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Sense-Making, Cultural Scripts, and the Inferential Basis of Meaningful Experience

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Abstract

Cognitive science has made great progress in understanding how we explain and make sense of a complex world. We lack, however, an account of a deeper notion: how an experience that makes sense can become one that is meaningful. We present an account of how explanation and sense-making can lead to meaning-making, by the use—and, crucially, re-use—of a small set of cultural scripts: explanatory complexes that can be shared across domains by members of a social group. We explain meaning-making as a process of inference in which an individual leverages these cultural scripts to segment their full, unstructured set of experiences into a form that can be understood and endorsed as significant. Our account suggests how cultural artifacts (particularly stories in the form of novels, plays, and movies) are crucial for the transmission of these scripts. We present a mathematical model of this inferential process that can account for a range of phenomena which typically resist formalization. This includes the importance of narratives in meaning-making, the difficulty of articulating meaning separately from experiences that encapsulate it, and the ways in which the standard interpretation of a stable cultural artifact can change radically over time.

Keywords: meaning; narrative; experience; cultural scripts; tacit knowledge; cultural evolution

Meaningful experiences are a core component of how people think about and organize their lives (Bruner, 1987, 1990). This process of meaning-making is often framed as a search problem (Frankl, 1959; Steger, Frazier, Oishi, & Kaler, 2006), where one not only seeks out the right kinds of experiences, but also the right vantage-point from which to view and make sense of them. The experience of meaning is, in part, an interpretive process (Geertz, 1973), requiring a search through a potentially unbounded hypothesis space—seeking to contextualize an event within the plot of a broader narrative (Bruner, 1991). The challenge of such a search leads to a basic question: how do people constrain the space of possible narratives well enough to form an impression that an event or experience is meaningful?

This paper presents a framework to account for meaning-making within the computational formalisms of cognitive science. It is an attempt to provide a partial response to Jerome Bruner's injunction that a main task of cognitive science is "to discover and to describe formally the meanings that human beings created out of their encounters with the world, and then to propose hypotheses about what meaning-making processes were implicated" (Bruner, 1990, p. 2).

Our basic contention is that when an individual derives meaning from a set of experiences, they draw simultaneously on (1) a selectively attended-to subset of those experiences, and (2) a broadly-shared set of programmatic cultural scripts, which provide a template for reconstructing the whole. These scripts, in turn, are learned from participation in a wider culture and, in particular, from encounters with cultural artifacts including stories and other works of narrative art. We aim to provide a preliminary answer to a basic question: What are the cognitive processes underlying the judgment that a given experience or story is not just explainable—but meaningful?

The Meaning of "Meaning"

To paraphrase Miller (1962), "meaning" is a word worn smooth by a thousand tongues. The term has been used by many people across many disciplines to refer to many different things (Ogden & Richards, 1923). While it is beyond the scope of this paper to adjudicate among all these competing usages, we can attempt to indicate the sense of "meaning" in which we are most directly interested.

In a trivial sense, any successful communication between two people involves the exchange of meaningful signs: failures to understand that (for example) a friend wants to leave a party early are often failures to grasp the meaning of what they're telling us. Their utterance "it's getting kind of wild" might be misinterpreted as a desire to stay, if one do not catch the nervousness beneath their friend's statement. In the simplest cases, the meaning of a word is simply a matter of emergent convention (Lewis, 1969); for more complex situations, a vast literature has emerged around how we learn the "meanings" of things through repeated interaction, how we combine those meanings together to share increasingly elaborate representations with each other, and how we do so through tools such as Grice's Maxims and theory of mind.

We also, however, have a sense of what we might call idiosyncratic and personal meaning: a particular set of events or experiences may have a meaning for us that we perceive in ways that differ from standard cases of interpersonal communication. In many cases, for example, these meaningful experiences are created for us without any communicative intent: the events surrounding the birth of a child, for example, may be experienced as being meaningful without our attributing those events to the deliberately-constructed communicative act of another being. In other cases—say, the first time a student driver is told they're "ready to take the wheel"—the meaning experienced goes well beyond what is intended by

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other speakers.

