

## **Non-Reductive Objectivism – A Dual-Aspect Model of Causality**

### **Abstract**

*Non-reductive objectivist accounts of color have been the focus of a certain amount of discussion recently. The present paper examines what explanations would be needed in order for an extended version of the viewpoint encompassing most of the sensory qualities to achieve conceptual consistency with the scientific account of reality. Once the explanations required have been identified, a form of non-reductive objectivism that meets them and embodies a dual-aspect model of causality is put forward. It is shown that this sheds new light on the hard problem of consciousness and supports a physicalist interpretation of man while also according reality in the external world to the phenomenal content of sensory experience.*

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In regards to the sensory qualities, objectivism is the view that they are objective properties of physical objects and events in the external world that exist independent of sentient observers: They are “mind-independent” (Campbell, 1997, pp. 177-8). A non-reductive form of objectivism concerning color has attracted attention recently as offering a possible way forward in the debate over that quality (Yablo, 1995; Batty, 2004)<sup>2</sup>. This holds that color is a property of objects that is distinct from “the properties with which the physicist endows [them]” (Hardin, 1988, pp. 60-61). In the present paper an examination will be undertaken of a broader form of non-reductive objectivism that encompasses all of the “non-contact” sensory qualities, namely color, sound and smell.<sup>3</sup> That is to say, we shall be looking at the doctrine that the phenomenal content of color, sound and smell exist in the external, physical world as objective and irreducible properties of physical objects and events that have no dependence on being sensed by sentient observers.

According to this view, the red quality of a tomato is not reducible to the micro-physical properties of the fruit’s surface, although it may be correlated to them. Also the quality, being objective, occurs on the surface whether or not an episode of sensing is currently taking place. When an episode of sensing does take place, the redness experienced is that which exists on the tomato’s surface. Similar ideas apply to the other sensory qualities. Thus, qualities of sound and

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<sup>2</sup> The position is also referred to as “naïve objectivism,” a term used by Yablo (1995).

<sup>3</sup> The reason for restricting the paper to non-contact sensory qualities is because of the additional complications and issues involved in taking a naïve objectivist view of taste and touch. For discussion of these issues see Carnie (2007).

smell arise in the environment, whether or not they are currently being sensed. When sensing takes place, it is these objective and external occurrences of phenomenal content that are detected. It is often pointed out that it is necessary to maintain a distinction between sensory qualities and our experience of them. What this translates to, in the context of non-reductive objectivism, is the need for a distinction to be drawn between sensory phenomenology and our awareness of it. This position holds that all of the phenomenology of sensing (i.e. its phenomenal content) is external and objective. It does not, of course, hold the same about our awareness or experience of the phenomenal content. A feature of the non-reductive objectivist position that differentiates it from the more conventional subjectivist approach to sensory qualities is this unusual distinction between awareness of phenomenality and the phenomenal content itself. Clearly any thoroughgoing account of non-reductive objectivism must identify a mechanism, perhaps lying within man's sensory system, that would be capable of offering an explanation for such a distinction. In this paper, it will be argued that there are a series of further explanatory hurdles of a similar conceptual nature that would have to be overcome by any fully worked out version of non-reductive objectivism. It is already well known that there are a range of problems for the viewpoint. Two of the more prominent are the argument from illusion and the time-gap argument. These, however, lie outside the scope of the present paper, which as a conceptual investigation of non-reductive objectivism, is limited to the non-illusory case. Its focus will center on a selection of explanatory requirements (or apparent requirements) that arise in veridical perception from the conceptual conflict between non-reductive objectivism and the scientific account of reality. In fact, as we investigate these, it will be found that some of the issues that one might expect to require an explanation do not, and some of those that one might not expect to require an explanation, do. Once the explanatory requirements of non-reductive objectivism under study have been clarified, a version of the viewpoint, which meets those that have been found to be genuine, will be set out. A key element of this version of the non-reductive objectivist outlook will be that it interprets physical causation as having a dual aspect: It gives rise to both phenomenality and awareness. It will be shown that this version of non-reductive objectivism sheds new light on the hard problem of consciousness and (in a perhaps unprecedented fashion) supports a physicalist account of man, which at the same time accords full reality to the phenomenal content of the sensory qualities. In conducting this examination the author will be developing ideas which were originally set out in an earlier work (Carnie, 2007).

