent from its secondary representation. Thus, the Arabic numeral "7" is not merely a vertical line slanting to the left and intersecting with a short horizontal line at a 45° angle, but rather these linear configurations *stand for* or are *about* the unobservable numeric concept of a specific value. Secondary representation does not appear to be unique to humans. Suddendorf and Whiten (2001) have presented evidence that great apes are capable of this form of representation as well, although it remains unclear whether the ability extends to these species' understanding of intentionality (see Povinelli & Bering, 2002; Tomasello & Call, 1997).

In the existential domain, attributing meaning to events necessitates having secondary representation because otherwise the event in question would simply be a regular event occurring in the social, physical, or biological domains. It is when the event comes to "stand for" or is seen as being "about" something outside of these domains that causal reasoning in the existential domain is instantiated. Secondary representation has been implicated as a necessary factor in reasoning about other minds in the social domain, in that behavior is not just behavior, but also the symbolic incarnation of underlying mental states (Perner, 1991). Crying, for example, is not just a person shedding tears and making choking sounds, but rather it is "about" that individual's current unhappiness (or happiness, as the case may be).

Similarly, in the existential domain, events are not just events, but rather are about the underlying intentionality of some abstract agency. Wind chimes blowing in the middle of the night, for example, may stand for the intentions of some abstract agency if the event impinges upon the subjective construal. For instance, a person who has just lost a loved one the previous day might interpret the event as a communicative message from the deceased. In this case, the event "wind chimes blowing" has impinged upon the subjective construal and is therefore occurring within the existential domain, where it will trigger causal reasoning in the form of intentionality.

However, the identical event might occur under other circumstances, for example a year before or after the death of the loved one, such that it does not impinge upon the same individual's subjective construal, does not occur within the existential domain, and therefore will not trigger causal reasoning in the form of intentionality. In other words, the event would be confined to the physical domain, and would just be "wind chimes blowing."

An important question in this area is the issue of event characteristics and priming: is it the nature of the event that determines whether it will be interpreted as meaningful, the individual's current subjective stance within the existential domain, or some combination of both? What about the role of emotionality? The flexibility of

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the same events in slipping in and out of meaningfulness, as well as the (potentially) infinite types of events that can be diagnosed with meaning, may set them apart from behavior in the social domain. Due to both psychological and morphological constraints, there is a limited number of behaviors that can be emitted by agents. Although these behaviors may take on variable meanings depending on the context (e.g., "happy" versus "unhappy," crying), they are always perceived as being about *some* underlying intentional states. Behaviors, in this sense, are said to be *deictic*, in that their interpretation depends on the circumstances under which they are expressed.

In the existential domain, however, while events are also deictic in that the same event can be seen as being about different intentional states on different occasions, they have the additional quality of being semantically bipolar. An individual might interpret an event as meaningful on one occasion, have the identical event reoccur in front of him or her several hundred more times, but never again invoke ascriptions of intentionality of any sort to the event. Also, unlike behaviors in the social domain, specific types of events in the existential domain cannot be validly associated with any theoretically generated causal precepts. That is, because events possess these characteristics of *infinite variety* and *semantic bipolarity*, and also because events are, in the veridical sense, entirely random, they are not amenable to the same type of theory construction believed to occur with behavior in the social domain. Unlike the prediction of behaviors, accurate prediction of events cannot be aided by deferring to previous events and forming hypotheses about their occurrences and their recurrent intentional causes. Indeed, events cannot really ever be predicted at all by appealing to an intentional agency, only explained post hoc by using this form of causal explanation. Causal reasoning in the existential domain may therefore be more about explanation than it is prediction. Prediction of events is evident, however, in the form of rituals, which might be partially explained as enduring attempts to construct a plausible theory in the face of frequent theory disconfirmation in the existential domain.