While standard communicative principles can't be easily applied to these cases, we nonetheless experience them as conveying meaning for us in ways that are somewhat analogous to the more ordinary use of the term: in both cases, experience is transmuted by sense-making into a more succinct internal representation. These experiences are personal but they need not, of course, be private. Consider, for example, the terrorist attacks of 9/11: for many people in New York, these attacks were experienced as extremely meaningful. The meaning that people made of the attack (in most, if not all, cases) was not, certainly, the meaning intended by the perpetrators; but while we might expect a diversity of responses, we also expect commonalities to arise—for many, the meaning included some sense of "the end of innocence."

Making sense of this process is the goal of this paper, which draws on hermeneutic methods from the humanities as much as from cognitive science (Richards, 1929); there is, also, a close correspondence between our account of meaning and that of Bruner (1990).

We diverge significantly, however, from key usages of "meaningfulness" in positive psychology, which often frames meaning (implicitly) as an inherent property of an event or experience (Steger et al., 2006; King & Hicks, 2021; King, Heintzelman, & Ward, 2016; Martela & Steger, 2016). Crucially, we distinguish between empirical and interpretive aspects of meaning. While meaning can be empirically studied by measuring subjective evaluations ("How meaningful do you find X?"), what these measurements can capture are, at most, the most common targets of meaning-making within a particular cultural context; regularities in these reports alone cannot, as we show, give us direct information about the underlying mechanisms. The foundation of meaning is *interpretive* in the sense used by Geertz (1973) and Bruner (1990): an individual cognitive process that is dissociable from specific events themselves.

Sense-making and Efficient Description

Our account begins with the notion of "sense-making" provided by Chater and Loewenstein (2016). Chater and Lowenstein argue that humans have a drive for sense-making, through which people organize information into simple but coherent descriptions of the world. While their full story draws on sophisticated ideas in algorithmic complexity (Li & Vitanyi, 2013), the core of the theory is simple to introduce.

Consider, to begin with, a large set of experiences E that a person has had. Generically speaking, such a set would be encoded (whether in memory, as a neural code, or natural language) in an extraordinarily verbose fashion. Such a verbose description is intrinsically without sense—simply "one damn thing after another."

It may be the case, however, that that set of experiences has an "explanation", e. While the raw material E is verbose, e may be much shorter. This e will necessarily be more than a restatement of the list of experiences E and can be thought of as an algorithm, program, or script, which can—with some mental effort—be used to reconstruct the original set E. An explanation e "makes sense" of a set of experiences E when it can be used to reconstruct E without additional information.

Consider, for example, the experience of going to your favorite café each morning and encountering one of two baristas, A and B. Over the course of a month, this experience set, E, might be

$$E = \text{ABABABABABABABABABABABABABAB}$$

a thirty-character string, or, in words, "on the first day, A was there, on the second day, B was there, on the third day, A was there..." for a total length of 210 words. It is almost automatic, however, that one would make sense of this experience by the far more efficient explanation e,

$$e = \texttt{for i in 1:15: print "AB"}$$

or, in words that have a slightly different logic, but the same result, "A and B alternate, A starts the month". The rephrasing is more succinct (eight words instead of 210); the degree of sense-making is the gap between the length of the rephrasing and the original.

Formally speaking, e is shorter than E (as a matter of character or word count). Psychologically speaking—and this is the claim of the Chater and Lowenstein paper—the relative increase in brevity in going from E to e produces the feeling of having made sense of the experience. This focus on explaining past experiences distinguishes sense-making (a fundamentally *post hoc* process) from similar processes, such as generalization.

The world does not always make sense, of course. Consider a different sequence of café experiences,

$$E' = \text{BAABABBAAABBBBBBAAABBBBAABAABA}$$

In this (pseudorandom) case, it may be impossible to find an e' that generates E' but that is, at the same time, shorter. Faced with such a set, we might well say that there is no sense to be made from which barista is encountered each morning; under Chater and Lowenstein's theory, we might find this experience to be, if we attend to it at all, somewhat unsettling because of its lack of sense.