## **Direct Access**

If the red quality that we experience as on the surface of a tomato exists objectively on the surface of the tomato, then it does not make any sense to postulate that a red sensation or qualia intervenes between the subject and the external quality sensed. An equivalent point is also true for sounds and smells. Undeniably, it is conceivable that there could be entirely unnecessary replication of the external quality in the internal domain of the mind, but the only consequences of such a metaphysically extravagant extension to non-reductive objectivism would be negative: Those of (a) entrenching the mind-body problem by supposing entities to exist in the mental realm that cannot be accounted for without encountering an explanatory gap, and (b) producing an account that falls foul of Occam's razor by multiplying entities

unnecessarily. Therefore, non-reductive objectivism is incompatible with a representationalist account of the sensory qualities, where the mediating representation is taken as having phenomenal content. Instead, this viewpoint implies directness of access by subjects to the external objective sensory qualities. To put it another way, there is an element of direct realism concerning sensory qualities consequent upon this position. This brings us to a second item that would have to be accounted for in order to explain how non-reductive objectivism might integrate with the scientific picture of reality. Currently, in the scientific world view, there exists no explanation for this directness of access. There are two elements to directness of access that would require explanation:

1. How sensing of external qualities of color, sound, and smell can occur in the absence of mediation by any internal sensations or qualia. (The possibility of mediation by forms of representation without phenomenal content is not excluded.)
2. External colored surfaces are typically located at some distance away from the sensing subject. Phenomenal sounds and smells also arise in regions of the environment that are remote from the subject. Therefore, an account must be given of how access is achieved by the subject located in one place to sensory qualities that may be located in a different one. (We might call this the “access-over-a-distance” problem.)

## **Chromatic Variability**

In principle, non-reductive objectivism in relation to color can be conceived of in two possible ways: without chromatic variability and with chromatic variability. In the former case, the idea is that the colors of objects, while non-reducible and objective, are fixed and invariant even under extreme alterations of illumination (such as the change from light to darkness). While in the latter case, they are conceived of as temporarily changing color under such significant variations of illumination. When a lemon is taken from sunlight into shade and a powerful green light-source is shone on it, the fruit appears green. According to non-reductive objectivism-with-chromatic variability, the objective phenomenal color of the fruit actually changes to green while illuminated by the green light, and then the color reverts to yellow, if the lemon is returned to the light of the sun. Whereas, according to the chromatic invariant version, the color of the lemon remains yellow throughout. Which of these two versions should command our attention? It is clear that the notion of chromatic invariance under extreme alterations of illumination bears no relation to the detail of how objects actually appear in physical reality. Their color appearance simply does change under gross modifications of illumination. It would seem most likely, therefore, that the notion of chromatic invariance has its origins in that body of doctrine concerning object-color that lay people, lacking scientific or philosophical training, use to get by on a practical level in daily life. It is rare in normal life for everyday objects to be seen under the illumination of intensely colored lights. The usual state encountered in vision is steady illumination under sunlight, where colors are ascribed to objects on a simple and “fixed” basis. Lay notions of color, however, do not constitute a philosophical body of doctrine. There is no pressure on them to be systematic or even consistent. They only have to work at a pragmatic level, which they succeed in doing despite lacking the coherence and

consistency<sup>4</sup> that would be found in a philosophical theory. Given this, it would be a mistake to give serious consideration, in the court of systematic philosophy, to a concept such as that of chromatic invariance, which, in all likelihood, stems from a pragmatic body of doctrine that is non-systematic in nature. The conclusion must be that, of the two possible forms of non-reductive objectivism concerning color, only the chromatically variable one is worthy of attention. Does this conclusion raise issues that require explanation? In connection with how changes in externally-located phenomenal color appearance are caused to arise in response to changes in illumination, it certainly does. It is to this area of causality that we shall now turn.

