The Influence of Perception on the Search for Meaning in Counseling

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Citation for this article:
Abstract

Human perception is a complex process in which raw sensations are processed by the brain and actively interpreted. The interpretations we give to our sensations are often distorted and inaccurate, and optical and auditory illusions demonstrate that human perception is a creative act. The fact that we have the ability to interpret our perceptions and experiences in a variety of ways, including either positive or negative, means that to some extent we create our own experience of the world. This has important implications for counseling and psychotherapy.
The Influence of Perception on the Search for Meaning in Counseling

Perception is a complex and creative process that determines much of how we live. Although it would be nice to think that our sense organs faithfully transmit accurate information about the world around us, they actually provide raw data that is meaningless until it is interpreted by the brain. Consciousness is always active and selective, and every perception is shaped by us (Sacks, 2005). The philosopher Kant asserted that we can never have absolute knowledge of things themselves, only relative knowledge of things as we perceive them; absolute truth or knowledge is therefore impossible, and we are bound to our relative and subjective human perspectives which are structured by the way our sense organs and brains process information (Kant, 2003). Will Durant summarized Kant's point as "The world as we know it is a construction" (quoted in Gilbert, 2006, p. 85). The silver lining in this apparent cloud is that if there is no objective truth about reality (including, for example, our problems in living), then we are free to reinterpret our experiences so they are less problematic for us. Learning how some aspects of human perception works can be of direct benefit to counselors, who can help clients change their perceptions of their problems and concerns.

Humans are highly visual creatures; most of the occipital lobe of the brain is devoted to visual processing, and half of the cortex is involved with sight (Ramachandran & Rogers-Ramachandran, 2006). Humans receive 80% of their information through vision (Kramer, 2006). Vision is an extremely complex and sophisticated process, and has much in common with problem solving. We seem to have a need for a single, sensible narrative of the world, and we try to make meaningful interpretations of our sensations (Ramachandran, 2004). When presented with a picture that at first appears to
be random splotches, our visual brain tries to make sense of the chaos, and after staring at the image for a while it clicks into place; most viewers spot the Dalmation dog in the picture. In this case, it takes a while for our brain to correctly interpret the sensory stimuli. In other cases our interpretations of visual stimuli are demonstrably wrong, as illustrated by many optical illusions.

It is helpful to understand the difference between sensation and perception. The word "sensation" refers to receiving sense impressions through the direct stimulation of our bodily sense organs; "perception" refers to how the brain processes and organizes the information that the sense organs receive (AllPsych, 2004). The perception of an object is a hypothesis (Gregory, 1997). Ambiguous figures (such as the well known candlestick/faces figure) clearly show how the same pattern of stimulation entering the eyes can give rise to different perceptions in the brain (Seckel, 2005). The eyes see one image, but the brain perceives two images.

Because sensations result from the activation of sensory neurons, they are not valid or invalid. Sensory neurons simply fire whenever they are sufficiently stimulated by light, sound, touch, odor, and so forth. However, since perception involves the active interpretation of sensations, our perceptions can be valid or invalid. Optical illusions illustrate that sometimes what we clearly perceive is not what is actually there. Our brains look for patterns in sensory data, and they are guided in part by what we expect to see or hear. Thus, perception is, in part, a constructive and creative act.

Pareidolia and Apophenia

Various optical and auditory phenomena illustrate the fallibility of human perception and our tendency to identify patterns in random stimuli. Pareidolia is a type of
illusion or misperception that refers to seeing images in a vague or obscure stimulus (Todd, 2004). Images seen in vague stimuli are also called simulacra (Carroll, 2003). For example, people sometimes say they see faces in clouds, rocks, and trees, and many geographic features are named for what they resemble, such as "Coffee Pot Rock" or "Camelback Mountain." The ability to interpret vague stimuli quickly can be very useful, but people can also convince themselves that they saw Elvis, Bigfoot, or Jesus. Creative people can use the phenomenon of pareidolia deliberately in their artistic activity. Leonardo da Vinci said that he saw exquisite landscapes in the texture of a mildewed wall, and he advised his students to let such random patterns feed their imaginations (Richter, 1970).

Another term used to describe such perceptual phenomena is apophenia, which refers to seeing or hearing a meaningful pattern in random or meaningless stimuli (Carroll, 2003). Apophenia could be seen as an error of apperception. In statistics it is called a Type One error, which is seeing patterns where none exist. While simulacra are visual images, apophenia can refer to visual or auditory phenomena.