It may be the case that E', seen in a larger context, makes a great deal of sense. Consider, for example, an augmented set of experiences $\{E', C\}$, where C is information about the dates of A's choir rehearsals. It may well be the case that this additional information, C, enables one to generate a more efficient description, e', of E' that takes the form "A generally works, except on days that she has choir practice, when B subs in."

In this case, we can say that C together with e' makes sense of E'. With additional background knowledge yet, one might even make sense of C, using explanations that refer to how well the choir is doing, so that a final explanation might well explain both E' and C together in terms of the choir needing to get up to speed on new material in a difficult section of Bach's Mass in B Minor.

Sense-making and Cultural Scripts

In our account of sense-making so far, explanation construction is an *ad hoc* process. In reality, inventing (and then testing) new explanations for each novel set is an expensive process that we avoid as much as possible.

A far easier alternative is to draw explanations from a small set of cultural scripts—programmatic recipes that combine with a small amount of *ad hoc* data to reproduce the original. In the case of our café example, we might make sense of the alternating sequence A and B in the following fashion:

1. People share the load (cultural script)
2. The café has only two employees (*ad hoc* data)
3. Barista A started the month (*ad hoc* data)

Such an explanation may not be as efficient as "A and B alternate" (fourteen words instead of four), but explanations of this form may be more efficiently found.

More generally, consider an experience set E. If p is a cultural script drawn from the set $\mathcal{P}$, and a a set of *ad hoc* features, specific to the scenario, drawn from the experience set E, then the fact that $\{p,a\}$ "makes sense" of E means that E can be recreated via some mental process M (*e.g.*, simulation, deductive or inductive reasoning, and so on), such that

$$E = M(p,a) \tag{1}$$

It may well be the case that there is a different explanation, p', which can also reproduce the original experience, *i.e.*,

$$E = M(p'), \tag{2}$$

It may even be the case that the length of that explanation, $L(p')$, is shorter than the combined length of p and a:

$$L(p') < L(p) + L(a) < L(E) \tag{3}$$

where the second inequality comes from the fact that both p' and $\{p,a\}$ serve some sense-making purpose—that is, either of them can lead to a more efficient representation of the original set of experiences.

Cultural scripts may, in other words, be less efficient than bespoke alternatives—meaning that reliance on cultural scripts will often mean that experiences may make less sense than they would otherwise (though, as we will explain, potentially more meaningful). In most cases, if one had taken the time to ponder explanations outside the set of received cultural wisdom, it would be possible to discover an explanation which further compresses the material to hand.

The use of cultural scripts, however, may, in compensation, have significant cost savings in the discovery process. This is because the set of cultural scripts $\mathcal{P}$ is relatively small. It can be thought of as a kind of sociological imagination (Mills, 1959)—the received wisdom of a social group's shared explanations for the world, lying in graspable reach for a critical mass of its members. To make sense of an experience using a cultural script means (1) cycling through members of $\mathcal{P}$, and (2) searching through the space of subsets of the full experience E to find the appropriate core events a. This is a much simpler task, however, than searching the space of *all* possible explanations which is, at the very least, exponentially hard and, in the limit, uncomputable.

From Sense to Meaning: Culturally-endorsed Efficient Explanations

Experiences that make sense can be explained; meaningful experiences, as a further matter, can be organized into a larger collection that makes sense under elements of $\mathcal{P}$. A core empirical consequence of this claim is that it is not the experiences themselves which are intrinsically meaningful. Any set of experiences can, in theory, be meaningful provided that they can be organized according to one of the culturally-endorsed scripts for meaning-making.

