Commentary

How Real is Reality?

Peter Moddel

Abstract

What is consciousness? What is perception? With a clear definition of these, it is possible to ask: how real is the reality we know as the physical world? After distinguishing two distinct states of consciousness, the discussion concentrates on the central moment of the act of perception, namely, the achievement of integration whereby an object enters consciousness and is recognized as some particular thing. This is described both from the physical point of view of the activity of our sensory system and from the semantic point of view of the creation of specific meanings in the mind. Together, these viewpoints emphasize the role of the subject in the formation of everything observable. Further examples show that our way of perceiving is tailored to the temporal and spatial requirements of consciousness, and from this we can conclude that reality is that which fits our structures of understanding. It is as if all moulds itself to our perceptive needs and, once accepted into consciousness, becomes what we recognize as the world.

Key Words: perception, conceptual consciousness, expanded consciousness, integration, scale of values.

Quantum Biosystems **2015; 6 (1): 189-197**

Introduction

Questioning the nature of reality does not require examples taken from quantum theory. From our first-person experience of the world, it is possible to show how the apparent real world is dependent on the perceptive act of an observer. This article concentrates on the crux of the perceptive process, namely, on how a meaningful whole is formed and enters our conscious mind as a perceptible object.

The article begins by clarifying the subject matter and vocabulary before moving on to a concrete demonstration with specific examples.

Address: Planche-Supérieure 18, 1700 Switzerland.
E-mail: peter@petermoddel.ch

1 - Perceiving

We observe objects, but what is transmitted through our sensory system is not an object but a multitude of stimuli from which the observed object must be constituted. The erratic saccade movement of the eyes darting here and there in milliseconds makes it obvious that vision is not simply a static camera-like image formed on the retina.

This raises the question: what then is the object we observe? The common assumption is that physical objects we observe have a material presence independent of the mind and they, together with our physical body, are positioned in the three-dimensional world we call reality. This would mean that our neurological processes break objects into components (like the digestive system does to all food we eat) and these are then reconstituted to produce, in our mind, a replica of the object we observe. This is no more than an assumption, for there is no

way to know what is present before it is reconstituted as the object we perceive. Is, then, our common assumption about reality correct or do objects only become what they are when we perceive them?

Preposterous as it may sound, the second option is the subject of this article.

2 - Consciousness – A Definition

Research in perception must have a clear definition of what is signified by the adjective (*to be) conscious* and the noun *consciousness*.

Consciousness – to be conscious – is to sense a presence. To sense some presence is to be conscious. This definition covers all that is commonly referred to as consciousness. The presence one senses may be a mood, a feeling, a sensation or an object.

This definition contains two mutually exclusive experiences and until they are distinguished, a degree of confusion confounds all discussion of consciousness.

Two forms of experiencing presence can be noted:

1) *Conceptual Consciousness*: registers the presence of an object. The object's presence appears either in the mind (imagined) or outside the mind (in the world). The word *consciousness*, on its own without any modifier, will be used from here on in this sense.
2) *Expanded Consciousness*: registers a state of being. No object is recognized. Expanded consciousness experiences qualities, not objects. It is a non-dual state, not separated into observer and observed.

An example of expanded consciousness: In a room, you are in conversation with others and paying no attention to the temperature, and yet the ambient warmth influences your mood and even the conversation. It enters expanded consciousness without engaging conceptual consciousness. Your state of being is influenced by this presence without your having knowledge of it, that is to say, you are not conceptually conscious of the presence of an object "*warmth*".

Here are two examples of how the proposed lexical distinction simplifies our understanding.

1) The rather awkward sentence: "On some level you are conscious of surrounding sensory stimuli without necessarily becoming conscious of them" can now be expressed as: "Surrounding sensory stimuli enter expanded consciousness without necessarily registering in conceptual consciousness."
2) To balance upright on two feet demands that somehow we are integrating many sensory factors, yet conceptual consciousness is oblivious of these factors. They remain out of conceptual consciousness while affecting us through their presence in the general awareness of expanded consciousness.