In addition to secondary representation, causal reasoning about events in the existential domain requires that an individual views other agents as having attention, a psychological attribute which can be directed and redirected at environmental features. An understanding of *shared attention* allows an individual to coordinate their attentional focus with the attentional focus of another agent, permitting "triadic interactions" between two individuals and a specific referential point in the environment that occupies the attention of both individuals (Baron-Cohen, 1994; Tomasello, 1999). Thus, without an understanding of shared attention, an individual is said to be oblivious to the fact that another agent is (or is not) attuned to the same referential point as the self, and it would be impossible to direct another's attention to something of interest when they are unaware or distracted. Young children demonstrate their understanding of shared attention by activities such as holding up something of interest in front of their parent's face, or manually turning their parent's head so that the adult's gaze falls on something of interest in the environment. Shared attention regularly emerges in human ontogeny at around 18–24 months of age, and appears to be limited to humans (Baldwin, 1991, 1993;

Baron-Cohen, 1994; Carpenter, Tomasello, & Savage-Rumbaugh, 1995; Corkum & Moore, 1995; Povinelli & Eddy, 1996).

An understanding of shared attention is necessary in the existential domain because events are interpreted as being the referential point in the environment that both the individual and some abstract intentional agency are currently attending to. The event is the "attention-getting" mechanism that serves to direct the individual's attention to the communicative "gesture" of the unobservable agency. This also raises important questions, however, about attribution processes in the existential domain. If events in the existential domain are equivalent to behavior in the social domain in that they both directly symbolize the intentions of an agent, then events in the existential domain simultaneously direct individuals' attention to the prospect of intentionality while also communicating these intentions. That is, the attention-grabbing property of the event is not only an antecedent to an important message coming after the attention is achieved, but it is also the important message at hand. This is quite different from the attention-getting behaviors of children in the social domain, such as throwing temper tantrums, blowing raspberries, or stomping one's feet, which are performed only as a means to the end of directing their parent's attention to what they really want to communicate.

Finally, the capacity for *protodeclarative communication*, particularly the ability to comprehend the referential nature of intentional communicative displays, is required for an individual to see an event as meaningful. Unlike protoimperative communication, which is designed to manipulate only the *behavior* of other agents in the environment, protodeclarative communication is used to transmit information to a naïve other and involves manipulating someone's *attentional* and *intentional* states. The distinction between protoimperative and protodeclarative communication has been made by cognitive developmentalists investigating gestural communication (Baron-Cohen, 1994; Camaioni, 1992). Pointing, for example, is said to be either protoimperative, in that it is designed to get someone else to meet one's imperative demands (e.g., "give me that!"), or protodeclarative, in that it is designed to get someone else to attend to something in the environment (e.g., "look at that!"). In the first case of pointing, individuals can learn a set of associations among indexical pointing and the behaviors of other agents, but the latter case requires mental representational skills in that the individual understands that the other agent is not currently attending to something of interest. Comprehension of protodeclarative gestures also requires an understanding of mental states in that the gesture is seen as *referencing* the communicator's intent for the individual to redirect his or her attention to something in the environment. In controlled experiments, great apes have failed to appreciate the referential nature of gestural communication (for a review, see Povinelli, Giambrone, & Bering, 2003).

Because events in the existential domain are interpreted as being about the intentions of some abstract agency, they are commensurate with a declarative behavioral display. The event refers to, or is about, some underlying intentionality; meaningful events are envisioned as being designed by an abstract intentional agency that is purposefully sharing information with a receptive audience—namely, the subjective self. Thus, a Bible falling from the bookshelf may be interpreted as a

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communicative message (whose specific meaning will vary from person to person, and context to context) intentionally communicated to the subjective self in an effort to affect some change in the subjective self's attentional and intentional status. Although events may have additional imperative implications by changing or manipulating the self's behavior ("stop that!"), events are not seen by the subjective self as protoimperative in nature because the abstract intentional agency "emitting the event" is represented as a social partner who is intentionally sharing information with the self.

Because events are represented as being *about* some abstract agency's intentions, are envisioned as being *jointly attended to* by both the self and this agency, and are seen as being intentionally issued as a *communicative message* by this agency, secondary representation, shared attention, and protodeclarative communication are essential cognitive mechanisms required for imbuing events with meaning. Although all of these mechanisms are also general system requirements of cognition in the social domain, and have been implicated as developmental precursors to the more sophisticated theory of mind system (see Flavell, 1999), the existential domain employs them in fundamentally different procedural ways, as previously discussed.