There is a great deal of evidence from the sociological sciences for such a story. In the classic sociological text *The Dignity of Working Men*, Lamont (2000) provides an account of how blue-collar workers (such as factory workers, construction workers, and mechanics) view the meaning of their work. Lamont argued that these men find meaning in their work through principles such as providing for their family, demonstrating moral worth (*e.g.*, via work ethic), and maintaining self-respect (*e.g.*, doing what it takes to survive in the face of economic hardship). In Lamont's account, white workers in the United States tended to emphasize the value of the "disciplined self" while Black workers tended to emphasize the "caring self." French workers tended to emphasize solidarity with the poor, whereas American workers tended to draw a sharp distinction between themselves and other working class individuals who did not value the principles of providing for family, work ethic, and so on.

The meaning-making themes identified by Lamont—providing for family, work ethic, solidarity with a given community, craftsmanship, the "disciplined self", the "caring self"—are examples of shared cultural scripts that members of each community relied upon to make sense of private, idiosyncratic experiences. They are scripts because they are well-defined and cognitively easy to implement. They are cultural because they emerge from a collective process that, among other things, provided not only the content of a belief but also its endorsement by a broader social group.

Efficiency vs Endorsement

A sequence such as our café example is simple enough to make sense of. It may also be possible, with an appropriate $\mathcal{P}$, for that coherence to become meaningful. But this depends greatly on the $\mathcal{P}$ provided by the relevant cultural group.

Consider the different perceptions of two hypothetical white collar workers: a professor at a university and an employee of a large corporation. A professor's ready-to-hand scripts for interpreting their work as meaningful may be associated with values such as intellectual integrity, the impact

of one's contributions in a given domain, or mentoring junior members of one's discipline. The professor, when looking at the work of the corporate employee, can likely provide an efficient encoding to make sense of the employee's actions at work—by positing a desire to accumulate stock options or earn a promotion within the firm's hierarchical structure, just as the professor can make sense of the pattern of the baristas' shifts. However, the professor is not a member of these communities, and therefore lacks the cultural scripts needed to endorse the barista's or corporate employee's work as especially meaningful.

When it comes to meaning-making, in other words, efficiency matters—but so does recognition within a larger community. Informally, people are looking to tell a story about themselves that accounts for who they are and why what they do matters. That story needs to be compelling to themselves (*i.e.*, efficiently compress their full set of experiences E into a handier description e) and compelling to those around them (*i.e.*, does not require members of their social group to derive a new cultural script p to interpret the story). Even if a more efficient account of these processes is possible, the sharing of a script across distinct domains provides the characteristic sense that a meaningful experience is connected to something larger than oneself.

Such a discovery—of a p from $\mathcal{P}$ which makes sense of an unfamiliar E—not only makes the object one holds more meaningful, but also makes the other things that p explains, including things in one's own culture, more meaningful. Activities that are explicitly intended to draw attention to the meaning of some experience E often emphasize the generative quality of the underlying p by reference to other E': marriage ceremonies reference the marriages of the parents, graduation ceremonies include alumni as well as historical references, such as the mortarboards of long-vanished guilds.

Inferring Scripts from Cultural Artifacts

Our examples so far have included explicit, verbal accounts of both the culturally-available programs p and the *ad hoc* feature set a. However, there is nothing that requires either of them to be known to us in any explicit fashion. We need not be aware, in other words, that the p we use to make sense of (and find meaning in) the ways in which people divide up labor is "people share the load"—if indeed it ever was.

Rather, it is typically the case that those p's which matter most to us are impossible to put into words; there is often an enormous gap between the meaning one feels inheres in a significant event (*e.g.*, seeing one's grandparents share a quiet walk in the park) and a clichéd restatement of it ("true love never dies"). It is this ineffability that makes narrative a uniquely powerful vehicle for meaning, rather than a trite aphorism. If the aphorism had the same gravity, we would not need the story.