To summarize what has been said:

Conceptual consciousness is recognition of an object.

*Consciousness (*without a modifier) will be employed, in the remainder of this article, to signify conceptual consciousness.

Expanded consciousness is subliminal perceptive activity and refers to sensing without recognizing an object.

Awareness is a general word that includes all levels of consciousness, both conceptual consciousness and expanded consciousness.

Difficulties in defining consciousness are largely due to the lack of distinction between conceptual and expanded consciousness. There are many ways to be conscious and the intellect (conceptual consciousness) provides just one way.

Feeling and intuition, traditionally attributed to the heart and the stomach, provide two other ways. Awareness has to do with intercommunication between living beings and the universe, and the accent on *living* beings emphasizes that it is about the presence of meaning. This implies subjectivity and the ability to communicate meaningful content.

3 - Integration: the Portal to Perception

In this text, the word *perception* signifies conscious recognition of an object. The word *object* will be used to signify object of consciousness, whether understood to be a physical object in the world, or an imagined object in our mind.

The object perceived can be anything: a birdcall, a bicycle, a fuzzy spot or a panoramic view – but it is always a unit of meaning. Perception is the entry of a single meaningful object into conceptual consciousness. To achieve this, an imperceptible process of integration fuses many features into the single object we perceive.

Every object we perceive has some content, even if it is only a minimal effect of light and dark, sound and silence or a faint caress on the arm. To perceive is to recognize the presence of this content. It comes as the revelation of a specific meaning.

The moment of fusion can be described in these three ways:
as the perception of the presence of an object; as a personal subject entering the state of consciousness; as the advent of meaning, that is, recognition of what something is.

The task of transforming multiple effects into a single perceived whole marks the subjective moment of experiencing meaning. Any act of perception can serve as an example of this. On seeing a butterfly, myriad impulses impact on my visual system; light and dark areas, colours, forms, changing positions and so forth. But what I recognize is a butterfly, with all these various aspects already integrated into the unified object I perceive. (If I do not recognize it as a butterfly, I still recognize a colourful area and this, too, constitutes an object with certain qualities.) The unified object is a whole, and signifies what it is perceived to be. It is attributed to the world and goes towards building what we understand the world to be. Described in this manner, the fusion of multiple aspects is momentous and holds the transformation from the unknowable to the known, and yet, happening an instant before consciousness awakens, it passes unnoticed.

To "when does it happen?" there is an answer: at the moment of perception. But to "where does it happen?" there is no answer. To a scientist's analytical mind, the question "where?" surely suggests "where in the body?" But that is not the question here. It does not go far enough.

Left unexplained is the fact that what is manifold becomes one though our personal ability to recognize meaning.

What we perceive – a forest, a squeak, a tickle, a dragon, a fragrance or a fuzzy patch of light – always has a particular meaning. It is not the nerve impulses that become one and are unified; it is the meaning they convey that is singular.

Without this transposition into meaning, there is nothing to perceive.

As for the question concerning where this takes place, it is evident that we are not conscious of any such process and so it happens out of consciousness. The non-conscious state of mind is *expanded consciousness,* where the mind is active and the body sensitive to its environment while object-consciousness is lacking.

Countless examples show that the mind is fully functional when non-conscious and continues to work "on its own", resolving problems without any conscious activity on our part. A common example is to go to sleep with a question, or to go for a walk, and then, all of a sudden, without having thought further on the matter, a solution comes to our conscious mind. It is through this activity of the expanded mind that qualities gather and form what becomes perceptible. The details of this process are elaborated in (Moddel, 2014) and need not be enlarged upon here.

The crucial moment of the process of perception is integration. It can be thought of as a portal leading from physical reality into an entirely subjective world of meaning. From the activity of neurons transmitting and receiving information, there is the transformation into a state of accessing content, of accessing the meaning of the transmission.

3.1 Integration of sensory input

Our body's sense organs register effects created by multiple impulses, and yet what we perceive is a fully formed object. What is the integration process that produces the object we observe?