In addition, these mechanisms should be viewed as the "minimum system requirements" for attributing meaning to events. As in the social domain, an understanding of intentionality does not require that the organism is capable of metarepresentation, or the explicit representation of higher-order beliefs and knowledge. Young children and even infants are able to detect intentional states prior to having a mature theory of mind (e.g. Gergely, Nádasy, Csibra, & Bíró, 1995; Meltzoff, 1995). Metarepresentation is commonly invoked in the existential domain, at each existential tier, but it is not required for representations of meaning. An event such as a thunder clap may be seen by someone as being about the displeasure of some abstract agency without the person devising a theory as to why the agency is displeased. Metarepresentation is more likely to be found at the second existential tier, the level of meaning I have called *experience*.

4.2. Existential Tier 2: experience

In the existential domain, *experience* refers to a class of event that happens *to* the self, rather than to someone else or occurring *out there* in the world without the self's direct involvement. The nature of events comprising experience is the same as the nature of events independent of experience. That is, as in the first existential tier, events at the second existential tier refer to physical transpirations in the external environment, but here rather than impinging upon the self's subjective construal solely through perception of these environmental transpirations, events impinge upon this subjective bearing by directly bearing on the behavior of the self. The self may be either a willing participant in the event—even purposefully causing it to occur—or the event may happen despite the self's willingness.

Because events happen to the self, experiences at the second existential tier promote sudden affective judgments, in that the self evaluates experiences as

being favorable or unfavorable. For instance, the self may run into a long lost friend at a carnival (favorable), or suffer a ruptured hernia on a trip overseas (unfavorable). These examples are both experiences in that they involve events that impinge upon the subjective construal by directly bearing on the self's behavior. Importantly, however, they also instantiate affective judgments because they entail behavioral change as a result of their occurrence; this behavioral change will introduce *favorable* goal-oriented actions (e.g., getting together with a friend from childhood and talking about the past), or introduce *unfavorable* goal-oriented actions (e.g., finding an emergency physician in a non-native speaking country).

Experiences that do not encourage affective judgments (e.g., turning on a light switch; being greeted by a coworker; driving home from work) may entail behavioral change as well. One of the differences between such experiences and those occurring within the existential domain, however, is that they are expected or regularly occurring, and introduce goal-oriented actions which are neither favorable nor unfavorable (e.g., writing at a desk, returning a coworker's smile, stopping at the store for milk). Although affective judgments are necessary for experiences to be diagnosed with meaning, however, they are far from sufficient. One may (not) enjoy a particular experience, and even have very strong positive (negative) feelings toward the experience, but see no meaning in the experience.

Experiences occurring within the existential domain must also meet other criteria which, cumulatively, serve to invoke causal reasoning involving attributions of intentionality. Although these criteria are not currently known, candidates include *deviations from canonical scripts* and the promotion of *counterfactual thinking*. In the social domain, Bruner (1990) has argued that individuals will search for meaning whenever others' behavior violates their expectations, or does not adhere to sociocultural scripts. For instance, breaches of Gricean conversational maxims ("conversational implicatures") will often encourage a search for intentions. If someone responds with the answer "it's two o'clock" after being asked what the weather forecast is for tomorrow, most listeners will reason about the causes for this inappropriate—or, at least, unexpected—social response. Perhaps the person does not speak English, and did not *understand* the question; perhaps the person is *mentally ill*; perhaps the person is *angry* and is trying to *frustrate* the listener; perhaps the person is being *sarcastic*; perhaps the person *did not hear* the question and is talking to himself, and so on. Although they invoke different theories for the causes of the person's behavior, each of these explanations share an appeal to psychological causation. It is unlikely that similar explanatory appeals would be made if the person gave an appropriate or expected social response (e.g., "I think it's supposed to rain.").

Similarly, experiences that are expected or mundane are unlikely to invoke causal reasoning in the existential domain. For example, experiences usually unfold in a manner consistent with sociocultural scripts; the context of a social event will determine what amounts to appropriate, expected behavior. Going out to eat, for instance, involves meeting a hostess at the front desk, waiting to be seated, following the waiter to the table, ordering food from a menu, eating, paying the bill, leaving a

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tip, and exiting the restaurant. "Going out to eat" is an experience comprised of a series of sequential events, each of which is expected to occur. If these events unfold according to one's schema for this sociocultural script, it is unlikely that he or she will find any meaning in the experience outside of the social domain—e.g., the waiter's unpleasant manner. If, however, the experience involves an unexpected event, and if this unexpected event triggers an implicit affective judgment, then the experience may become imbued with meaning. For example, if during the course of eating our dinner, a patron at a neighboring table begins to choke on a piece of steak, *and* if we decide to save this person's life by performing the Heimlich maneuver on them, then the experience may become meaningful. That is, it becomes more likely that causal reasoning in the existential domain will occur (e.g., "God made sure I was here tonight so that I could save this man's life.").

