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The redness of red

a overview of: Why Red Doesn't Sound Like a Bell. Understanding the feel of consciousness

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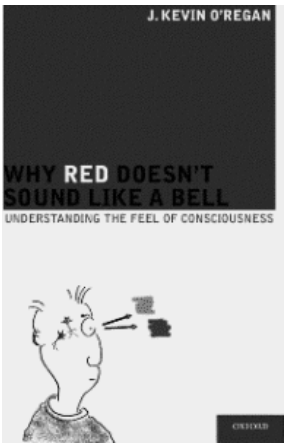

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Consciousness, the mind and the self have for many years constituted "hot" topics of debate whether among philosophers or scientists. Even though a number of those contributing to such debates attempt to convince the world that they possess the knowledge on the subjects concerning these phenomena, baffling as they are for an average person, only few of the books devoted to the subject available on the market appear to cover it in a competent manner. Doubtlessly the works of contemporary cognitive scientists, that is researchers professionally involved in the subject of cognition, can be counted among these. These works definitely include the book by John Kevin O'Regan, *Why Red Doesn't Sound Like a Bell. Understanding the feel of consciousness*. O'Regan is a renowned experimental psychologist, researcher into perception (among other things he has conducted research into change blindness) and one of the authors of the sensorimotor theory. His interests also include other cognitive phenomena, such as the rubber hand illusion or illusory pain. He works in the French *Laboratoire Psychologie de la Perception,* where he conducts his research.

In his book O'Regan continues and develops the proposal of sensorimotor approach which he has put forward in the articles co-written with Alva Noë[50] (cf. the introduction to the interview with the author in this issue of *Avant*). The book is comprised of two sections: "The feel of seeing" and "The feel of consciousness." The former is devoted to the subject of sight and contains five subchapters, whereas the latter covers the subject of consciousness and contains as many as fifteen subchapters. The book is written in a readable style, although it is addressed primarily to readers familiar with the publications of cognitive science. Nevertheless, even a beginner in the field of cognitive studies should not have major problems with following most of the presented examples, since they do not require specialist knowledge.

As has already been mentioned, in his book O'Regan adopts the sensorimotor approach, which is linked with the recently popular embodied and enactive approaches, and draws upon the ecological psychology of James J. Gibson for inspiration. For this researcher, seeing is not a passive extraction of stimuli from the surroundings but its *active exploration*, which means that it constitutes a form of action. The author wonders what it is that humans possess that enables them to experience various things: the smell of flowers, pain, or amazement over a rainbow or music on the radio. For a long time cognitivists were convinced that it is only the brain that creates such experiences and human consciousness. O'Regan suggests that consciousness and all experiences take place as a result of interactions between the body and the surrounding environment. These interactions are reciprocal and dynamic. We see the external world not because we patch together various pictures representing it in our brains, but because of the aforementioned interactions. Thus, when asking about the experience of a flower's smell or the firmness of an object, the author claims that this is something that we do, and not something that happens to us. Therefore, he poses quite a radical thesis which stands in direct opposition to many claims of heretofore conducted research into perception.

In the first part of the book the author focuses on the visual perception. To begin with, he presents the first important research into sight, performed by Johannes Kepler, as well as the issues connected therewith. Kepler discovered that the image produced by the retina is real, reversed and reduced in size. This, in turn, led Descartes to pose the thesis, which the contemporary philosopher and cognitivist Daniel Dennett has called "the Cartesian theatre." That is, Descartes suggested that there are events taking place in our heads that resemble those performed in a theatre; obviously, in the case of the process of seeing we neither "watch" nor analyze any performance, but reversed images appearing on the retina. This notion resulted in the acceptance of the existence of a homunculus: a "small human" who watches the images in our head. While O'Regan counts among the many contemporary researchers who dismiss this hypothesis, he points to the fact that the spirit of this "small human" still haunts many researchers into human perception.

