

## COLOURS AND AFTERIMAGES

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Using the example of afterimages the author tries to show that colour realism is not the appropriate theory for the explanation of ontological nature of colours. As a paradigmatic theory of colour realism the author has chosen the approach of the Australian Philosopher D. M. Armstrong. In the first Part of the paper author explicates Armstrong's views and in the second part argues that Armstrong's position faces serious ontological difficulties.

In this paper I shall try to point out some weak points in Armstrong's<sup>1</sup> approach to the problem of perception. More Precisely, I will be concerned with Armstrong's attitude towards the illusory perception of colours. In the first part, I shall explicate Armstrong's position and in the second I'll present some examples to show that such a theory of perception, applied to afterimagery phenomenon, faces serious ontological difficulties.

Armstrong distinguishes three general theories of perception: direct realism, representationalism and phenomenalism. From the ontological aspect, the first two theories are realistic, which means that such theories maintain that Perceiver's environment (reality) exists independently of the existence of perceiver. The third theory is antirealistic, which means that it maintains that the reality is completely dependent on the perception of a perceiver. According to Armstrong, difference between direct realism and representationalism is in the fact that the former theory holds that perception, at least in some cases, enables direct, immediate awareness of Physical entities. The latter, representationalist, denies the

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<sup>1</sup> David Mallet Armstrong's views about Perception are most Precisely Presented in his books *Perception and the Physical World*, Published in 1961. and *A Materialist Theory of the Mind*, Published in 1968. as well as in several papers published in the seventies: "Colour Realism and the Argument from Microscopes", "Immediate Perception" and "Perception, Sense-data and Causality"

possibility of such an awareness, postulating epistemological and/or ontological intermediaries in the form of representations. The term representation refers to all mental entities that represent the external reality and primarily covers entities which were in the philosophical tradition usually called ideas, sense data, sense impressions, etc. whose purpose is to make possible perceptual knowledge in an indirect, mediate way. Armstrong himself accepts the position of direct realist.

If we apply such a position to the domain of perception of colours we get someone who is a direct realist about colours, who maintains that colours are properties of external, physical entities existing independently regardless of the fact that they are perceived or not. Such a position will be criticized in the second part of the text.

On the more general level, Armstrong thinks that the outcome of the perceptual process is a causal result of stimulation of sense organs with external physical objects. Our perceptual knowledge of such objects and their properties is, as we already said, immediate, immediate in the sense that it does not involve the process of inference from some mental entities or any kind of knowledge as relevant sources of perceptual knowledge. The basic source of perceptual knowledge is the domain of physical entities and the final outcome of immediate perception is perceptual belief. According to Armstrong, immediate perception should be treated as an acquiring of immediate knowledge, as an event, in the sense in which an acquiring is an event. Perceptual beliefs are not of verbal nature, because it would be hardly possible to speak about the perception in the case of animals, but in principle it is possible to express perceptual beliefs in verbal medium.

Treating perceptions as final products of perceptual process, gives us an elegant explanation of the possibility of acquiring both conscious and unconscious perceptual beliefs. Namely, although the fact is that we are in most cases aware of perceptual data from environment, there are some cases in which it is obvious that we receive relevant perceptual information from environment but it is also obvious that we are totally unaware of it. For example: "blind-sight" phenomena<sup>2</sup>, somnambulistic perception of environment, subliminal perception<sup>3</sup> or perception without attention (Armstrong's favourite example is a sleepy and tired driver who suddenly becomes aware that he was driving for a certain time without having been aware of it). Armstrong's approach to the explanation of perception obviously

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<sup>2</sup> See Thomas Natsoulas: "Conscious Perception and the Paradox of Blind-Sight", in Geoffrey Underwood (ed.): *Aspects of Consciousness*, Vol. III, Academic Press, London, New York 1982.

<sup>3</sup> See for example J. R. Lackner and M. Garrett: "Resolving Ambiguity: Effects of Biasing Context in the Unattended Ear", *Cognition* (1), 1973.

allows the possibility of unconscious belief acquisition, because it is exactly belief that is relevant for the explanation, and not the way how it is acquired. Such irrelevance of conscious perceptual experience can hardly be incorporated in to a phenomenalist explanation of perception, but nicely fits in the direct realist's picture of perception.

On the other hand, Armstrong's approach offers the possibility of solving the problem of indeterminacy. Indeterminacy is simply not a property of some mental entity, for example, of sense data. It is the feature of abstract, propositional belief. Armstrong's position is also compatible with the attitude according to which perception, although it is immediate, is not incorrigible, contrary to most phenomenalist and representationalist theories of perception. Namely, according to Armstrong's position, perception can be veridical or illusory. Veridical perception is simply acquisition of true beliefs (expression "true beliefs" is intended to refer both to knowledge and true beliefs), and false perception acquisition of false beliefs.