Any attempt to integrate the idea that sensory qualities are objective phenomena with the scientific world-view raises the question of how they might be causally engaged with matter. This overall issue breaks down into two subsidiary questions that could, at least in principle, be raised:

- A) How do external phenomenal colors, sounds, and smells have causal effects?
- B) How are external phenomenal colors, sounds, and smells caused to arise by the micro-events associated with them in the external world (e.g. colors by reflectance of light at certain wavelengths, sounds by emanation of sound-waves at certain wavelengths, etc.)?

Let us consider question (A) initially. The first sort of effects that external phenomenal colors, sounds, and smells might cause are ones during episodes of sensing, when conceivably they might be thought to cause corresponding internal color, sound, and smell sensations or qualia. We have, however, already established that non-reductive objectivism implies directness of access (on the part of the subject) to external sensory qualities, so in its case this possibility is ruled out. What about outside of episodes of sensing? Is there anything that an objectively existing color, sound, or smell manifesting in a region of the world that is free of observers could cause? The micro-physical characteristics of the surface of a tomato could of course have causal effects in the absence of observers. Its quality of redness, however, is distinct from such micro-physical characteristics according to the non-reductive viewpoint, and it is inconceivable that the quality itself could interact with any of the matter in the environment (for reasons that will be given shortly). Furthermore, there are, by definition, no subjects for it to have causal effects upon. Therefore, question (A) does not lead to anything that requires explanation under non-reductive objectivism. What about question (B)? The picture here is different. We know from science that when light of wavelength 650 nanometers reflects or emits from objects, they appear

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<sup>4</sup> The experience of the present author is that the lay people give answers to questions such as “What is color?”, “Is a sunlit tomato red when not looked at?”, “Are atoms colored?” that reveal a confused and inconsistent conception of color. Personally, he has found that that lay people have difficulty in grasping what is being referred to when one discusses with them what in the philosophical community is called “phenomenal” color, and because of this, it seems doubtful to this author that the “raw feel” of colors is a regular topic of conversation amongst the lay community. Although such evidence can only be subjective, it would be surprising if it did not hold true broadly, given the lack of consensus in the intellectual world regarding the nature of color from which a lay notion of color might otherwise be derived. Such evidence suggests too that it is a philosopher’s myth that there is any coherent body of doctrine amongst lay people concerning the nature of color and that it is, in fact, only philosophers who readily appreciate the “naïve” conception of sensory qualities. (The high-level conceptual manipulation that philosophers are skilled in is, in all probability, a prerequisite for identifying the “naïve” content of perceptual experience within its mostly complex content.)

red, and that when sound-waves of a certain wavelength emanate from the strings of a piano, it manifests Middle C. The question is, is the quality of redness manifest from a tomato caused to arise by the emission (through reflectance) of 650 nanometer light from its surface, and the sound quality “Middle C” manifest from the piano caused to arise by the sound-waves emanating from its strings? If so, how does this causal determination of the sensory qualities by material events happen? Question (B), then, very much gives rise to an area requiring explanation on the part of the non-reductive objectivist. (For the moment we will simply note the existence of the requirement and postpone investigation of what it would take to fulfill it until later.)

The last area to be considered is one that has already been alluded to. If phenomenal colors, sounds, and smells exist objectively in the physical world, then they do so in the absence of sentient observers. This means that the non-reductive objectivist outlook is committed to the view that color manifests from surfaces, and sound and smell from locations in the general environment, when not being sensed. If this viewpoint is to attain consistency with science, then does the claim that sensory qualities manifest in observer-free environments give rise to anything that requires explanation? Does it, one is tempted to ask, even make sense? Certainly, it is deeply contrary to everything we have been led to believe about the sensory qualities and is counter to the form of thinking concerning them that currently prevails in philosophy. It is not a proven fact, however, that sensory qualities are dependent on subjectivity, so at present such a notion carries only the status of a presumption. Given this, it cannot be nonsense to posit a condition that is merely counter to a current assumption. Almost certainly, it is the depth of penetration of this assumption throughout contemporary thought that makes it hard to entertain the possibility that sensory qualities might manifest independent of subjectivity. Are there any substantive grounds for disputing it as a possibility in principle? The only philosopher who has explicitly considered the question is Berkeley, in *The Principles* (1710/2004, Part 1, Sections 3-5). His conclusion being negative, or as he puts it, “the various sensations or ideas imprinted on the sense ...cannot exist otherwise than in a mind perceiving them.” (Berkeley, 1710/2004, pp. 53-54). His argument for this position, however, is grounded in the subjectivism-laden premise that sensory qualities are sense impressions or “sensations.”<sup>5</sup> The argument proceeds by positing that it is impossible to “conceive or imagine” color, sound, smell, and other qualities without the apparatus of sensory experience (the mind) being present. According to Berkeley, this is because one cannot “conceive or imagine” things that do not represent possible perceptions,<sup>6</sup> and it would not be possible to perceive a sensory quality without a sensation arising in one’s mind.<sup>7</sup> So an un-sensed sensory quality would be an impossible perception and, hence, is impossible to conceive or imagine. There are two things at fault with Berkeley’s argument here. First, he offers no independent rationale to support the all-important premise in favor of subjectivism on which it hangs. Second, it is circular, in that the conclusion merely re-expresses the premise, albeit in a heavily modified form. Thus, what we are asked to conceive or imagine in contemplating an un-