In the previous example, deviation from the canonical script of "going out to eat" involves the inclusion of an unexpected event within the routine, what may be called an *event adumbration*. Other forms of deviations from canonical or expected scripts include *event omissions*, where expected or mundane experiences become meaningful because they lack one or more scripted events (e.g., entering a classroom to take a test and learning that the test has been cancelled), *event redundancies*, where events comprising a canonical or expected script are repeated within the same experience (e.g., going out on a blind date and falling in love with someone else encountered during the date), and *event trans-formations*, where there is no inclusion of unexpected events, no omission of expected events, and no repetition of expected events, but there is a deviation in the event sequence (e.g., publishing a graduate thesis before defending it before a graduate committee).

Such deviations often encourage counterfactual thinking. *Counterfactual thinking* involves the representation of alternative, non-veridical outcomes, and is associated with the perceived modifiability of experiences (Byrne, 2002). Mainly, counterfactual thinking occurs when the outcomes of experiences are believed to be caused by the decisions and behaviors leading up to them; because decisions and behaviors are mutable, individuals often consider "what might have been" if they had made *different decisions or had behaved differently*. Thus, in the previous example, we might wonder what would have happened to the choking patron if we had not decided on that particular restaurant on that particular night, and if we had not just finished watching a television special on First Aid. Likewise, the choking victim might wonder how the situation would have ended had there been no one in the restaurant who knew how to perform the Heimlich maneuver, or whether the whole thing could have been avoided if he had just eaten at home that night. Such thinking may also be linked to people's sense of *irony*, which involves seeing a vague purposefulness whenever causally unrelated events (e.g., watching a show on first aid: sitting next to a choking victim) suddenly become causally linked (Pepitone & Saffioti, 1997).

Counterfactual thinking likely promotes an analysis of meaning at the second existential tier because it invokes a search for the cause of script deviation. At first,

this explanatory search will entail causal reasoning in the social domain by "cognitively rewinding" a series of past events, systematically manipulating behavioral variables, and then simulating the effect of these behavioral changes on the representational self's experiential outcome (Byrne, 2002). These behavioral variables, however, must be constrained to the available informational and emotional resources at the time the initial decisions for planning actions were made. If there was both opportunity and reason *not* to take a particular course of action leading up to some experience, but one took this course anyway, then counterfactual thinking is unlikely to result in ascriptions of meaning. Rather, meaning will be consigned to the social domain, in that the experience will be deemed the result of the self's purposeful behavior or, if in denial, the self might attribute the outcome to someone else's purposeful behavior. This does not imply, however, that such incidences are not associated with counterfactual thinking. Indeed, counterfactual thinking may occur with great frequency when individuals are personally responsible for negative outcomes that occurred because of poor decision making (German, 1999). This is probably an adaptive strategy allowing people to avoid making similar errors in the future.

In some cases, however, counterfactual thinking will be ineffective in delivering a cause that is constrained to the available resources at the time the initial behavioral decisions were made. That is, some script deviations simply cannot be prevented because at the time the individual initiates the event sequence, they either do not have access to valuable information encouraging them to behave otherwise, or are unable to inhibit an action because of emotional factors. When the cause cannot therefore be located within the social domain through counterfactual thinking, or when only one course of action is possible at the time of event initiation (e.g., emotional determinism), there is a default appeal to intentionality in the existential domain. The experience "happens for a reason" in either case, but only when the experience is viewed as *thrown upon* the self, rather than *caused by* the self, is meaning attributed to the experience.

