

Chapter 10

Meaning and the Horizon of Interpretation: How Goals Structure Our Experience of the World

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Existential Hermeneutics

No objective meaning exists in the world; meaning is always contingent on the relationship between the world and the subjectivity of the observer. This simple notion of “existential relativity” is one of the most important contributions of existentialist philosophy to contemporary thought. Rather than viewing the world as a landscape of predetermined and objective meanings, existentialists emphasize the role of subjectivity in human experience. It is not the world itself that generates meaning; it is an individual’s being in the world (Heidegger 1927/1962).

A number of thinkers have concluded that if the experience of value and meaning is always contingent on our own subjectivity, the meanings that we ascribe to the world are ultimately arbitrary and inconsequential (Camus 1955). A religious artifact, for example, is imbued with a sense of power and mystery to the faithful, but might be viewed as a useless trinket by a nonbeliever. Recognition that the artifact has no inherent meaning other than that ascribed to it by the devotees may undermine the subjective value of the object and thus result in disillusion. More generally, disillusion with traditional belief systems has been one of the historical legacies of existentialist ideas.

An alternative school of thought takes the notion of contingent meaning as the foundation for a brand of humanism focused on the personal freedom and responsibility to create a sense of meaning for one’s self (Nietzsche 1887/1967; Sartre 1946/2007). Rather than being constrained to the meanings that we inherit from tradition and cultural authorities, these schools of existentialism celebrate the

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creative striving for self-definition and authenticity. Kierkegaard even famously suggested that awareness of meaning's contingency can inspire *greater* religious devotion by allowing "a leap of faith," in which spiritual meanings are endorsed despite their lack of objective verification (Kierkegaard 1846/1944).

Given the awareness that subjectivity plays an important role in the creation of meaning, it becomes clear that questions of meaning are fundamentally related to questions of interpretation. The emergence of existentialist philosophy was in fact heavily influenced by the study of interpretation, as carried out in the field of hermeneutics. Hermeneutics was traditionally concerned with interpreting the meaning of written texts (including biblical scriptures) and understanding the rules that govern this interpretation. In the nineteenth century, the field of hermeneutics expanded from the study of written texts to the study of any communicative act (Schleiermacher 1838/1998) or understanding of the world more broadly (Dilthey 1883/1991). It was Martin Heidegger and his student Hans-Georg Gadamer who most clearly launched the "ontological turn" in twentieth-century hermeneutics by applying hermeneutic ideas to the study of being (Gadamer 1960/1994; Heidegger 1927/1962). The critical insight that was proposed by these thinkers is that the nature and meaning of one's existence requires interpretation, and this interpretation is situated within a variety of physical and temporal constraints.

Heidegger and the other existentialists were able to generate profound insights into the nature of human experience. However, they were writing in a time when very little scientific data was available about the human mind. Consequently, their ideas were rooted much more strongly in philosophical tradition than scientific discourse. Heidegger even explicitly argued that the nature of human experience could not be studied from a scientific perspective. As evidenced by the current volume, however, the scientific study of meaning is a flourishing topic. This renewed interest in meaning owes a great deal to the emergence of cognitive science during the second half of the twentieth century. This chapter focuses specifically on grounding existential ideas of hermeneutic dynamics within the frameworks of contemporary psychology and cognitive science.

Possible Meanings and the Horizon of Interpretation

An important idea proposed by Heidegger and elaborated by Gadamer is the notion of the "horizon of interpretation," sometimes referred to as the horizon of understanding or horizon of possibility. This term refers to all of the possible meanings that can emerge from an individual's experience of a phenomenal event. This possibility space is defined as a function not only of the objective physical characteristics of the situation but also of the knowledge structures and interpretive frameworks within the observer. Any meanings that are experienced by the individual must first exist within this horizon of interpretation. Potential meanings that lay outside of the horizon cannot be experienced because (a) the individual is incapable of apprehending such

meanings or (b) the situation does not feature any physical characteristics that are associated with these meanings. Heidegger suggested that each individual inhabits a unique subjective landscape defined by the way in which that person's idiosyncratic interpretive knowledge base interacts with a narrow and limited part of the world. The realm of possible meanings, or the space of being ("*dasein*"), thus varies enormously from one individual to the next, depending on their conceptual structures and the phenomena to which they are exposed.