Let us now consider the meaning of stories more concretely in the form of a literary artifact. Suppose that we consider the set of experiences E to be codified as the text of a novel. When a reader encounters such a text, they are faced with an inference problem. Intuitively, this problem is: What is the interpretation which gives meaning to the key events within the context of this larger narrative? We can formalize this as a version of Eq. 1 given above,

$$E_{novel} = M(p, a) \tag{4}$$

in which the experience set E_{novel} is given by the text. This equation can then be reformulated as an inference problem: What is the script (or program) p that provides an interpretation which lends meaning to a, a set of key events or features within the narrative? As an inference problem, this becomes a challenge of finding an interpretation p that, combined with a set of key events a, allows us to reconstruct E_{novel}.

For most readers, the p to be inferred is implicit. For trained literary critics, the goal may be to approximate p as closely as possible in words. Psychologically speaking, while it may be possible to describe p explicitly to some degree ("true love never dies") there is something about the *implication* of p in a narrative which gives the reader the full thrust of the story's meaning.

The space of possible interpretations p and events a which can render a text E_{novel} meaningful is large, such that many possible interpretations can be inferred and events posited which lend significance to the events of a text within a novel. The difficulty of discovering p and a is, in a sense, the difficulty of "reading well"—not just extracting the p, but finding the a that p combines with. Informally, for example, if p contains a hero-villain dynamic, a includes the events that help us identify the hero and the villain; if p contains a revenge plot, a includes the events that identify the harmed, the harmer, and the harm done.

For any given literary text, a canonical interpretation p may be favored. Consider Jane Austen's *Pride and Prejudice*. In the cultural context of the book's initial publication (the Regency era England of 1813) the facts of social class carried implications that may not be immediately apparent to modern-day readers of the book. By contrast, modern readers of Austen's text might find themselves attuned to facts to which initial readers may not have been sensitive. Where did Mr. Darcy's money come from? Whose labor was exploited so he could live comfortably as a member of the leisure class? Accordingly, the canonical interpretation may change even though the underlying text remains the same. This shift in interpretation can be accommodated in the model as follows:

$$E_{novel} = M(p', a') \tag{5}$$

This account is consistent with the idea that while one canonical interpretation may be favored within a given frame of reference, a text can support many interpretations—depending on the key events selected within the text, and the cultural scripts p which are available within the reader's cultural frame of reference $\mathcal{P}$. These competing interpretations can vary not just across cultures, but also between individuals.

Interpretation, Beliefs, and Events

This process of interpretation is highly flexible. Many people have had the experience of being enthusiastically recommended a book by a close friend or colleague, only to find that the book, while perhaps entertaining or readable, fails to inspire the same depth of meaning in the reader to whom it was recommended.

Some of this flexibility is intergroup. Stories that resonate in one cultural context—*e.g.*, Biblical or Koranic episodes—do not carry the same weight in another. Some of this flexibility is interpersonal, as with the discrepancy of reaction between recommender and recommendee. And some of this flexibility is intrapersonal: a reader is likely to have a different reaction to a text in their twenties than they would rereading it in their forties.

In each of these cases, the reader is inferring a different meaning—as an implicit program p—for a given text. In some cases, they can perhaps infer a p which makes sense of the text but does not resonate with any meaningful script within the reader's own cultural frame of reference. In other cases, the reader may fail to find any satisfactory p at all.

What determines whether a reader can successfully infer a culturally significant p to interpret a given text? Our model makes specific predictions based on two factors: the beliefs that must be held to interpret a story and the difficulty of segmenting individual events within that story.

Core vs Auxiliary Beliefs

The first factor concerns the *kind* of beliefs that a reader must hold, endorse, or appreciate in order to interpret a text. We draw on a distinction between core and auxiliary beliefs (Gershman, 2019). Core beliefs are the beliefs an individual holds most closely and is reluctant to change. Auxiliary beliefs are those that an individual must hold to interact with the world but that can easily be adjusted or discarded as needed to accommodate their core beliefs.