Other examples of simulacra include seeing the man in the moon, seeing constellations as human figures, seeing rock outcroppings as faces, and seeing animals in oddly shaped vegetables. The single most common figure people see in natural forms and objects is probably a human face. This makes sense from an evolutionary point of view, since it has always been important for people to be able to read other peoples' faces to check for danger, fear, or anger (Shermer, 2005).

For at least 2000 years, religious believers have reported that they have seen images of sacred figures in clouds, in flares around the sun, and in geographic features. In
the past 20 years there have been numerous reports of religious believers seeing sacred figures in window reflection and stains on buildings (e.g., see Marion Communications, 1991). This tendency to perceive patterns in random stimuli would seem to approach absurdity when people say they see the face of Jesus in a tortilla or the image of Mary in piece of burnt toast. The phenomena of pareidolia and apophenia provide a simple naturalistic explanation for divine apparitions, without recourse to the supernatural.

   Many forms of fortunetelling and divination rely on the human tendency to see things in random stimuli. This includes seeing patterns in quartz crystals, the entrails of animals, the stars, the lines on the palm of the hand, the tea leaves left in a cup (Todd, 2004). From an objective point of view, predicting the future based on tea leaves is impossible because there is no reason to think that what is "seen" in the random pattern of the leaves is actually there. However, what someone sees in the leaves could say something about the person who sees it, since what they see may be a projection of their personality.

   Auditory Illusions

   Most people are very familiar with optical illusions, but auditory illusions have also been studied by psychologists. In the 1930s behaviorist B. F. Skinner invented a device called the "verbal summator" (later renamed the "tautophone") which was an auditory version of the Rorschach inkblots (Rutherford, 2003). A phonograph record with muffled vowel sounds was played and listeners were asked to report what they heard in the ambiguous sounds. Many people said they heard words and phrases. It was speculated that what a person heard could provide insight into the person's unconscious mind and personality.
Neuroscientist John Lilly made an audiotape with the word "cogitate" looped so that the word was repeated over and over for several minutes (Lilly, 1973). After playing the tape for several hundred people (without telling them what was on it), he found that listeners reported hearing over 2,000 different words and phrases. More recently, Deutsch (2003) has produced several similar recordings with excellent demonstrations of various auditory illusions, including several new versions of Lilly's experiment.

So-called subliminal messages in songs played backwards could also be seen as an example of auditory apophenia. Although the messages are not actually there, a listener who wants to hear meaningful phrases can usually hear them. Another example of auditory apophenia is electronic voice phenomena (dramatized in the movie White Noise (Brooks, 2005). Investigators turn on tape recorders in a supposedly haunted house and invite the spirits to speak. Later they play the tape back while trying to hear words in the white noise on the tape (Alcock, 2007). If you scan enough white noise, eventually you will find something that sounds meaningful, whether it is there or not (Shermer, 2005). Because perception is subjective, it is difficult to say that someone else does not hear words in the white noise. But apophenia would seem to be a more likely explanation than dead people talking.

Everyone is susceptible to the error of apophenia (seeing meaning in meaningless stimuli). This tendency to see meaning where there is none shows the need for people to demand adequate evidence for unusual claims, rather than just accepting the often faulty evidence of the senses. For example, anecdotal reports by people who say they saw an alien spaceship in the sky would usually not be considered adequate evidence for the existence of such a craft; an actual physical craft on the ground which could be examined
by scientists might be considered adequate evidence. Apophenia and pareidolia are understandable in some situations, but such perceptual errors can hinder critical thinking and lead to illusory beliefs (Todd, 2004).

We can be highly motivated to seek meaning in what we see or hear or in what happens to us, and the more motivated we are to seek meaning, the more likely we are to find it. Assertions like "there are no accidents" (Hopcke, 1998) and "everything happens for a reason" (Kirshenbaum, 2005) are heard often. Such beliefs may be adaptive since they may reduce stress, but there is no evidence that they are true, and they are probably not testable assertions.