Heidegger, and later Gadamer and Sartre, also emphasized the situated nature of this horizon of interpretation. An individual's interpretive structures do not exist in some abstract metaphysical plane; instead, they are inextricably linked to the embodied experience of being in the world. Accordingly, these interpretive structures can be influenced by a number of factors including an individual's physical characteristics, social environment, cultural background, and previous experience. All of these factors define the experiences of meaning that the individual is capable of producing. Even "fundamental categories" of experience such as space and time can be experienced very differently in distinct cultural and linguistic contexts (Boroditsky 2001; Levinson et al. 2002).

How then can we understand the horizon of interpretation within the context of contemporary cognitive science? A useful starting point is the principle of parallel constraint satisfaction described in connectionist neural network models (Bishop 2006). These models attempt to provide biologically plausible explanations for how different patterns of neural connectivity and activation can support cognitive functions such as perception and the extraction of meaning (Rogers and McClelland 2004). As an example, suppose that an individual encounters a phenomenal event and is tasked with determining its meaning. A connectionist model would include descriptions of the event's sensory characteristics, along with a model of the individual's conceptual structure (instantiated as the strength of association between various sensory characteristics and a number of possible meanings). The conceptual structure can be relatively simple, with fewer categories of meaning, or more complex, with a larger number of possibilities. In either case, the model attempts to settle into an interpretation of the event through a process of pattern recognition and neural competition between potential outcomes (Desimone and Duncan 1995; Rogers and McClelland 2004).

A probability distribution of possible meanings emerges out of this process, weighted by the strength of activation of each of the different possibilities. This probability distribution defines the horizon of interpretation, cast in the language of cognitive science and probabilistic categorization. The weighted activation of any potential interpretive frame is affected by the current state of the world (e.g., the presence of associated physical characteristics) and the cognitive system (e.g., the activation of associated sensory information, episodic memories, and somatic experiences). In some situations, the horizon of interpretation will be relatively narrow, indicating that only a few potential meanings are likely to be engaged. These situations tend to involve the automated extraction of meaning in familiar contexts, requiring minimal thought and producing minimal conflict. Such situations

are those in which the meaning of an event is likely to be taken for granted, as there are virtually no competing interpretations vying for control. A visit to the dentist, for example, is a well-scripted situation in which there are clear cultural norms for interpreting the situation.

In other situations, however, the horizon of interpretation will be relatively broad, with a large number of potential meanings receiving simultaneous activation. This is more likely to occur in ambiguous situations with open-ended possibilities, such as during an unscripted encounter with an unfamiliar social group. In situations such as these, the appropriate interpretive framework is not immediately clear, and there are multiple ways of construing the same event. The uncertainty and indeterminacy that result from this ambiguity in meaning is often experienced as aversive (Hirsh and Inzlicht 2008; Hirsh et al. 2012; Peterson 1999) and appear to be akin to what existentialist philosophers describe as “angst” (Kierkegaard 1844/1957).

When the horizon of interpretation is conceptualized as a probability distribution, an interesting parallel can be drawn to the wave function as described in quantum physics (Von Neumann 1935/1996). The defining characteristic of quantum physics is that it describes the world in terms of quantum potential, or what *could* be observed prior to actual measurement. In the classic example, light can be observed as either a particle or wave, depending on the measurement apparatus that is employed. Prior to measurement, the light is said to be in a state of “superposition,” in which all possibilities are simultaneously true (e.g., it exists as both a particle and a wave). Erwin Schrödinger formalized the probability distribution of the potential states of a quantum system in his equation for the wave function. As soon as the quantum system interacts with an observer through measurement, the wave function is said to “collapse” into a particular reality and all other possibilities are immediately eliminated.

