

Perception: Embodiment and Beyond

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Abstract In this commentary on Don Ihde’s paper “Stretching the in-between: embodiment and beyond” I argue that perceptions and observations are based on tacit frames and these frames are expressed through pre-reflexive intuitions thus giving meaning to the perceived content of observations. However, if the objective or given information in perception is incomplete or missing our brain and nervous system will intuitively and unconsciously fill in the missing information in order to act—these particular pieces of added information may not be relevant to the decoding of the given content of perception at all.

Keywords Perception · Observer variation · Embodiment · Tacit knowledge

1 The Problem with Translational Mediation

We are at all times confronted with distortions of reality in perception, and we are almost never aware of it. Our limitations may indeed, as claimed by Don Ihde (Ihde 2011), become clear to us when we realize how much we depend on technologies to access reality-levels inaccessible to us. What we can access through direct perception are only minute segments of reality. Thus we also realize that most of the things in this world transcend human perception.

We are aware of three main sources informing our perceptions: (a) personal specialization; (b) culture; and (c) evolution. We develop personalized perception skills, where society and culture constitutes the backdrop or frame. We recognize specialized skills in connoisseurs of various kinds, like in music, painting and interpretation of complex diagnostic imaging. By putting observational data to the test again and time again, we can determine whether our “readings” are correct or not. Still, we are talking about human perceptions and interpretations of perceptions. We are interpreting mediations, like the images we get from nuclear magnetic

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resonance imaging (NMRI). The NMRI technology is constructed to receive, transform and represent in an image energies originating far beyond human perceptible abilities.

Our biological nature, trimmed through evolution, lies entirely outside our immediate cognitive grasp. Although the trained perspective is necessary for expert observation judgements, the problem with the trained perspective is how we have become wired through evolution. Through evolution our brains have become programmed for survival through acting; to skip temporal limitations—thus gaining through the course of time a brain and a nervous system operating pre-consciously on fragmented perceptual information. The point to be made here is that nature and culture are pulling our perceptible abilities and skills in different directions. The epistemological problem with Ihde's "translational mediation", as I see it, lies in the decoding of the image gestalt in its beyond-experience context—especially when the biological source determining the decoding process also lies outside of human influence. In other words, human bodily-perceptual roles are conflicting with each other and thus creating havoc in our interpretation or decoding processes.

The study of what is entailed in the decoding process of perception has a long history. Democritus distinguished early on between what is given to the senses and what is added to the representation of the given by the human mind through the act of perception. It may be that Democritus was guided by a metaphysical desire for "truth-to- (human) nature". He could also have been guided by experience. He could, for instance, have experienced conflicting sensations, like most of us do, like the sensation of being warm and snug when people around him were freezing. Or, the conflict could be located entirely within his body, for instance, if he had had the chance to try out Locke's famous "bucket" experiment, there is one bucket of cold water and one other of warm water and then there is a third bucket containing lukewarm water. The experiment goes like this: after placing one hand in the bucket with warm water—and, at the same time, the other hand in the cold water, he next places both of his hands simultaneously in the bucket of lukewarm water. Democritus would, if he had been able to perform this experiment, be experiencing two opposite (warm and cold) secondary sense qualities at the same time. The secondary sense qualities had, in Democritus' perspective, a definite localisation in the mind of the observer. Red and green, warm and cold are sensations created in the mind of the perceiver.

What is interesting here is the notion of us "filling-in" a few of the "information-bits" to complete the sensation of something being "warm", "cold" or "warm and cold", i.e. that we are adding¹ the qualitative aspects to that which is given in its objective purity to the human senses. Locke's effort, building on Robert Boyle's work on the physiology of the senses—Lock having studied light beams, retina images, brain processes—was to bring Democritus' (and Descartes') distinction between objective primary sense qualities (pressure, weight, vibrations) and subjective secondary sense qualities, out in to the open through simple experiments performable by anyone. Visual perception involves in its pre-constructive perspective (a) the given object, (b) light refracted from the object and caught by the eye, (c) the physiological processes, and lastly (d) the image (idea) created by these processes. Locke presents us thus with nothing less than what has become the standard distinction in modern perception theories: the objectively given object, and the image we "see" as observers.