The signals transmitted through our sensory system are very different from the object they deliver to our perception. For example, when we hear a familiar sound, the longitudinal waves that reach the ear go through multiple physical, chemical and electrical transformations before becoming the signals reaching the auditory cortex. There are detailed descriptions of the stages in this process but it is not apparent how the transmission of sequences of impulses becomes an intelligible audible object such as a birdcall.

In vision we find the same unanswered question. Light intensities impinging on our retinal cells change their form to become electric pulses that reach the visual cortex. But how do the transmitted impulses become a bird or any object we see? Surely, to the extent that we manage to perceive anything, it should be the shower of electrostatic impulses! But somehow these impulses fuse to become a single object. The kernel of the perceptive process is the achievement of a unified recognizable meaning.

3.2 Integration despite conflict

The moment of integration has to do with multiple simultaneous impulses or sequences of impulses that become a single object. The unifying act is exacerbated by certain factors. There is the fact that numerable impressions received contradict one with another and these contradictions have to be resolved in order to form the perceived object (Moddel, 2014). To cite one simple example, there are incongruences between the views formed by each eye due to their different positions relative to what is seen, and yet the scene produced in binocular vision is integral and harmonious. To achieve this result, contradictions must have been resolved. This is just one example showing that resolution of contradictions is a factor in the unobserved moment that creates the integrated result we perceive.

3.3 Integration of meanings

The achievement of integration can be viewed, also, from a semantic point of view. In saying the word *flower*, seeing a flower, smelling a flower or simply imagining a flower, we gain the understanding *flower*. Of course many diverse factors constitute a flower: petals, stem, leaves, colour, fragrance; and to these we need to add aspects like delicate, lightweight, destructible, a transient stage in plant growth, roots, photosynthesis, watering, soil, alive and so on. No single aspect determines what a flower is, and neither do all these aspects together (as if the list was finite!). How a concept forms through the presence of meanings that do not enter consciousness is detailed in (Moddel, 2014) and has to do with our intention to denote an object. Offered here is no more than a summary account that points out that these multiple aspects have to become a single unit; features, most of which do not even become consciousness, have to fuse to form the rich unity we experience and know as a flower.

The different aspects that gather to form what a person recognizes as a flower also include psychological effects. They are processed through other channels than the sense organs yet join with sensory effects to become part of the content of the perceived object. Memories, feelings, acquired skills and attitudes, personal sensitivities and a wealth of past experiences somehow, in expanded consciousness and thus without any conscious effort on our part, flow together to become part of the content of a single perception.

3.4 Intermediate conclusions (1)

Section 3.2 described how multiple impulses conveyed through the sensory system have to come together to manifest as a single perceivable object. Section 3.3 described how interrelated meanings that do not register in consciousness have to be drawn out of oblivion and brought together to form the significance of what is perceived.

Integration is the central issue in perception, yet the question of how, in our mind, a vast range of aspects and experiences fuse into a single object is often not given its full importance. The reason for this omission is revealing. It is the assumption that the observed flower exists independently of observation. It is the claim that "the flower is there anyway" that sets the grounds for believing that gaps in the explanation are merely areas of research not yet completed. If the flower we observe is taken to be a flower "in the world" that exists just as we imagine it to be, then perception is merely a matter of its registration upon our conscious mind, and how it forms in the mind is of secondary importance.

Without accounting for the integration into meaningful wholes, a description of perception lacks what is most essential. As with the example of a flower, a thing only becomes what it is when infused with a wealth of subliminal information. Nothing simply is of itself and a dictionary definition, for example, only makes sense when we integrate a wealth of personal life experience into the words that constitute the definition.

Perception therefore comes with the integration of meanings so rich and varied that what might be present without that which we personally bring to the object is inconceivable. There would be nothing there to fuse and become the object; a flower without meaning is not a flower. Any object-to-be is meaningless and formless and cannot be until the observer, with personal living experience, imbues it with qualities. The object is born through the perceptive act. It is created at that moment. What we perceive takes form there and then, and whatever sources might be involved in generating the perception we have of that object is something about which we have no knowledge.