[50] E.g. the already famous article by J.K. O'Regan and A. Noë 2001. A sensorimotor account of vision and visual consciousness. *Behavioral and Brain Sciences*, 24: 939-1031.

In the following part, O'Regan freely moves onto characterizing the structure of the eye. Rather than bombard the reader with Latin names and anatomical lectures, he presents a handful of interesting facts on the subject of the blind spot (the place on the retina devoid of photoreceptor cells that would enable seeing), as well as several simple experiments connected therewith and presenting its influence over perception. He subsequently introduces to the reader the notions of other impairments limiting vision. However, these impairments should not be mistaken for the "usual" visual impairments, with which we go to an ophthalmologist. Indeed, O'Regan showcases certain natural imperfections of our visual apparatus. The experiments presented in this part of the book can be conducted at home without much problem, which is undoubtedly to their advantage. This can be exemplified by the experiment concerning the peripheral perception of colours, thanks to which the readers may see for themselves the truthfulness of the thesis of the human eye's very poor ability to perceive colour.

Towards the end of the first subchapter the author describes one of the first experiments concerned with change blindness, a phenomenon which constitutes one of O'Regans primary interests. In the second subchapter the tenets of the sensorimotor theory are explained in an accessible manner. O'Regan begins with a simple experiment and its variations, in the course of which the reader is to imagine the act of recognizing objects hidden in a sack through touch alone. This serves as a subtle way to introduce the thesis that our perception is in fact an action, an active exploration of surroundings, rather than a passive process of creating its representations in the mind - which are rejected in the sensorimotor theory. The author explains it in a simple way: we never see the whole picture. Our eyes are constantly in movement, continually going through the environment and extracting data out of it. Seeing, as O'Regan puts it, is a process of continuous engagement in asking questions and seeking answers regarding "the things in front of us." Similarly as in the previous part, various experiments are described, such as an experiment with reversed image, namely a situation when the tested subjects put on glasses which cause them to see everything upside-down. Furthermore, the chapter contains description of the problems encountered by people taking part in this experiment, for instance the difficulty related to attempting to shake someone's hand.

The next part of the book presents a popular view, rejected by O'Regan, regarding "seeing everything." The fourth chapter, entitled "The Illusion of Seeing Everything," contains examples demonstrating the fact that in reality we see far less than we imagine. The author presents among others the famous experiment with the gorilla dancing in the centre of a stage, which is overlooked by the viewers. The chapter also presents a number of other examples of inattentional blindness and change blindness, most of which can be found on O'Regan's website (http://nivea.psycho.univ-paris5.fr/). The first section ends with a discussion about the notion of representation, wherein O'Regan attempts to defend the theory that the human brain does not hold a representation of the outside world.

In the second part of the book the author goes on to characterise other senses: hearing, touch, taste and smell, and, most importantly, moves on to the eponymous question of consciousness. This begins with a description of one of O'Regan's childhood dreams, namely building a conscious robot. This reference is not coincidental, as O'Regan briefly presents the history of Artificial Intelligence and robotics, as well as the challenges opening before these fields. The attempt at creating an intelligent robot also bears significance to the field of studies over cognition, since there arises the issue of the robot's consciousness. By constructing a conscious robot, we would learn something about the consciousness in general.

In the following chapter, having reviewed both the scientific and the popular ways of understanding consciousness, O'Regan conducts an extended discussion of phenomenal consciousness: the most "raw" and conscious feel. This is illustrated by the example of the pain resulting from an injection. One can imagine various things regarding this procedure, and the very thought may cause goosebumps. During the procedure, the body also begins to react appropriately: the hand might jerk when the needle breaks the skin, one may feel faint, and so on. However, all these aforementioned phenomena exist above (and beyond) what O'Regan calls the raw feel of pain resulting from an injection - as he writes, when we put aside everything we have imagined with regards to an injection and all physical effects of the stinging, then what remains is the "raw feel" of pain resulting from an injection. Subsequently, O'Regan looks for a place or mechanisms causing these raw feels, having concluded that they cannot be equated to brain functions.