With Hermann von Helmholtz as a guide, we enter modern perception theories, which all are constructivist in their foundation. In most theories after Helmholtz we find that there is a constructive mechanism operating behind all perception and interpretative "decoding" (what I take to be identical to Ihde's "translational mediation"). Hermann von Helmholtz calls it "unconscious conclusion". Other present day perception researchers follow up and terms it

¹ Democritus or Locke would of course not use "construction" in this context.

for “unconscious inference” and some even have used the term “filling-in”. There are nuances to the terms but the constructive mechanism giving meaning to the perceptually given is the same. The difference between Locke and Helmholtz (and modern perception theories) is that Helmholtz understands perception to be a multilayered operation—it entails more than just being a retinal image projected inwards through the eye. Perception is a mixture of sensory input, influences of expectations and knowledge fragments that are joined together in one instant. Each of these provide evidence of what is present in the world—and according to Helmholtz—materializes in a form of perceptual thought, i.e. unconscious inference. This, as Yantis claims, “gives rise to veridical experiences despite the limitations and distortions of our senses.” (Yantis 2001:21). However, the given object is never represented in its objective purity; it is infused with elements from the sources or mechanisms behind unconscious inference. Helmholtz writes: “such [mixed] objects are always imagined as being present in the field of vision as would have to be there in order to produce the same impression on the nervous mechanism, the eyes being used under ordinary normal conditions.” (Yantis 2001:21 & 25).

Trained judgement of perceptual experiences—bodily-perceptual skills acquired through development of expertise—have a tremendous impact on our ability to understand what technologies in fact are mediating. The first tentative formulation of the problem, which concerns the subjective nature of translational mediation—were we are presented with an image or “mediation of a specific energy level”. This image we are able to perceive with our senses and decode, and it is now that decoding involves those other tacit elements appearing in unconscious inference. These are perception structuring elements and they are woven tacitly in to the fabric of the perceived. The point I am trying to make here is that these tacitly operating elements are bits and pieces of information that may have nothing to do with the given object as such, because we don’t know of them beforehand or what they are when we are decoding. What is well known today is that this tacit background, this “hermeneutical horizon”, may very well turn out to be a serious impediment to our “veridical experiences”. These personalized “mind-elements” are always appearing unnoticed, they are always personal, and they infuse “meaning” into the interpretation of X-rays, ultrasounds and NMRI.

D. Marr, writes “the purpose of a representation depends upon how well suited it is to the purpose for which it is used.” (Marr 2001:118). Human vision is very general compared to birds’ vision, or other animals’ vision. Still humans have special-purpose mechanisms, for example, to direct eyes toward and unexpected movement or force us to react in some way or the other. As Marr says, there are too many ways to use the visual system of different animals that their representations also must differ—there are, according to Marr, different perceivable realities. We are henceforth applying a type of vision that is, through evolution, tailored to the owner’s purposes. The point here is that we are just not aware of what kinds of elements are brought in when our system of vision is tailored—we don’t possess the “drawing” yet. As a consequence we see things that are not there or we fail to see what we should have seen. Our brain interpreting the perceivable object, or an event taking place, does so intuitively, pre-consciously and in an approximate manner. Simply speaking, the human brain fills in the blanks of the perceived before it becomes a conscious perception. What takes place is that the brain applies the personal embodied “reservoir” of memories and instincts of the perceiver. The brain is simultaneously creating an imaginary time loop around the event evolving in real time. All this happens before consciousness kicks in—after all, conscious awareness is always lagging behind the objective occurrences—and we need to build approximate and plausible models to keep abreast with the real occurrences. (Dennett and Kinsbourne 1992:183–247). *The brain simply completes the construction of what we see.*

In other words, we add content, relevant or biased. It is true, training and repeated readings and interpretations diminish these problems, to a certain extent. But nevertheless, we can never go beyond these personally produced influences on perception—there will always be a certain degree of *observer variance*.