This means that veridical perception of colours would be acquisition of true beliefs about certain properties of external, physical entities. It is important to notice that in Armstrong's theory colour there is an intrinsic property of a physical entity. Of course, for such an ontological position, as well as for direct realist's explanation of perception, colour cannot be a property of an internal, mental entity. Colour must be identical or in principle reducible to physicalist explanation. Armstrong has chosen the position of reductivist, according to which a colour of the surface of an object can be reduced to light waves (electromagnetic) emitted from the surface of that object under normal conditions, for example, under sunlight. In other words, he identifies molecular structure of the surface of an object with its intrinsic property capable of the emission of such-and-such light waves under normal conditions.

But, if we accept such an explanation which does not need to postulate mental entities for the explanation of the colours, we are threatened by inability to explain at least some mental states having to do with the appearance of colours. More specifically, mental states associated with the presence of afterimages. Afterimage is "an image seen immediately after the intense stimulation of the eye by light has ceased"<sup>4</sup>, a phenomenon experienced by almost everyone. Mental states connected with such experiences Armstrong treats as special subspecies of the states resulting from illusory perception viz. the states in which we have acquired false perceptual beliefs. My question is: To which entity the colour of the afterimage belongs? Is it a colour of an entity of physical or mental or some other

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<sup>4</sup> R. L. Gregory: *The Oxford Companion to the Mind*, page 13., Oxford, Oxford University Press 1987.

nature? What is the relevant perceptual basis of our false (or true) perceptual beliefs about the colour of an afterimage? Is it a physical entity or light waves or our experience?

I will try to argue that colour cannot be, in the case of afterimagery, treated as an intrinsic property of physical entities. As an illustration I shall use a thought experiment. Imagine a subject who is looking at a white coloured wall. His looking at the wall should result in acquiring the true perceptual belief: "I see a white wall". Suppose, then, that his eyes have been exposed to intense and bright light for a moment. As a causal effect of the stimulation of his retinas, he would, for a few seconds, have an experience of "seeing" a Patch (an afterimage) of a certain colour on the white wall. May we say that he has acquired a true perceptual belief? According to Armstrong - no. He has false perceptual belief, because there is no real Patch on the wall at all.

This means that the subject could not have a true perceptual belief either about the existence of the Patch or, consequently, about the colour of such nonexistent Patch. But, may we accept as true this tentative statement: "I know that there is no object, no Patch on the wall, but still I have a short but determinable experience of "seeing" or, better to say, afterimaging such-and-such colour"? I think, pace Armstrong, that it is possible for such a statement to be true. If we could prove that statements of a type: "At the time  $t$ , I have a determinable experience of afterimaging such-and-such colour" (we shall call the type of such statements -X) can be true, we would show that there is a possibility of acquiring true beliefs about colours, although there are no existing coloured entities at the moment of belief acquirement.

All that we need is a firm criterion of truth for such subjective statements as X. I will argue that the ability to discriminate the colour of an afterimage from the colours of physical entities could serve as a sufficient reason for treating X statements as true. Imagine again our subject looking at the white wall, but this time imagine that there are two real patches on the wall, for example, two orange Patches of different hue. The Patches should be imagined as of two adjacent hues of the orange colour. Notice that there are no entities coloured with a hue in nature which fit, between two adjacent hues of the orange colour. Now, imagine that our subject has been exposed to intense and bright light again, but this time with a light whose purpose is to bring about the appearance of an orange afterimage as "seen" on the wall between two really existing Patches.

Notice that there is a logical possibility of appearance of such an afterimage which would be hued in a way which presents a case of a hue which fits between the two adjacent hues existing in the physical nature. I myself do not believe in the empirical analogue of such a possibility. Although it would be a decisive evidence against the attitude which treats colours exclusively as intrinsic

properties of physical entities, I think that no human being would be able to discriminate a hue which fits between two adjacent hues from these two hues. The reason is simple, although there may be no complete orange hue spectrum in the nature, it can be artificially created. For example, we can paint such a hue spectrum. The completeness of the spectrum, in fact, depends on human ability of hue discrimination.

For our purposes, it is enough that there is actual ability for discriminating hues in the hue spectrum of the same colour, no matter whether really seen or afterimaged, not to mention the obvious ability for discriminating completely different colours of afterimages and really seen objects. If various subjects with normal colour discrimination abilities were exposed to the light under the same conditions (in front of the white wall with two Patches) they should be able to discriminate hues or colours of afterimages from hues or colours of really existing Patches on the wall. If they could make such discriminations, they would be able to determine the afterimaged colour via relation to colours of really existing Patches. Such an ability could be tested empirically, which means that it is intersubjectively testable, and if this condition is fulfilled we can talk about statements of the type X as true or false. Ability to determine the colour of physically existing entities is simply a disposition to react in a certain way to a certain stimulus. Intersubjective testability is made possible by appeal to the explanation based exclusively on intersubjectively accessible components. Various subjects could be exposed either to one or to several different light(s), either in the same or in different environment(s), or there is a possibility of focusing the attention on the same subject exposed to the same or to different light(s) in the same or in different environment(s). On the basis of these variables an investigator should be able to predict the statements of the type X. The statements are true if they correspond to the predicted ones and false if they do not.