Causal reasoning in the existential domain, however, is limited to the postulation of theoretical constructs, and is not amenable to empirical testing. Because they are not controllable, meaningful experiences cannot, in essence, ever be recreated and are unlikely to occur again. Thus, attributions of meaning in the existential domain are based on a very small sample of highly individual experiences. Also, because experiences consist of events, and not behavior, inferences about intentionality are based on subjective rather than objective grounds. A causal relationship between events and mental states cannot be empirically evaluated. In contrast, in the social domain, different theories of mind can be weighed and measured against each other in the process of devising a correct theory about the relationship between behavior and mental states. This is because such attributions involve behavioral agents, which allows individuals to systemically and objectively probe behavioral causes by inferring intentionality through language or by observing predicted relationships between mental states and overt behavior. Constructing theories about the intentions of some abstract intentional agency in throwing an experience upon the self, however, countermands these empirical

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4.3. Existential Tier 3: existence

Thus far, I have spoken of events that are represented as happening *for* the self (Existential Tier 1), and also of events that happen *to* the self (Existential Tier 2). The third existential tier, *existence*, refers to the level of meaning attributed to the self itself, where the self is the progressive product of those experiences imbued with meaning at the second existential tier. The human self is a metarepresentational agency that is aware of its own existence, has privileged access to mental states that others can only infer through behavior, and envisions itself as being contained within a temporal frame (Povinelli, 1995; Suddendorf & Corballis, 1997; Tomasello, 1999). This temporal frame is marked with expectations and goals for future experiences, as well as evaluations of ongoing and previous experiences, and is written as a unique narrative by the metarepresentational self (Nelson, 2000). The metarepresentational self emerges in response to the self being treated by social others as a unique, intentional agent that is fallible in its beliefs (Tomasello, 1999). Its appearance in ontogeny at about 4 years of age seems to co-occur with the ability to attribute mental states to other agents (see Flavell, 1999; Wellman, Cross, & Watson, 2001).

Causal reasoning at the highest existential tier is more explicit than at the other two levels, in that it involves extrapolating meaning from an entire sequence of distally related experiences that have no obvious causal relations. It is also more explicit in that it seems to demand deliberation with the metarepresentational self as a dialogic partner. This is because language both constructs this metarepresenta-tional self and distances the self from the physical environment, such that the self becomes an observer of its experiences rather than simply consumed by the sensory and perceptual effects of its experiences (Astington, 2000; Nelson, 2001). The human self is therefore an abstract agency whose conceptualization is enabled by language. Although there may well be precursory variants to the metarepresentational self in other species, such as kinesthetic-proprioceptive representation in chimpanzees (Povinelli, 1995), humans appear to be the only species that represents its own mental representations and critically analyzes these representations in the process.

It is at this highest existential tier, existence, that language becomes *necessary* for causal reasoning in the existential domain. In contrast to the other two existential tiers, where the subjects of causal analysis are physical transpirations (i.e., events), and where it is possible to detect intentions of some abstract agency without incorporating such events into the self narrative, the subject of causal analysis at this level of meaning is an abstract concept created by language and which cannot exist without language. Even if the self were unaware of its own existence, it would still continue to experience events, and may even implicitly reason about the causes of these events. When it becomes conscious of itself, however, the self begins to track these experiences over an autobiographical course and refer to these experiences in narrative discourse with itself.

5. Religion and meaning

Clearly, meaning and religion go hand in hand. Those individuals who profess their religiosity make explicit attributions of meaning much more frequently than those who claim to be non-religious or non-spiritual (Kunst, Bjorck, & Tan, 2000). We must be careful, however, to distinguish between the intuitive capacity to engage in this form of causal reasoning in the existential domain and the conscious decision not to do so. Only the former occupies our attention here. Although religious indoctrination may exert a very powerful influence on one's sense of meaning and purpose in life, it is not clear how it could actually endow people with the cognitive skills needed to make such causal attributions. Religion appears to be the natural product of this specialized system, not its enabler.

Historically, developmental psychologists bringing to bear any interest in the ontogeny of religious thought have firmly written off the possibility that a specialized causal frame unique to religion even exists, let alone that it develops on par with a well-oiled epigenetic pathway virtually guaranteeing proficiency. Religious beliefs have instead been mostly viewed as coming from "outside the head." Much of this can be traced back to Piaget (1929), who argued that culturally introduced religious concepts are assimilated piecemeal into children's thinking in line with their particular stage of cognitive development. For example, Piagetians have argued that the concept of God replaces the egocentric postulation of maternal omniscience sometime during middle childhood in response to the child experiencing maternal fallibility (Bovet, 1928). Summarizing the position of the field a little over two decades ago, Elkind (1979, p. 279) wrote:

> Psychologists who have concerned themselves with religious phenomena are in general agreement with respect to one point, namely, that there are no uniquely religious psychic elements.... There are no drives, sentiments, emotions, or mental categories which are inherently religious. Psychic elements, it is agreed, become religious only insofar as they become associated with one or another aspect of institutional religion.