Projective Perception

One interesting aspect of perception is that we have unconscious expectations and motivations regarding what we see in ambiguous stimuli; this is the assumption behind projective assessment. Projective techniques present the client with unstructured stimuli and take advantage of the phenomenon of pareidolia. The Cloud Picture Test by Wilhelm Stern was one of the first projective techniques; people were shown pictures of clouds and asked to say what they saw in the clouds (Aiken, 1999). Whatever people see is presumed to reveal something about the person's unconscious mind. There is plenty of evidence that much of what we do is the result of unconscious processing in the brain (Phillips, 2006).

Hermann Rorschach was a Swiss psychiatrist and the son of an art teacher. Other people had used inkblots to study visual imagination, and a popular game called Blotto used inkblots as stimuli for creating poems or playing charades. Rorschach enjoyed the game and tried showing the inkblots to his psychiatric patients; he noticed that many
schizophrenic patients saw similar images in the inkblots. He refined the technique and published the test with ten inkblots in 1921 (Aiken, 1999).

In projective tests like the Rorschach it is assumed that whatever structure is imposed on the stimulus material is a projection of the respondent's view of the world. The more ambiguous the stimuli, the more likely are the responses to reveal important features of the personality. It has been demonstrated that verbal responses to the inkblots are the end-product of unconscious thought processes (Millon, 2004). It is reasonable to surmise that pareidolia and apophenia function, at least in part, on unconscious desires and motivations.

The term apperception, as in the Thematic Apperception Test, refers to understanding something new by relating it to what is already known (Wolman, 1989). Perceptions are predisposed based on heredity and environment; a person would not see a wombat in a cloud if they had no knowledge of what a wombat is or looks like. Culture is an important influence on perception. For example, when Americans look at the moon they tend to see the face of a man. In contrast, East Indians see a rabbit; Samoans see a woman weaving; and Chinese see a monkey (Schick & Vaughn, 1995). Perceptions can also be primed. For instance, telling someone what to watch for or listen for increases the chance of perceiving it. Projections, perceptual errors, and optical and auditory illusions are useful in that they can provide a window into the personal unconscious.

Since our view of reality is reliant on our sensory and perceptual mechanisms, and everyone's senses and experiences are different, in a sense each person lives in his or her own perceptual world. This does not mean there is no objective reality, but it does mean that we can never perceive the world exactly as someone else does, and we cannot
perceive without an interpretive filter. We absorb sensory information from the world around us and then interpret what we sense in an effort to make the information meaningful.

**Pattern Recognition**

Pattern recognition is the default mode of the brain's perceptual mechanisms; when presented with ambiguous, chaotic, or random stimuli, we cannot help trying to find a meaningful pattern (Shermer, 2000). This tendency is evidently a product of evolution. For most of human history people lived in the natural environment rather than the complex technological environment many humans live in today. The ability to recognize patterns in nature and distinguish dangerous things from harmless things had survival advantage for early humans. Identifying food plants at a distance would be helpful, as would identifying dangerous animals to avoid. The hypothesis is that over thousands of years we became creatures who are constantly surveying the environment and automatically trying to identify patterns (Shermer, 2000). Most of the time this tendency is helpful, since it helps us recognize friends and allows us to avoid dangers. However there are potentially negative implications of the fact that human perception is hyper-vigilant, imperfect, and biased toward noticing potential threats.

The tendency of our perceptual system to entertain different hypotheses about reality is often advantageous to us. But the cerebral cortex as a whole avoids ambiguity and prefers certainty, even if it is inaccurate. According to Gregory (1997), this is probably because the perceptual system in our brains has been important to our biological survival for much longer than the logical, intellectual part of our brains. The ancient parts of the brain relied on the visual sense to promote our survival. The rational thinking
cortex is much more recent, and is not as powerful. So we have a tendency to see patterns even when no pattern exists in reality.

Our predisposition for pattern recognition is good if the pattern we perceive reflects reality, but it can be bad if the perceived pattern is not really there. In the black splotches figure, there really is the image of a dog in the picture, although it may take a minute to perceive it. On the other hand, when we look at a visual stimulus such as a cloud and see the image of a face, there is not really an image of a face there. The cloud exists out there in our environment, but the face image exists only in the viewer's mind as a projection. Unfortunately, the human brain does not always show any special inclination for distinguishing reality from fantasy. Gregory (1997) pointed out that the great advantage of our pattern-recognition system is that it can function in the absence of adequate information by hypothesizing alternative realities. But when the system makes a wrong decision the result can be problematic.