Understanding the horizon of interpretation as a probability distribution of potential meanings allows for an analogous “quantum” perspective of meaning. Prior to engaging with a given phenomenon, there exists a probability distribution of meanings that can be extracted from it as defined by the joint characteristics of the observer and the phenomenon itself. At this point, there is only a distribution of potential meanings, with no particular meaning actually being experienced. As soon as the individual encounters the event, however, the process of parallel constraint satisfaction begins to collapse the distribution into a single dominant meaning that gives form and structure to the experience. Where the analogy falls short, however, is that we sometimes encounter phenomena that do not collapse so easily into a single meaning. Some events may in fact be extremely ambiguous, requiring longer periods of examination before a stable interpretive frame can emerge.

While the basic structure and operational outlines of the interpretive system can be understood within a cognitive framework, the question remains of how such a system can be employed to flexibly respond to life’s challenges. What adaptive constraints guide the spread of possible meanings, allowing us to function in the world without getting lost in the infinite possibilities of a flexible meaning system? To address this question, it is useful to consider the insights into human psychology provided by evolutionary theory.

Evolutionary Perspectives on Meaning

Like other organisms, humans are fundamentally goal-directed creatures. From an evolutionary perspective, the primary task of a nervous system is to facilitate the pursuit of adaptive goals that promote survival and propagation of the species (Swanson 2003). A critical component of this task is the ability to discern the significance of incoming sensory information. In the most general sense, the “significance” of this information refers to its implications for action, a notion captured in pragmatic approaches to perception (Gibson 1979) and language (Wittgenstein 1953/2001). At a fundamental level, the brain is thus a meaning-making organ, tasked with identifying the behavioral significance of sensory input. It is critically important, for example, that an organism can differentiate the meaning of a cue signaling potential threat from one that signals potential reward. Nervous systems that fail to support this adaptive meaning-making will be unable to respond appropriately to environmental signals and will ultimately be eliminated by natural selection.

It is important to note, however, that the range of potential meanings differs greatly between species. For simpler nervous systems, the task of identifying the behavioral significance of incoming sensory information is limited to a selection from a small number of fixed response categories. An amoeba, for instance, has only two basic responses to tactile stimulation: it can withdraw from the stimulation or it can move to engulf the source of the stimulation. In this extreme example, the amoeba’s “horizon of interpretation” is limited to two possibilities. As a result, the task of meaning-making is vastly simplified. Nonetheless, a faulty interpretation can still result in catastrophe if, for example, the amoeba attempted to engulf a larger organism.

As nervous systems became more complex throughout the evolutionary process, the selection between competing interpretations of sensory stimuli also became more complex. Inhabiting a greater range of environments and being capable of producing a greater range of responses necessitated the development of more complex interpretive structures. Humans are recognized for their ability to flexibly adapt to environmental circumstances, as well as the ability to flexibly define conceptual categories (Barsalou 1983). Consequently, we have a tremendously expanded horizon of interpretation when compared to other animals, with an enormous range of possible meanings that can be brought to bear on an experience. Given the flexibility and productivity of human language, there are potentially an infinite number of meanings that we can ascribe to any single experience.

Given the immense range of meanings that can be derived from an experience, how are we able to settle on an adaptively appropriate interpretation? If, as some existentialists have argued, the meanings that we settle upon are truly arbitrary, how have we managed to survive for so long? The very fact of our existence suggests that humans are on the whole capable of generating interpretations that produce adequate responses to environmental challenges. This suggests that we have inherited certain predispositions that help to adaptively constrain the spread of possible interpretations. A likely source of these adaptive constraints can be found in the motivational systems that govern goal-directed behavior.

Motivational Systems as Fundamental Constraints

Darwin was the first to note that humans have evolved a number of distinct emotional systems that help to organize the appropriate response to common adaptive challenges (Darwin 1872). Disgust, for instance, appears to facilitate the identification and avoidance of potential contaminants (Rozin and Fallon 1987). Whenever a disgust-triggering situation is encountered, the brain's disgust networks engage a stereotyped pattern of cognitive, behavioral, and physiological responses that promote this contamination avoidance. Similar parallels can be drawn for other motivational systems, including those related to feeding, social bonding, self-defense, and reproduction. Each of these motivational systems is associated with a distinct brain network, which when activated helps to organize the appropriate response to the triggering events (Panksepp 1998). As for which stimuli activate these systems, there appear to be a number of evolved predispositions to associate certain sensory characteristics (e.g., snakes or brightly colored fruit) with an appropriate motivational response (Isbell 2009; Öhman and Mineka 2003).