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<sup>5</sup> “Light and colours, heat and cold, extension and figures, in a word the things we see and feel, what are they but so many sensations, notions, ideas or impressions on the sense;...” (Berkeley 1710/2004, p. 54).

<sup>6</sup> “My conceiving or imagining power does not extend beyond the possibility of real existence or perception” (Berkeley 1710/2004, p. 55).

<sup>7</sup> “...it is impossible to for me to see or feel anything without an actual sensation of that thing...” (Berkeley 1710/2004, p. 55).

sensed sensory quality is one that, by definition, (given the assumption that sensory qualities are sensations) is “sensed,” yet at the same time (not currently being an object of any sensing) is “un-sensed,” which is an impossibility by virtue of being contradictory. So Berkeley’s argument amounts only to an elaborate way of re-expressing his original assumption in favor of subjectivism regarding the sensory qualities. This is an assumption with no independent backing. Therefore, there is nothing substantive here that provides a solid case against the possibility of sensory qualities manifesting to observer-free environments, and it is fair to conclude that, as no other philosophers appear to have tackled the issue, no such case exists.

There are, then, no substantive grounds for disputing the possibility, in principle, that sensory qualities may manifest to observer-free environments. If this is accepted, then there needs to be a basis for defining the “reach” of this manifestation, when it occurs in the absence of observers (or indeed, in their presence), to bring non-reductive objectivism into line with science. So, when the quality of redness manifests from the surface of a tomato in the sunlit interior of a deserted greengrocer’s shop, how far, if at all, from the surface of the fruit into the interior of the shop does such manifestation occur? Likewise, how far, if at all, into the interior of the shop does the manifestation of smell and sound qualities reach when (a) a tray-full of pineapples ripen under the rays of the sun giving off their distinctive scent as a result, or (b) a gust of wind blows a loose, empty tin from a shelf onto the floor causing a crashing sound? In each case, what determines this distance? (We might call all of this the “distance-of-manifestation problem.”)

## **Explanatory Requirements**

In summary, from the selection of potential explanatory requirements that have been considered here, the items that turn out to genuinely require explaining if non-reductive objectivism is to achieve consistency with the scientific world-view, can be given as follows:

1. The provision of a mechanism to underpin the distinction between external sensory phenomenology and our awareness of it, which arises internally.
2. The provision of an account to explain how sensing of external sensory qualities occurs in the absence of mediation by any internal sensations or qualia. (This does not exclude the possibility of mediation by forms of representation without phenomenal content.)
3. The access-over-a-distance problem: How access is achieved by a subject located in one place to sensory qualities that are invariably located in a different one.
4. How are external phenomenal colors, sounds, and smells caused to arise by the micro-events known to be associated with them in the external world (e.g. colors by reflectance of light at certain wavelengths, sounds by emanation of sound-waves at certain wavelengths, etc.)?
5. The distance-of-manifestation problem: Whether it be during or outside of episodes of sensing, do surface phenomenal colors manifest to any distance into surrounding

reality or are they confined only to surfaces? Likewise, do phenomenal sounds and smells manifest some distance into the surroundings or are they tightly embedded in the space around the events that give rise to them? If there is manifestation over a distance, then what determines its extent?