The most relevant component for the appearance of a certain type of afterimage is, of course, the sort of emitted light. The appearance of afterimage is obviously caused by emitted light, but not in the same causal way as in the case of veridical perception of, for example, real Patches on the wall. The difference is obvious in the case of the causal relation between the light and the caused afterimage from the colour of the emitted light. This is not the case with the type of perceptual causal relation proposed by Armstrong. In such a relation, for example, between the intrinsic colour of that object being, perceived and the perceived colour of that object, colours are and should be the same in order to preserve the veridicality of perception. Afterimagery is obviously not such a relation, so it should be treated, according to Armstrong, as illusory perception, because in afterimagery we acquire false beliefs. In my opinion, this is not the case. What is false in beliefs induced by afterimagery? If someone believes that

there is an external object in front of him, as in perception, when he has the afterimaging experience, of course that he has false belief. He has a false ontological belief. There is nothing in front of him after the source of light has ceased to affect his visual sense organ. But this is not necessarily so. He may be acquainted with the fact that there are no material objects corresponding to afterimages. In this case, although he is acquainted with an afterimage, he would acquire true ontological belief that there is no external, material object corresponding to the afterimage. From this aspect afterimage can be treated as illusion. It simply does not correspond to external reality.

What differentiates afterimages from ordinary colour illusions is that in the case of afterimagery, unlike the case of illusory perception, we are faced with two slightly different experiences. Namely the ordinary perceptual experience of the colour of the source of emitted light which may be veridical or illusory and the succeeding afterimaging experience of the colour of the afterimage itself which cannot be easily treated as veridical or illusory. It can be treated as illusory in the sense that there is no external coloured entity corresponding to the afterimage. But what about an epistemological sense? If we treat external reality as the only possible basis for forming our beliefs about colours, then when we have an afterimaging experience we persistently have and, moreover, necessarily have false beliefs (illusory experience) about the colours of external, material world. If we simply cannot have true belief about colours that do not belong to material reality!

I hope that I have shown that there is a possibility to treat, at least, some beliefs (statements of the type X) referring to something internal, phenomenal as true or false. This means that when we are talking about the colours of afterimages we are not committed to treat beliefs about them as necessarily false. Afterimaging experience is illusory in the sense that it does not correspond to external reality, but not in the sense that it persistently gives rise to false beliefs about something epistemologically relevant such as colours are. Beliefs about colours of afterimages are not incorrigible, since it would be absurd to speak about their truth. They can be corrected via relation to colours of external objects in the environment, viz. via predictable comparability of the colours of afterimages with the colours of material objects.

Furthermore, what makes Armstrong's position about the colour beliefs less acceptable is his acceptance of scientific realism. According to scientific realist's position, science, not experience, determines what the real colour is. This means that most, if not all, of our colour perception could be and, in fact, is illusory. This, in turn, means that in our example with afterimagery both slightly different experiences are illusory! Namely, the perceptual experience of seeing an emitted light as well as afterimaging experience. The reason why Armstrong accepts such a strange view for someone who accepts direct realism in theories in

perception is the need to defend direct realism about colours from Berkeley's relativistic argument, which Armstrong calls: "Argument from microscopes"<sup>5</sup>

Microscopes and unassisted eyes give us different information about the colour of the perceived object. But, the same thing in the same part at the same time cannot have two different colours. Moreover, these two colours cannot, at the same time, both be real colours Armstrong thinks that it is the task of science, of scientific discovery to determine what (or which) the real colour is. If science confirms it, it may appear that even the colour seen by the aid of microscope is illusory, or it may be that microscope appears to be the most reliable tool for access to colour reality. Although Armstrong discriminates the position of naive realist, according to which colours seen with a naked eye are real colours, from his direct realist's position, which claims only that we can have direct, non-inferential awareness of real colours, it seems hard to conceive how we can have non-inferential, nonmediated awareness of real colours if we must rely on such typical mediators as microscopes are, or pay attention to scientific discoveries (infer from scientific knowledge!) if we want know what real colour is!

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<sup>5</sup> See the first dialogue in Berkeley's: "Three Dialogues Between Hylas and Philonous"

## References:

- 1) Armstrong, D. M., 1961. *Perception and the Physical world*, London: Routledge and Kegan Paul
- 2) Armstrong, D. M., 1968, *A Materialist Theory of the Mind*, London: Routledge and Kegan Paul
- 3) Armstrong, D. M., 1979. Colour Realism and the Argument from Microscopes in Armstrong, D. M., *The Nature of Mind*, Ithaca: Cornell University Press

*Boran Berić: BOJE I PASLIKE*  
S a ž e t a k

Pozivajući se na primjer paslike autor nastoji pokazati da je realizam po pitanju boja neodgovarajuća teorija za objašnjenje ontološke prirode boja. Pristup australskog filozofa D.M. Armstronga odabran je kao paradigmatična teorija realizma po pitanju boja. U prvom dijelu članka autor eksplicira Armstrongovo stajalište, a u drugom pokazuje da se Armstrongov pristup suočava s ozbiljnim ontološkim poteškoćama