A critical function for these systems is to ensure that people are able to appropriately recognize and respond to information that has adaptive significance. From an evolutionary perspective, these systems constitute the fundamental categories of meaning by which events in the world can be interpreted. The most important task for any meaning-making organism is thus to successfully categorize environmental input into one of these motivational categories so that an appropriate response can be generated. The fact that the same basic motivational architecture is shared by everyone thus provides a common constraint for the creation of shared meaning. An important implication of this fact is that the meanings which we extract from a given experience are not completely arbitrary; they are deeply constrained by our evolved predispositions to categorize events by their motivational significance.

Our inherited motivational architecture thus provides the key constraint on the horizon of interpretation, allowing our experience of meaning to operate within certain adaptive limits. It should be recognized, however, that the space of possible meanings is not set in stone. In fact, the interpretive flexibility of the human mind allows for large shifts in meaning to occur. In many cases, these shifts result from the gradual acquisition of new information and experience, which alter the knowledge base of the individual and therefore change the distribution of potential meanings that can be apprehended. In other cases, however, the shift in meaning can appear sudden and dramatic. Such dramatic shifts can be usefully understood by considering the effects of an individual's current goals on the horizon of interpretation.

Goal Activation and the Dynamics of Interpretation

Goals help to organize behavior around desired outcomes (Austin and Vancouver 1996; Carver and Scheier 1998). While some goals may seem to be relatively abstract or symbolic, they are ultimately instantiated by the same basic motivational systems described above, with the aim of providing the individual with valued

resources or experiences. As the attainment of these basic social and biological needs becomes more complex, nervous systems must develop into more highly differentiated networks of goal-directed activity.

Importantly, the goals that are adopted by an individual serve to bias both perception and action in line with goal-relevant information and behavioral options (Aarts 2007; Bargh and Chartrand 1999; Bargh et al. 2001). From a neural perspective, goal-related biases on information flow are instantiated by top-down attentional control mechanisms in the dorsolateral prefrontal cortex (DLPFC). These DLPFC mechanisms constrain the activation of perceptual and motor schemas in the rest of the brain (Miller 2000). As an individual's goals change, so does the distribution of possible meanings that can be derived from the same experience. The horizon of interpretation can thus change rapidly as an individual adopts a different goal, altering the existential substrate from which meanings emerge (Hirsh 2010).

An individual's personality characteristics can similarly influence the meanings which he is likely to derive from his experiences. Variation in personality in part reflects dispositional variation in the relative strengths of the basic motivational systems described above (DeYoung and Gray 2009). For example, extraversion appears to reflect the dispositional sensitivity to reward, while neuroticism reflects the dispositional sensitivity to threat (Corr 2004; Elliot and Thrash 2002). An implication of these differing motivational sensitivities is that the chronic goals an individual is likely to adopt will be heavily influenced by his personality characteristics (Roberts and Robins 2000). A highly agreeable individual, for example, is more likely to have a chronically active motive for promoting intergroup harmony and belongingness (Graziano and Eisenberg 1997). As a consequence, these goals and motivational systems will have a stronger activation during any encounter with the world and are more likely to influence the interpretation of an event. The horizon of interpretation will thus be curved around an individual's chronically active goals, such that they will become the dominant framework by which meaning is created.

In extreme cases, an individual may be characterized by a powerful concern with a single motivational dimension. A narcissist, for example, is obsessed with concerns of status and social prominence, such that experiences tend to be interpreted from the perspective of whether or not their grandiose self-image was maintained (McCullough et al. 2003). Similarly, an individual with social anxiety is more likely to interpret an ambiguous situation as an indication of social rejection (Downey et al. 1998), and an individual with antisocial personality disorder is more likely to perceive aggression in others (Crick and Dodge 1994). Each of these examples suggests that an important component of psychopathology may be a narrowed horizon of interpretation, such that a single motivational category comes to dominate an individual's experience of the world. An excessively narrowed horizon of interpretation could therefore hinder the flexible deployment of adaptive responses to changing circumstances.