In medicine the epistemological problem of variation in observations of same image, i.e. differing interpretations of same image, is termed “inter-observer variation”. Imaging technologies are to a very high degree essential to modern medical knowledge. X-rays, ultrasounds and NMRI have given the medical expertise new means to see beyond the natural level of human perception. In some cases it is a possible to use pre-programmed computers to “read” or “decode” images or to determine what is wrong with a patient. However, in most cases human interference cannot be avoided or wished for. Nevertheless, interpretation based upon individual perception will always involve subjective dispositions and personal background. Inter-observer variation means that there is a certain percentage of variation between two or more observers interpreting the same image—even when the observers have a relatively equal amount of training and experience, or shares same social background. But why do we perceive of things differently? Humans, as Marr said above, are more or less, biologically speaking, tailored the same way. The answer could be that humans only have certain aspects tailored the same way: the tacit background elements in the decoding of perceptions comes from a variety of sources and differs from person to person, from culture to culture, and perhaps even from one social strata to another within the same society (mafia thugs with long time in the field, experienced special forces soldiers, or secret agents, are known to be extremely alert at all times and to have a quite different reading and awareness of their surroundings—if one compares this to the awareness of a similar situation other ordinary people would have).

Pascal Mercier writes: “...that all human [perception] is only an extremely imperfect, ridiculously helpless expression of a hidden internal life of unimagined depths that presses to the surface without ever being able to reach it even remotely (Mercier 2007, p.24).”² The tacit structures in question are thus in part biological but also cultural, or social, in their origin. In other words, perceptions are based on the biologically innate reserve of reactions, which constitutes data informing actions; but such framing elements are also formed through the learning process. Perceptions are therefore partly a structure of the brain, a product of our nervous system and a product of cultural upbringing.

The experimental psychologists Hannah Faye Chua, Julie E. Boland and Richard E. Nisbett (Chua et al. 2005) has shown how cultural influences are part of our unconscious inference—explaining how people construct mental models of the perceived in working memory and that the representation is not an exact rendering of the actual object of observation and is usually incomplete in detail. (Enns 2004). Very short, their experiment looked at Asians born and bred in the USA and Asians born and bred in Asia and how these biologically similar but culturally different groups behave when they use their eyes to look at complex pictures. By measuring eye-movements they concluded that there are large differences between the two cultures when it comes to eye-movements. Asians born and bred in the USA focuses their eyes on the center object in the picture and does not pay attention to context, while Asians from Asia paid an equal amount of attention to context and the center-object. Chua, Boland and Nisbett concluded that the way we use our eyes—and hence what we intentionally are aware of—is something we learn *where* we live during our formative years as children.

² From Pascal Mercier’s bestselling novel *Night train to Lisbon*. The word “perception” in brackets is my own addition; in the original it reads “action”.

We began by mentioning the three main factors operating in perception: (a) the trained perspective; (b) the social or cultural frame; and (c) the biological-physiological structuring of the brain and the nervousness system. In my interpretation Ihde omits to mention the complexity of the biological aspect, and when he writes that “both isomorphic and non-isomorphic patterns relate to bodily-perceptual skills which are acquired through training and the development of expertise”, he excludes the biological aspect altogether. When Ihde furthermore writes that: “To ‘read’ the image in this case is both to *perceive* the image gestalt, and to ‘decode’ or interpret it in its beyond-experience context, its *translational mediation*”, we have the problem in plain sight. What if the “given sense-data” in perception, on which we must build our “decoding”, is incomplete? How are we able to perceive of an image-gestalt as something “whole”, “structured” and “comprehensible”? In my view we constructing the image-gestalt by means of our training/specialization, by the influence of social structures framing our perceptions, and to a great extent by applying a brain and a nervous system programmed by evolution to leap, in an intuitive manner, to a “product” which we believe that we see as something placed before—and in plain sight—of our eyes. What this problem adds up to is that these particular pieces of constructed and added information may not be relevant at all to the decoding of the content given to perception. Again, how can we know when we have an accurate decoding of an image-gestalt? Why is that knowledge about whatever tacit influences, which makes up the structuring elements of perception, does not help when we try to correct our decoding of the given sense-data? Can we ever trust in our translational mediations? Can we ever reach “truth-to-nature” trough perception?

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