A potential core belief held by a Christian might be that the account of creation as presented in Genesis is true. An auxiliary belief—known more specifically as an "*ad hoc* auxiliary hypothesis," or AHAH—might be the assumption that one of the days of Biblical creation is a literal 24-hour day. Suppose that the Christian, at some later point, considers the evidence for evolution and finds it compelling. Must they discard their core belief in the truth of the Biblical creation story? Of course not; they need only trade one AHAH (that God created the world in seven *24-hour* days) for another (that God's days are not literal; if the sun and the moon have not yet been created, one of God's metaphorical "days" could stretch on for billions of years). Thus, as described by Gershman (2019), AHAHs form a "protective belt" around core beliefs, alleviating the pressure of potential disconfirmation.

A text is more likely to be interpreted as meaningful when it affirms the reader's core beliefs. More specifically, meaningful texts demonstrate the robustness of a given core belief by placing it within a novel constellation of auxiliary beliefs—showing that the essential core belief holds, even in foreign circumstances.

In the context of narrative, core beliefs are ones that the reader holds most closely when trying to infer the meaning of a story. These might be assumptions about topics such as social structure (*e.g.*, how parents are supposed to treat children), morality (*e.g.*, whether good conquers evil), or mating (*e.g.*, a monogamous heterosexual relationship constitutes a desirable state of equilibrium). In fiction, auxiliary beliefs constitute a large range of potential beliefs, such as the existence of wizards or aliens. This is a key difference between AHAHs in fiction and those in real life. In everyday existence, observing an instance of magic activity would violate a core belief held by many readers of this paper (two, actually: the existence of muggles as a natural kind, as well as one's own inclusion in the category).[1]

In any fictional text, there is an implicit compact between author and reader which says that certain elements of the story require suspension of disbelief in order to get at certain core truths (Coleridge, 1817; Tolkien, 1947). In mass market fiction (such as *Harry Potter*), the author-reader compact only requires the reader to relinquish auxiliary beliefs (such as whether witches and wizards really exist) without challenging core beliefs about the power of friendship or the triumph of good over evil.

By contrast, an aim of "literary" fiction (such as James Joyce or Han Kang) is often to challenge a reader's core beliefs. *Ulysses* may challenge the reader's assumptions about the stream of consciousness—such as the assumption that it should be relatively straightforward to follow when rendered in verbal form or the assumption that it would conform relatively well to social mores for public behavior. Likewise, *The Vegetarian* may challenge core beliefs about the relational structure that define families and the strictures those relations can place on individual autonomy or expression. These texts are considered literary achievements (in part) because they innovated new ways of interrogating the closely held core beliefs of their audience. Note, however, that both retain a standard canon of AHAHs. Neither *Ulysses* nor *The Vegetarian* require much in the way of modifications to beliefs about whether a day contains 24 hours or the existence of people who do not eat meat.

To accommodate this distinction within our model, p can also be defined as

$$p = f(b_c, b_a) \tag{6}$$

where b_c are the core beliefs that a reader infers from a text and b_a the auxiliary beliefs implied by the author-reader compact as necessary to hold in order to affirm the core beliefs. Both are drawn from a larger set of beliefs, $\mathcal{B}$.

[1] Though this is not true of all cultures; in many contexts, an observer would be completely unsurprised to encounter an actual instance of magic, where it is considered part of the standard repertoire of human activity (Luhrmann, 1991; Malinowski, 1948).

Difficulty of Event Segmentation

The second factor that helps to determine whether a reader will find a satisfactory interpretation of a text comes with finding a, the key features or events of the texts. As stated previously, the set of possible interpretations that can be applied to a text is large. Therefore, if the author introduces uncertainty over event segmentation (such as by having a key passage take place in a dream, without directly disclosing that the protagonist is dreaming), this will introduce uncertainty into the interpretation needed to render the text meaningful.