Despite successfully casting off the Piagetian lodestone that had come to dominate developmental approaches to religion, the major contemporary theories are still in alignment with Elkind's unswerving enunciation. In his recent book on religion and cognition, for instance, Boyer (2001, p. 311), wrote:

> Because [religious] concepts require all sorts of specific human capacities (an intuitive psychology, a tendency to attend to some counterintuitive concepts, as well as various social mind adaptations), we can explain religion by describing how these various capacities get recruited. We do not need to assume that there is a *special* way of functioning that occurs only when processing religious thoughts (italics in original).

According to Boyer (1994, 2001); Boyer & Walker (2000), religion can be explained by focusing on the ways by which culturally variable religious concepts successfully exploit the underlying structure of evolved human cognitive mechanisms, such as

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those devoted to metarepresentation (e.g., reasoning about the beliefs of spirits), memory (e.g., routinization of ritual acts), and intuitive morality (e.g., religious proscription of immoral behavior). Because the standard profile of a religious concept is an agent or event that violates people's intuitive assumptions about the way the world works (e.g., a human being that can pass through solid walls), Boyer's model holds that religious concepts gain entrance to these mundane cognitive mechanisms through their attention-grabbing properties. Several scholars (Dawkins, 1993; Sperber, 1996; Sperber & Hirschfeld, 1999) have even likened the process to an "epidemic," wherein religious concepts are envisioned to "parasitize" mundane cognitive mechanisms and culture is the airborne host transmitting the "virus" of religion to individual minds.

I am not in disagreement with the general position that the acquisition, maintenance, and representation of religious concepts occur by their pirating aspects of human cognition that serve other, non-religious, ends. In fact, the proposal that intuitive psychology is recruited by culturally propagated religious ideas is one I enthusiastically endorse. Boyer's model remains the most well thought-out description of the cognitive mechanisms of religious indoctrination and provides an invaluable religious concept classificatory scheme.

That said, such an interpretation of religion risks confusing the innate processes underlying causal ascriptions and events with the explicit concepts generated by the intersection of these innate processes and cultural environments. At its core, religion is about meaning, not cultural concepts. One of the most important, and challenging, questions that can therefore be asked about the emergence of religion is the following: What evolutionary and developmental processes have led to the standard epigenetic construction of a human self that not only experiences the outside world as it filters into the perceptual system, but also seeks to interpret particular environmental events as if they were intentionally thrown upon the self and are serving as referential communicative devices? The human self evolved not only to keep intimate track of its own experiences and to place those experiences into a coherent narrative frame, but also, and importantly, to reason about the hidden causes of those experiences as well as the reason for the general disposition of that frame.

Religion can be primarily understood as the byproduct of causal reasoning in the existential domain. It is a natural symptom of meaning much as language is a natural symptom of mental state representation. Before talking about the "adaptiveness" of religion, a task which has so far been largely ineffective in my view, investigators must first address the more general issue of how humans find meaning in events.

6. Concluding remarks

Although recent empirical and theoretical advances in cognitive science cannot actually serve to answer the question, "what is the meaning of life?" the field can certainly begin contributing to our understanding of the question. Unlike any other generation of scientists, current investigators have enough knowledge of how human

minds process information from the natural world to begin formulating testable hypotheses about *why* individuals ask this existential question, *how* they do so, and *when* in ontogeny they are able to do so. Until we have reached this level of understanding, our view of life and of our *raison d'être* must remain close to Samuel Butler's very general assessment: "Life is the art of drawing sufficient conclusions from insufficient premises."

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PERGAMON　　　New Idea

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Department of Psychology, Institute of

Abstract

Universal Selection Theory clai
are achieved through a process of
evolution by natural selection. Th
the gene, behavior, cognition, and
theory and explains how it ma
suggested that the theory provides
cultural perspectives; an account
be effective interventions; and a
resistant to change. Implications
future research are discussed.

1. Introduction

Universal Selection Theory
that increases in the fit of a sys
of blind variation and selectiv
selection (Darwin, 1859; Wa
proposed to apply to the fu
development of complex beha
of human culture (Blackmore,

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