Everyone is subject to psychological biases that may incline people to believe in false patterns, including the confirmation bias, the self-serving bias, and the attribution bias. For example, the confirmation bias is the tendency to look for and find confirming evidence for what we already believe and ignore disconfirming evidence (Shermer, 2005). The only way to avoid being influenced by such biases is to understand them, watch for them in ourselves, and deliberately combat them. Social psychologists have investigated how perceptions can be shaped by factors that lie outside awareness and how such perceptions relate to implicit biases, such as racial prejudice (Dasgupta & Asgari, 2004; Devine, 1995).
One negative consequence of inaccurate perception is that people sometimes draw maladaptive conclusions from what they perceive. For example, a person who is walking in a forest may see a rattlesnake on the path, but misperceive it as a stick, resulting in a snakebite. Our tendency to notice threats to our security or survival is often adaptive, but it also means that we naturally pay less attention to situations that are not threatening. This may be why anxiety disorders are so common; hyper-vigilance to potential threats can help a person survive, but at the cost of perpetual worry and focus on the negative.

The relative weakness of the rational thinking cortex compared to the strength of our perceptual system explains why it is so easy for people to believe in the irrational, from bizarre superstitions and religious beliefs to astrology, alien abductions, and the paranormal. The movie *The Number 23* (Flynn & Schumacher, 2007) dramatizes the fact that people who look for something, such as a particular number, will find it, and they may attach an occult significance to it. The search for patterns and meaning in disparate data can also be seen in conspiracy theorists, who may focus on interesting connections while ignoring alternative (and simpler) explanations. Of course some conspiracies may actually exist, but the point is that our tendency to look for and find connections in random data can lead us astray.

Another area where people often see great significance based on illusory patterns is the study of coincidences. A coincidence is defined as an accidental and remarkable occurrence of events, ideas, etc. at the same time, suggesting but lacking a causal relationship (Agnes, 2004). While some coincidences really are amazing, it would be even more amazing if there were no coincidences. Myers (2002) pointed out that even extremely unlikely events are guaranteed to occur; an event that happens to one in a
billion people in a day happens 2,000 times every year. Seeing mystical significance in coincidences is another example of the human tendency to construct meaning even where it does not exist.

According to Vyse (1997) all humans engage in magical thinking (such as superstitions) to some degree because it is built into the brain. The human disposition for finding patterns, even where they do not exist, can provide people with a sense of meaning and comfort, which is no small accomplishment. Having even an illusory sense of control may be better than having no sense of control at all. Although today science provides a way to determine which patterns are real and which are illusions, the belief in magic and the supernatural is likely to persist whenever uncertainties arise (Shermer, 2000).

Implications for Counseling

The fact that human perception is a creative and constructive process has several implications for counseling and psychotherapy. One is that counselors should recognize that they are not exempt from the human tendency to see meaning in random or ambiguous data. We tend to see what we look for. For example, Freudians see Freudian symbols in their client's dreams, Jungians see archetypes, and Gestalt therapists see aspects of the client's self. Dreams can be seen as the way our brains try to make sense out of the chaotic, random images generated by the unconscious (Kramer, 2006). To a large degree, the verbal data that a client presents in counseling is ambiguous; it is a description of how the client sees his or her reality, but that perception may be contributing to the client's problem. Counselors could see their task as helping the client see the ambiguous facts of their life from a more adaptive perspective. Situations that
clients have framed as problematic can often be reframed as challenges that draw on the clients’ resources.

Since the act of perception has an element of choice, we can consciously try to frame our perceptions in such a way that we are happier, our relationships are healthier, and our lives are seen as more meaningful. For example, we can choose to pay more attention to what is going well than to what is not going well. We can consciously decide to view our experiences more positively. We can focus on our strengths and resources rather than our deficits. We can focus on the present and the future rather than the past.

Counselors can help their clients develop similar good perceptual and cognitive habits. Several venerable approaches to counseling and psychotherapy emphasize the importance of choosing to construct perceptions that are realistic and helpful rather than negative and unhelpful (e.g., Yalom's Existential Psychotherapy, Frankl's Logotherapy, and Kelly's Personal Construct Therapy). Viktor Frankl could have become depressed and suicidal if he focused on his experiences in the concentration camps and the deaths of his relatives, but instead he made a conscious choice to focus his attention and energy on the future and the contribution he could make to psychotherapy (Frankl, 1959).