Individuals with relatively high standing on various personality dimensions may also find it difficult to relate to those with different personality profiles. If the personality differences are sufficiently large, there may be very little overlap in the horizons of interpretation. Consequently, two individuals with completely different personality profiles are likely to derive very different interpretations

of the same experience. One example of this appears in the domain of political polarization, in which people are often categorized into liberal or conservative groups. Each of these political orientations is associated with a distinct personality profile, such that conservatives tend to be more concerned with order and tradition while liberals are more concerned with compassion (Hirsh et al. 2010). As a result, communication between these different groups is sometimes difficult, with very different interpretive structures being employed by the different camps (Lakoff 2002). More generally, the extent to which individuals have a shared horizon and are likely to produce similar interpretations of the same event depends upon the similarity of their goals, motives, and knowledge bases.

Expanding the Horizon: Strategies for Creating Meaning

As described above, the experience of meaninglessness is considered one of the challenges of adopting existentialist ideas. Authors such as Viktor Frankl have emphasized the search for meaning as one of the most important human struggles (Frankl 1971). Postmodern thinkers have similarly expressed concern over the effects that interpretive instability can have on people as traditional authorities lose their capacity to bind people within a common meaning system (Lyotard 1984). How then can reliable meaning frameworks be created in a postmodern world, where objective value is indeterminate?

An interesting implication of the relationship between an individual's goals and the experience of meaning is that a sense of meaninglessness is most likely to afflict people without clear goal structures. Goals serve to structure the interpretation and prioritization of environmental information (Peterson 1999). If an individual does not have any personal goals, there will be fewer constraints on the horizon of interpretation that help to give a well-defined sense of meaning and importance to any given experience. Adopting personal goals is in fact associated with a greater sense of meaning and purpose in life (Emmons 1986; McGregor and Little 1998). One of the most effective strategies for creating a sense of meaning in one's life thus appears to be the clarification of one's most valued goals.

For some people, however, the experience of meaninglessness may in fact be due to the overreliance on a single goal structure. As an example, an individual with the narrowly defined goal of "making money" has limited the realm of important events to those relating to personal finance. Any experience that does not relate to money would in turn be discarded as personally irrelevant. Such a goal might decrease the experience of personal meaning, because the range of potentially relevant events is vastly constricted (Kasser and Ryan 1993). Expanding such an individual's capacity to experience meaning may involve loosening the grasp of the dominant goal so that alternative goals can shape the process of meaning creation.

A related strategy for meaning creation involves actively seeking out new experiences, as instantiated by encounters with new physical, social, and cultural environments. If only a single environment is explored, the range of encountered

phenomena will be relatively narrow. The meanings that can be derived from such experiences will likewise be narrowed in range. As the range of phenomena to which we are exposed expands, so too does the range of meanings that we can experience. It is no surprise that immersive travel to new locations is often accompanied by an experience of self-transformation (Noy 2004).

Finally, the horizon of interpretation can be expanded by altering the structure of the interpretive system itself. One of the most common strategies for accomplishing this goal is engaging with aesthetic domains such as visual art, music, literature, and drama. Aesthetic experiences are capable of altering the manner in which an individual perceives and experiences the world. For example, engaging with fictional narratives allows us to simulate social environments that in turn can affect our perception of meaning in real-life social situations (Mar and Oatley 2008). More generally, engaging with the arts can result in transformative experiences that alter the perception of one's self and the world (Djikic et al. 2009). Even encounters with the knowledge structures provided by philosophy, mathematics, or scientific inquiry can alter our horizon of possibility by changing the categories that we use to interpret our experiences. With every piece of information that we acquire, the range of possible meanings is altered.

Summary

Existentialism has had a profound impact on contemporary thought. In particular, we now recognize the critical importance of human subjectivity in shaping the experience of meaning. In this chapter, the principles of cognitive science and evolutionary psychology were applied to Heidegger's existential hermeneutics. Two core ideas from this approach are that the horizon of interpretation can be understood as a probability distribution of potential meanings and that evolved motives provide adaptive constraints on the process of interpretation. A key implication of this model is that an individual's currently active goals heavily influence the meanings that are experienced in any given moment.

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