This is a stunning conclusion and should the reader find it unacceptable, my advice is: read on! The supporting evidence grows with the examples that follow.

4 - Generating Perception

To perceive a particular thing, what is required? This is equivalent to asking how any item becomes what it is – a single whole unit. Unity is created through the recognition of relationship. Everything is what it is because, in expanded consciousness, we sense the simultaneous presence of relationships. The relationship of three straight lines that meet to form a closed figure is what we recognize as a triangle, and what we recognize to be a straight line is a certain relationship between parts of a line. Whether relationships are simple (as in these geometric examples) or complex (as in identifying a person from her voice or looks), it is through integrating multiple aspects that an object is recognized.

Noteworthy, here, is that this is not a computational sequence. It is not an algorithm. What produces perception is the fusion of many factors all at once. Perception is a kind of indecipherable moment when the relationships that render an object its qualities, its particular form, become intermeshed and are experienced together. Such an experience cannot be achieved by conscious linear thought that concentrates on one object at a time; it is the mind activity of expanded consciousness that brings the perfect fit between whole sets of relationships. This result becomes the perceived object that conceptual consciousness recognizes.

4.1 Integration into a common scale of values

To take an example: in vision, integration on several separate planes has to be achieved. The view of an object is constituted from a variety of luminosities, forms and colours.

Luminosity: Across the field of view, different luminosities are present, some areas being less bright than others. The luminosity we observe for any one area is dependent on the luminosity of the surrounding areas. This can be understood with the example of a piece of paper that appears white in one setting but grey when held against a brighter surface. The observed brightness of each surface is not an objective fact that can be measured

directly with a photometer but results from a mutual relationship between the various luminosities present. This implies that in order to see any one surface, a scale of luminosities over the whole area has to be established.

Colour: The same subjectivity is present in forming the colours we see. This is discussed in (Moddel, 2014, Chapter 3).

Form: Each outline we see is defined through its relationship with other lines and angles. Positions are mutually determined and size, too, is recognized through the relationship between all that is present.

This description of integration applies to all sensory modalities. Hearing has the same requirement: variations in loudness enter a relationship through a common scale, and so do relationships in pitch, as well as more extensive structures such as key signature.

We perceive by establishing a base that functions as a common denominator and permits the introduction of a scale of values. The relationship between values determines *that* we perceive and *what* we perceive. Though at first it may be hard to believe, what we actually sense are ratios.

In creating a scale of values, qualities interrelate and, entering a common accord, they become objects of perception.

From a first-person perspective, we have no knowledge of the creation of a scale that integrates the relationship between different values – and this, for a good reason! There is nothing to see, hear or sense before the establishment of the interrelationship. Fluctuating values without a set relationship between them would render no fixed image to satisfy conceptual consciousness. When positions, forms, and levels of shade colour have not been determined, there is nothing to perceive. The introduction of a scale of relationships creates a subtle shock, a moment when a subject experiences a passing wave of integration that binds all together. At that moment, the world lights up and sounds out.

It may be helpful here to offer a further, rather simple example of the process being described. Consider what is needed to see a pattern of black and white stripes. For a black stripe to appear, the white stripes on either side are required to set its boundary, but these white stripes are defined by the black stripes bordering them, and so mutual definition continues to the edge of the pattern and, beyond that pattern, out to the fading horizon of the visual field.

Suddenly everything clicks together in a mutually determined set of relationships.

The event of all coming into correlation could be described as a wave of integration that passes through everything as it enters the moment of perception. This wave of inter-definition brings an object to our senses. As integration is instated, the pattern becomes visible. In fact, it would not be incorrect to say the moment of seeing *is* this shock wave of interrelationship reaching through everything.

4.2 Generating sight and hearing in the mind

That we recognize relationships and not things in and of themselves is strange indeed. Answering a simple question can offer another example of what is involved.

What is the fundamental difference between seeing and hearing? “A silly question,” you might answer, “the one you see with your eyes and the other you hear with your ears!” Actually, there is a more fundamental distinction to be made.