For example, there is no difficulty in event segmentation when following the plot of a *Harry Potter* book. The key hinge points of the plot may be obscured by presentation order but are easily found once the story is done. By contrast, in Han Kang's *The Vegetarian* the protagonist's explicit motivations for becoming a vegetarian are never fully disclosed. Part of the book's thrust—that is, if the reader finds herself able to infer a meaningful p—is the lack of discernible logic underlying this decision and the characters' various responses to that illogic. Indeed, the actions of the protagonist are primarily presented through the lens of characters who do not really understand her. This obscuring of the protagonist's motivation (and the titular decision driving the book) makes it more difficult for a reader without relevant literary training to infer the necessary p. It is also what makes it a literary achievement (Han Kang won the Nobel Prize for Literature in 2024). Whereas *Harry Potter* draws primarily on a widely-shared p, Kang's text requires that readers be able to locate and understand events in the context of a more specific and nuanced literary technique and tradition.

Discussion

Our main goal in this paper has been to provide an account of how psychologically meaningful experiences are inferred from the material an individual's life events. Our main contention is that a meaningful experience is one that goes beyond (simply) an experience that makes sense: its sense derives from the use of certain culturally shared scripts. Individuals draw on these scripts to situate their specific experiences within a broader narrative—one that is compelling both to themselves and those around them.

Experiences are not intrinsically meaningful

Our account differs from one typically offered by fields like positive psychology, which often imply that certain events are essentially more meaningful than others (King & Hicks, 2021; Steger et al., 2006; Rogers et al., 2023). Instead, our account suggests that when participants in a psychology experiment tend to endorse having children, succeeding at work, or spending time with family as more "meaningful" it is not because those activities form the immutable fabric of meaningful existence. They do so, rather, because those are the activities for which they have the relevant cultural scripts to hand. In terms of our model, these experiments are providing evidence about what kind of cultural scripts p are readily available to their study's cohort of participants, rather than the idea that they are among a limited set of experiences a out of which meaning can be made.

In the strongest version, our model suggests that there is no limit to what can be included in the feature set a. If a psychological study has not yet found a cohort of participants capable of inferring a meaningful p based on a given a, it is not because the events in a lack intrinsic meaning; it is because the psychologists have not yet found a group who endorses them.

In a weaker version, our model suggests that whether a participant endorses an experience as meaningful depends not simply on the nature of the experience itself but the cultural scripts they have for interpreting it. For example, this is consistent with recent evidence showing that people are more likely to endorse experiences or outcomes as meaningful when they have dedicated a great deal of effort to carrying them out (Campbell, Wang, & Inzlicht, 2025); effort, here, serving as a sign that scripts have been found, or created, as a by-product of pursuing the task itself.

Meaning-making Scripts are inferred from cultural artifacts

A key aspect of the process described by our model is that scripts are not always part of an individual's explicit knowledge. This is a common challenge in cultural evolution (Miton & DeDeo, 2022): how can a practice that relies upon tacit knowledge be transmitted from person to person if essential parts of the practice cannot be directly articulated?

Our claim is that cultural artifacts—and, in particular, experience-rich stories—play a key role in the transmission process. Members of a culture encounter these stories, and in attempting to make sense of them, learn the underlying scripts that come to constitute their set of scripts $\mathcal{P}$. Tacit scripts cannot be shared, but stories can be, and the process of education is, in part, one of selecting enough of these artifacts to aid a student in inferring the basis set of cultural scripts required to operate as a member of their society. Both teachers of humanities disciplines (such as literature) and stories presented for mass consumption (such as movies) guide individuals in their process of noticing the key events within the stories, strengthening the implicit p by providing repeated and varied samples of the a—likely in accordance with pedagogical sampling (Shafto, Goodman, & Griffiths, 2014).

This is consistent with a prominent framework for cultural anthropology, in which a successful ethnographic account explains how group-specific symbols provide crucial structure for culturally endorsed activities of meaning-making (Geertz, 1973). Bruner's own answer to how cognitive science ought to approach meaning was highly influenced by this school of anthropology (Bruner, 1990, p. 20), writing that "culture and the quest for meaning are the proper causes of human action." Our account here grounds this culturally-based approach within individual cognitive processes and their computational limits.

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