The five explanatory requirements above may be divided into two categories: Those that relate to the condition of the sensory qualities being sensed, such as (1) and (2) and those that pertain to the condition of the sensory qualities while not being sensed, namely, (4). Requirements (3) and (5) form an interim category; they could in principle be fulfilled by an explanation that was either subject- or object-based.

## Logical Form

The case to be made in the remainder of this paper is that there is a logical form of the non-reductive objectivist viewpoint, which provides the basis of explanatory accounts for a large number of all of the above explanatory requirements in all categories. Where it does not directly suggest an explanatory account, it provides a platform from which such accounts can be given. Although the author cannot substantiate this idea, it may well be that the logical form of non-reductive objectivism to be presented here is the only one capable of doing this. First, the outline of the logical form will be set out, and then we will examine how it provides the possibility of explanations in each of the areas. The objective is not to offer a detailed solution in each case, but to demonstrate that an explanation can be arrived at in principle. The logical form will be presented in two stages: First addressed will be those requirements that relate to the condition of sensory qualities being sensed, and then we will take into account those which relate to sensory qualities while un-sensed.

It is known that during episodes of sensing, a stream of signals emanating from objects or events in the external environment enters our sensory organs and stimulates them. There follows a sequence of moderately well understood events in the visual, auditory, or other sensory systems as neuronal cells transmit signals that express information derived from the original stimuli. The processing of such signals, rich in information derived from external stimuli by the sensory and higher pathways of the brain, leads to ongoing recording in memory of that information. At its most basic, this takes the form of instantaneous storage known as *sensory memory*,<sup>8</sup> which feeds into higher forms such as short and long-term memory. The logical form of non-reductive objectivism advocated here adds to what has been said, so far, concerning the supposition that the process that we call *experience* (as in *perceptual experience* and *sensory*

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<sup>8</sup> According to the widely used “multi-store” model, memory is made up of three “stores”: the sensory register, short-term memory, and long-term memory. By sensory memory is meant the sensory register, of which there is usually held to be one for each of the modes of sensing: thus, a visual register, an acoustic, olfactory, and haptic one, and so on (Thompson and Madigan, 2005, p. 28). Information stays in sensory memory for approximately a fifth of a second (Thompson and Madigan, 2005, p. 27) and then it, or at least that fraction of it, which is attended to, passes on to short-term memory (Banyard and Grayson, 2000, p. 298) from where it can flow to the long-term store.

*experience*) is precisely this continuous and immediate one of laying down of sensory information in memory at its various levels. In the case just of sensing (our principal concern in this paper), experience is the continuous and immediate laying down of memory in its most basic form, that of sensory memory. (The more sophisticated cognitive process of perceptual experience being, according to the supposition, the continuous en-registering of information in perhaps most or all forms of memory, from sensory to short and long-term.) It is further supposed that the memory so registered does not take the form of internal, subjective “images” or representations having phenomenal content. Its content is only that of the information contained in the neuronal signals (and, therefore, derived from the external stimuli). Let us note that this logical form of the non-reductive objectivist account meets requirement (1) by providing a mechanism that explains the distinction between external sensory phenomenology and man’s internal awareness or experience of it. According to the logical form, the phenomenology of color, sound, smell, and so forth, occurs objectively in the external world, whether or not sensed. When stimulation from an object or event is processed by our sensory systems, information derived from it is recorded continuously into sensory and higher forms of memory, a process we identify as experience. Also requirement (2) is met: The logical form explains how sensing of the external, sensory qualities occurs without any mediation by internal sensations or qualia. The memory that is continuously laid down is not a stream of sensation-like images having phenomenal content, but rather it is only the information content contained in the stream of sensory signals. On this account, all phenomenal content is external, and there is no such content within the internal domain of the sensory system or so-called “mind”. This explains why, as noted by Wittgenstein (1922/1974, p. 69), the inner end of the visual cone has no phenomenal content. Paradoxically perhaps, given that we call it experience, the process of continuously recording such memory (being without phenomenal content) may be an entirely unconscious one. Clearly, we must have some awareness that the process is going on in order to be able to name it as experience, but perhaps this is similar in manner to that in which we can be aware of our breathing, without it being the constant focus of our attention. Another point is that the information patterns recorded in memory can be thought of as representations of the external world lacking phenomenal content that mediate the process of sensing. But this does not detract from the directness of access to external sensory qualities by subjects that is accounted for by the present logical form. This is because, as noted earlier, the requirement for directness does not preclude the possibility of mediation by forms of representation from which phenomenal content is absent.