Relationships for visual objects are spatial, while for auditory objects they are temporal. In a spatial display, time is reduced to zero, revealing what is simultaneously present across the field of view; in a temporal display, the sequence of impressions is without spatial dimension. In sight, relationships are established across space; in hearing, through time. The point here is that the form of the relationship established – whether spatial or temporal – determines whether the object we perceive is visual or auditory. The eye assists greatly in forming spatial relationships but seeing is not dependent on the eye. Were it so, we could not see images in our mind. The same is true for sounds. We hear tunes or speech in our mind without employing our ears.

This is because we integrate the impressions in a temporal structure. In general, we pay little attention to how images and sounds function in our mind, being absorbed instead by the meaning content – the thoughts – they generate.

Further confirmation that the mind, and not our physical senses, differentiates seeing from hearing is apparent from what is known of people whose eyes and ears do not function. Some blind people use a visual mode of understanding and some deaf people function in an auditory mode.

It is the form of integration taking place in the expanded mind – spatial or temporal – that determines whether vision or audition is experienced.

4.3 Intermediate conclusions (2)

That the world we recognize depends on our mode of perceiving has huge implications. It points to a fundamental fact that reaches far beyond any question of the sensitivity range of our sense organs, such as the frequencies of light and sound they can distinguish. The world is not an object that is reduced when filtered through our physical sense organs; rather, the world is expanded by our sense organs into what it comes to be for us.

The implication here is of unlimited possible manifestations of the unknown.

There is no objective world that stands behind the apparent world we perceive; instead, in observing the world, we give form to the unformed. The world we understand as reality is the world that comes to meet our convenience; it is our particular way of condensing undefined potential into something intelligible. Who can tell what worlds are born through sensitivities that are foreign to our state of being?

5 - The Dissolving World – A Demonstration

Through our physical senses, we are conscious of objects positioned in three - dimensional space that we recognize as the world. We assume these objects and the space are autonomous. Though unfounded, this view is difficult to release.

If, despite the examples already offered, the belief in objective independent reality persists, moving one step deeper may produce that final nudge into freedom!

Instrumental in our ability to see with our eyes is the way light enters the eye through the cornea, iris and lens. They form a pinhole opening through which we see the world. (The function of the lens is to retain the pinhole effect over a wider aperture in order to permit a gain in illumination.) But why is a pinhole necessary? Light reflected by objects reaches our eyes. The light falling on an object we see is reflected in all directions and only a minute part of it travels directly through the iris. That is why, if we position the eye a little to one side or the other, we still view the object because we catch the light of that object scattered in a slightly different direction.

Now comes the fun! If I did not reduce my view to a the size of a pinhole, that is, if my eye was open to receive light over a wider area, I would see light coming from that object over a wider area, and it would be superimposed on the light from other objects whose light is also spread over a wider area. It is the reduction of the entrance to the eye to pinhole size that allows the light from each object to have a unique place on the retina. With a very small opening, the light from only a small region can reach any given area of the retina and the light from an object just outside that region will register on a separate part of the retina. Stated otherwise, the light entering the eye from any area in the field of view is narrowed to a fine line. In this way, directionality is sustained and no two areas of illumination (objects) are visible in the same direction.

To put this another way, not to reduce the light entering the eye to pinhole size would be the same as trying to take a photo by holding up the light-sensitive surface (the negative) directly to the scene without any reduced opening or lens.

Nothing would register on the photograph, or, more correctly, everything would register everywhere and there would be no individual thing to see.

This makes a charming tale. When the pinhole opens wider, the image becomes

blurry and quickly disappears into everything everywhere and all at one time.

When the pinhole closes, there is nothing. One extreme is openness, in which impressions of everything everywhere leave nothing discernible; the opposite extreme is where the opening closes completely and leaves no access to something other. In the process of reducing our openness to just one step before it completely closes, all of a sudden, the visible world appears. What we see reveals itself in an instant between everything everywhere and nothing nowhere.

Is this just a feature of how vision functions or is it about what is real?