Having analyzed the popular cognitive approaches to the issue of such experiences, the author moves on to present this notion from the sensorimotor perspective, which he develops himself. The discussion does not lack an example already classic for O'Regan, namely driving a porsche. The question of what makes driving a porsche special touches specifically upon the matter of raw feel. O'Regan argues that these experiences are generated not only by the brain, which doubtlessly participates in these processes, but by our sensorimotor apparatus and interactions with specific objects. The subsequent sections of the text contain references to problems which may be identified a belonging to the area of the philosophy of the mind.

One of them is the question of animal and child consciousness. The author approaches the subject by asking about the impression of the unremitting experience of sensations, that is the feeling that it is a continuous process. The following chapter continues with the subject of raw feels, this time regarding the perception of colours. Moreover, O'Regan discusses a very interesting experiment, which can actually be conducted at home - provided one has enough free time. For three weeks, the subject of this experiment wears appropriately coloured glasses (both of which are half-coloured: one is half-blue, and the other half-yellow). When one moves his or her head while wearing such glasses, he or she sees everything slightly tainted with blue or yellow. As it turns out, the effect remains when after three weeks the subject takes off the glasses and starts to move his or her head. However, this ceases quite soon. As this experiment confirms, besides the processes taking place in the brain, our sensorimo-

torics also takes a vital part in experiencing colours. The next chapter showcases the extremely interesting issue of "sense substitution". In other words: is it possible to see with one's ears or with the aid of touch?

When replying to that question, O'Regan analyses, among others, the famous experiment carried out by Paul Bach-y-Rita[51], as well as one of the latest variations on this experiment. It basically consists in covering the subject's eyes, the function of which is supposed to be taken over by one of the other senses. A video camera records image, which is then transformed into e.g. sound, heard by the subject. During these experiments it turns out that to a certain degree, some senses can play the role of others, if the latter do not function properly. For example, Bach-y-Rita's report suggests that people who were born blind reacted emotionally to erotic pictures or photos of people they loved if these images were put under a special camera, the transformed signal from which would reach the sense of hearing or touch.

In the subsequent part of the book the author demonstrates how the research conducted thus far regarding sensory substitution and the theories explaining this phenomenon connect with the sensorimotor theory. The following part presents the issue of touch from the sensorimotor perspective. The chapter, besides containing dry theory, acquaints the readers with various experiments, at least one of which can be easily done at home, namely, the illusion of the rubber hand. The chapter explains other illusions related to bodily experience as well. The author, among other things, explains how contemporary science accounts for the out of body experience. Besides describing classic phenomena of cognition, emotions, thirst, itching and pain are also briefly described.

O'Regan finishes his book with a very optimistic and, at the same time, daring declaration of faith in that the sensorimotor theory, as developed by him, can face up to the problems encountered by the traditional theories, which make consciousness into a phenomenon impossible to produce by biological entities. An interesting reference to this issue can be found in the interview with this researcher, as published in the present issue of *Avant*.

Bibliography

Bach-y-Rita, P. 1972. *Brain mechanisms in sensory substitution.* Academic Press.

Bach-y-Rita, P. 1984. The relationship between motor processes and cognition in tactile vision substitution. Ed.. A F. Sanders and W. Prinz. *Cognition and motor processes*. Springer.

O'Regan, J. K., Noë, A. 2001. A sensorimotor account of vision and visual consciousness. *Behavioral and Brain Sciences*, 24: 939-1031.

[51] P. Bach-y-Rita. [1] 1972. *Brain mechanisms in sensory substitution. Academic Press*. [2] 1984. The relationship between motor processes and cognition in tactile vision substitution. A. F. Sanders and W. Prinz, ed. *Cognition and motor processes*. Springer.