Let us now extend this “first cut” of the logical form of non-reductive objectivism so that it offers a means of meeting requirement (4), which relates to the condition of the sensory qualities while not being sensed. In order to do this, we must demonstrate that an account can be provided from the logical form of how the objective sensory qualities are caused to arise by events in the physical world.

It is known from science that when light of wavelength 650 nanometers transmits, reflects, or emits from objects, they appear red, and that when sound-waves of a certain wavelength emanate from the strings of a piano, it manifests Middle C. The question is: Are the qualities of redness manifest from a tomato caused to arise by the reflectance of 650 nanometers light from its surface? Is the sound quality Middle C manifest from the piano caused to arise by the emanation of sound-waves from its strings? The simple fact is that the issues which arise here precisely parallel those which confront the subjectivist who attempts to explain how consciousness or



sensations of color or sound are caused to arise in the matter of the brain. The difficulty for the subjectivist, as Chalmers has pointed out, is that for any possible account of brain functionality, there will always remain an unanswered question: “Why is the performance of these functions accompanied by experience?” (Chalmers, 1995). Under objectivism, the same explanatory gap attends any possible account of micro-events in the physical world. Here the equivalent unanswerable question that will always remain is “Why is the occurrence of these micro-events accompanied by manifestation of phenomenal content?” Chalmers asks in relation to the brain “Why doesn't all this information-processing go on ‘in the dark’, free of any inner feel?” (Chalmers, 1995). While the objectivist might equally ask “Why don't all of these micro-events go on ‘in the dark,’ free of any phenomenal manifestation?” In other words, just as there is a hard problem of consciousness in relation to the brain so there is an exactly parallel hard problem of manifestation in relation to the external world. We might be better off speaking about a single general hard problem of reality. To what does this generalized hard problem owe its existence? The most credible suggestion seems to be that it stems from the contrast between the extreme simplicity of sensory qualities and the comparative complexity of matter (corporeal and extra-corporeal). Sensory qualities do not consist of components and so have no internal structure. In this regard they are unlike any other feature of the physical universe, including matter in all its forms. Sensory qualities, therefore, qualify for the accolade of simplest entity in the universe. It is the incompatibility of this fundamental simplicity with the structured nature of matter that makes it inconceivable that phenomenal color, sound, or smell, residing objectively in the milieu of matter, could causally affect that matter or be causally affected by it.

All of that having been said, under non-reductive objectivism it simply must be accepted that such causal determination of external sensory qualities does somehow occur in nature. It may be impossible to conceive how it happens, but under non-reductive objectivism there is no alternative, given the evidence about the association between light and color, sound-waves and sound, and so forth, to agreeing that it does. Once again, this is no different than is the case with subjectivism where, for practical purposes, one has to assume that brain events somehow causally determine internally-based qualia, even though it is impossible to conceive how such determination occurs (for the reasons given). Both positions suffer from the hard problem of reality in equal measure. Therefore, when comparing the two, the inconceivability of accounting for how physical events causally determine sensory qualities cannot constitute grounds for unilateral criticism of either.

## **Dual-Aspect Causality**

Under the present form of non-reductive objectivism, there is a dual aspect to the causal effects of physical signals (such as light and sound-waves) that emanate from objects and events in the external world. First, whether or not sentient organisms are observing, such signals determine the phenomenal color and sound that manifest from those objects and events. (Or so we are obliged to assume.) Second, during episodes of observation, the signals stimulate the observer's sense organs and sensory systems, leading to the recording of relevant elements of information in memory. This guarantees that the memory continuously laid down within the observer, although itself without phenomenal content, has an information content that during

veridical episodes corresponds in its causal determinants to those which gave rise to the external phenomenal color, sound or whatever. Concern has been expressed that non-reductive objectivism (or near-equivalent positions) renders sensory qualities as mere epiphenomena due to their lack of causal engagement (Campbell 1997, p. 182). The dual-aspect model of sensory causality, however, ensures that if sensory qualities are epiphenomena, they are ones with which the information contents of the observer's awareness are synchronized during veridical perception.