5.1 Questioning reality

We produce the picture we have of the world by reducing our view to a pinhole opening. We come to accept that what we see in the moment just before the opening shuts us off totally is reality. We accept it as how the world is, "out there". We conclude that the vision game of creating the moment before blackout is no more than a technique for seeing. For this, there is supporting evidence because we can walk out into the scene we see and touch things and confirm they are where we saw them to be.

What if we question further and ask: is there a degree of hallucination involved, where all our senses support what we imagine? Does our attitude of mind determine what we encounter? But then, there is the confirmation of others who perceive the same world I do, so surely this shows it to be real? Or, on second thoughts, could we all be together in a certain conscious state that upholds what we observe, a state of collective consciousness that determines its own reality? This last thought suggests a direction for further consideration and it reappears in the analogy cited at the conclusion of this article.

5.2 The rule of consciousness

It is good to dwell longer on the example of the pinhole and the reduction to what is visible through the tiniest opening. There is something further to understand here: consciousness is incapable of registering more than one thing at a time and thus seeing becomes possible only if a separate place is reserved for everything, otherwise consciousness is overwhelmed. To reduce the number of different superimposed reflections that register on the same area of the retina is to move in the direction of consciousness, however this does not yet engage consciousness. Only at one step before total closure, that is, at the pinhole stage where no multiplicity is left, does consciousness awaken.

This is an example of limits in the proficiency of consciousness and shows that consciousness simply gets drowned out when more than one presence exists simultaneously.

In other words, consciousness only functions in multiplicity when many things appear in different places (2nd and 3rd dimensions) or when many things appear at different times (1st dimension). When many things come together at the same place at the same time, consciousness relinquishes its hold and retires.

But maybe we can push the matter further. Perhaps multiplicity is possible. Is it not consciousness that imposes this one-at-a-time, one-at-a-place limit? And, is it not the very same consciousness that dictates what we should accept as reality?

Surely the world and whatever exists do not have to obey the dictates of consciousness with its limitations. Surely a state of multiplicity can be just as real.

From this understanding, it is not a big step to accept that the world, and whatever is, can appear otherwise than the way our consciousness constructs it. We can understand physical reality, anchored in the grid of time-continuity and space-continuity, as one manifestation. It is the one with which consciousness is comfortable. To illustrate this point, consider how the chameleon, looking out through independently directed eyes, may be able to deal with two manifestations at once; so why not have multiple views without limit, for surely the world does not have to obey our mode of representing it?

The point here is not, of course, that another perceiver looks differently at our

world – the world we are convinced is the real one – but that the world generated through our perception is absent without our perception, and the unknown would manifest otherwise and as a completely different world to some other form of perception. Who knows what other states of mind beyond conceptual consciousness are potentially available to reveal worlds very different from anything we can compare to our pinhole view?

Conclusion

What we know as the world is generated through a particular structure of understanding. At its origin is integration: a mind activity, inaccessible to consciousness, which produces unity.

Without achieving unity, there is nothing to perceive. The act of integration generates both the experience of perceiving and the object perceived.

From this, it becomes apparent that a subjective act creates the world we know as objective; however, once instated, the world takes on a life of its own. Through the act of integration we form (collectively, perhaps) the reality we know as the world and reactivate this process with every perception. But something quite unpredictable happens: with the genie out of the bottle, the world we instated enters time, extracts itself from subject dependence and evolves autonomously, whether or not it is perceived.

A hologram can be helpful in illustrating the implications of this realization. The creation of a three-dimensional holographic presence requires a unified coherent light source.

When that light source is turned off, the apparition disappears.

In a similar way, perception requires the unifying act of integration by which the objects we perceive as the world take form.

But once formed, the world that arose through acts of integration continues to function and evolve even when unobserved. Can it be that integration – an activity of the non-conscious expanded mind – actually continues in the absence of the conscious act of perception? Maybe, there is no turning off the light!

References

Moddel P. *Making Sense*. Fribourg, Switzerland: Ibex Press, 2014.