The weakness of the rational thinking cortex and the lack of widespread education in critical thinking skills helps to explain why so many people are vulnerable to holding false beliefs (or beliefs for which there is no evidence). Our tendency to value emotion over cognition could also help explain why it is so easy for many people to sink into anxiety and depression, and why it takes such a great effort to talk ourselves or someone else into a more healthy way of thinking. Cognitive approaches to psychotherapy are attempts to facilitate this process. According to Albert Ellis (2004), psychological
problems arise from misperceptions and mistaken cognitions about what is perceived, and Rational Emotive Behavior Therapy is based on the assumption that our emotional reactions are largely caused by our conscious and unconscious evaluations and interpretations. If negative emotions are based on particular interpretations of events, then changing those interpretations can lead to a decrease in the strength of the negative emotions. Thus, cognitive therapy focuses on intervening at the level of the personal interpretation of events.

Cognitive therapy builds on ancient philosophical and religious traditions. For example about 2500 years ago the Buddha said, "With our thoughts we make the world" (cited in Alper, 2002, p. 228). The author of Proverbs 23:7 said "As a man thinketh in his heart, so is he." The pre-Socratic philosopher Epictetus said "Men are disturbed not by things, but by the views which they take of things" (1948). The goal of cognitive therapy is to help clients modify their distorted or dysfunctional thinking and thus improve their mood and behavior (Beck, 1995). Research suggests that cognitive therapy is one of the most effective psychotherapies (Prochaska & Norcross, 2007), but even cognitive therapists would not say the process is easy. It can be a constant, daily struggle for people who tend to be depressed or anxious to consciously make the effort to change their way of thinking so that they are happier.

Another therapeutic approach that takes advantage of the human tendency to create patterns and meaning from random data is constructivist counseling (Neimeyer & Mahoney, 1995; Sexton & Griffin, 1997). In this approach humans are seen as constructing their phenomenological realities. Since direct knowledge of an objective reality is not possible, humans are forced to construct their own rendition of "reality." As
opposed to cognitive therapy, the goal of the counselor is not to help clients correct their distorted views of reality, but rather to help clients deconstruct their established view of reality and recognize that a more adaptive portrayal of reality is possible (Presbury, Echterling, & McKee, 2008). Constructivists are less interested in determining the truth of a situation than in helping clients view their situations in a way that utilizes their resources and frames their situation in a way that is hopeful and encouraging.

Narrative counseling is another innovative approach that recognizes the creative aspect of human perception (White & Epston, 1990). An assumption of narrative therapy is that all knowing is an act of interpretation, and that clients can be assisted to examine the problematic nature of the life story they have constructed and create an alternative narrative that is more positive (Gurman & Messer, 2003). In essence, clients are taught to change their perception of their situation. After counseling, the facts (sensations) may be the same, but they are interpreted differently, so the perceptions are different. In this way an understanding of human perception can provide a good foundation for conducting counseling and psychotherapy.

Conclusion

The long-standing idea that the purpose of counseling is to help the client learn to perceive his or her problematic situation in a more adaptive way is based on good science. An understanding of how human perception works, and how and why it can distort reality, is helpful for counselors seeking to help clients change their perceptions. Even the simplest act of observation requires judgment by the brain (Ramachandran, 2006). Biases and errors in perception are not limited to vision and hearing, but also apply to how we perceive our daily existence and our relationships. If we understand that
our first impressions are often inaccurate, we are less likely to fixate on negative perceptions and more likely to exercise our ability to choose how to frame our perceptions in an adaptive way. Indeed, there is some evidence that people who score high on happiness questionnaires spend little time dwelling on unpleasant things, and tend to interpret ambiguous events in positive ways (Lyubomirsky, Sousa, & Dickerhoof, 2006).

The world is like a Rorschach inkblot, in the sense that all our perceptions are to some degree our own creative constructions, and reveal something about ourselves. A perennial teaching of many wisdom traditions is that we must use our ability to decide how to think about what goes on in the world to be healthy and happy. As Shakespeare wrote, "There is nothing either good or bad but thinking makes it so" (Hamlet, 2:2). Modern research on how perception works tends to validate the idea that we have some degree of choice in how we see the world. It may be that our conscious mind spends most of the time dreaming up stories in an attempt to make sense of the world (Phillips, 2006). Counselors can help clients feel better by assisting them in creating stories about their lives that make sense and help them feel resourceful, capable, and resilient.
References


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