## Conclusion

There are a few further points that need to be made in conclusion. The logical form of non-reductive objectivism that has been set out here has been shown to offer explanations in all of the required areas that were identified earlier, with the exception of (3) and (5). In the case of these two requirements, an account has been offered elsewhere (Carnie, 2007), which is fully consistent with the present logical form. Thus, it is reasonable to make the claim that the logical form set out here either directly provides explanations for all of the requirements, or it provides a platform from which they may be derived. Next, it is important to appreciate the extent to which the present logical form of non-reductive objectivism runs contrary to the assumptions of subjectivism. For example, it is widely assumed that during episodes of sensing qualities like color, sound, smell, and so forth appear to us. Whereas under the present account, this is not the case. Instead, the logical structure of what happens during episodes of sensing is that phenomenal colors, sounds, smells, and so forth, simply manifest from objects and events in the external world, just as they do when in the objective state of not being sensed. (One might conceivably describe this as a case of appearing to reality, but certainly not of appearing to us.) During sensing, the only additional factor that occurs is the accompaniment of a process going on in the observer's brain: the en-registering of information in memory.<sup>9</sup> All of the appearing that happens during sensing is fully accounted for by the logical form. It would be a misconstrual, however, to think that any of it ever involves any appearing to a subject.

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<sup>9</sup>If things weren't structured in this way, one might imagine that the logical form rendered the subject experientially blind during vision to the external sensory quality of color. Thus, it might be thought that the internally-located subject requires an opening or "window" on the richly-colored external world to gain access to its qualities and that, while the logical form endows him with a process of recording sensory information in memory, this, being non-phenomenal, cannot constitute such an opening. The view that such an opening is required, however, assumes that external phenomenal colors appear to the subject, whereas this is not what is going on at all according to the logical form advocated here. Rather, during vision, external phenomenal colors are manifesting in the entirely neutral fashion that they do outside of vision. The false sense that they appear to one as a subject derives from awareness of the accompaniment of this neutral manifestation by a process (that of information en-registration in memory), which occurs in one's brain.

We can take this line of thought some steps further because it becomes questionable at this point whether any value remains to the concept of the subject under the present logical form of non-reductive objectivism. One can reasonably argue that what the concept amounts to, at least in the context of sensory experience, is the fact that the recording of information in sensory memory (i.e. “experience”), being a process that necessarily takes place in our brains, always forms the *geometrically central* (but phenomenally content-less) feature that accompanies all sensing (see Carnie, 2007, Ch. 18-19 for more on this). Furthermore, nowhere in the present account has any reference been made to mentality as part of the logical form, and the occurrence of any internal phenomenology during sensing is explicitly denied. All sensory phenomenology is accounted for as an external phenomenon, and the awareness of that phenomenology, which arises during episodes of sensing, is explained as a distinct process, the en-registration of information in memory. Memory of information, however, is a process that can be instantiated in entirely physical media (as is the case, for example, with computer chips), so the logical form of account lends itself to a physicalist interpretation of man. But a physicalist interpretation, which, uniquely, accords the phenomenal content of sensory experience a full non-reductive place. There may be other logical forms of non-reductive objectivism that are able to meet as many of the explanatory requirements as the present one while bringing this conceptual benefit, but it is hard to imagine what they might be.<sup>10</sup>

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<sup>10</sup> No claim is made that the present thesis constitutes anything like a proof of the truth of non-reductive objectivism. As mentioned in the introduction, there are many well known difficulties, such as the time-lag argument and the argument from illusion, that would have to be overcome before such a claim could be made. See Carnie (2007), however, for an approach to resolving such difficulties that is compatible with the logical form of non-reductive objectivism advocated here.