

Original Article

Access, Phenomenology and Sorites

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Abstract

The non-transitivity of the relation *looks the same as* has been used to argue that the relation *has the same phenomenal character as* is non-transitive—a result that jeopardizes certain theories of consciousness. In this paper, I argue against this conclusion while granting the premise by dissociating *lookings* and *phenomenology*; an idea that some might find counter-intuitive. However, such an intuition is left unsupported once phenomenology and cognitive access are distinguished from each other; a distinction that is conceptually and empirically grounded.

Keywords: Consciousness, Phenomenal Sorites, Cognitive Access, Lookings, Phenomenal Character.

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1. TRANSITIVITY, INDIVIDUATION OF CONSCIOUS STATES AND THEORIES OF CONSCIOUSNESS

Theories of consciousness try to provide an account of phenomenal characters and the kind of property that *undergoing an experience with certain phenomenal character* is.¹ In general terms, they maintain that the property of *undergoing an experience with phenomenal character PC* is the property of *being in a state that P-s*. For instance, identity theorists maintain that P-ing is *being identical to a certain brain state*; direct realists claim that it is *being in a certain relation with an external object*; functionalists hold that it amounts to *satisfying a certain functional role*; and, for representationalists, it is roughly *having a certain kind of representational content*.

1 Several features contribute to the way it feels to undergo a certain experience, to its phenomenal character: the redness of the apple, the herbality of the coffee, the pain in my knee. We can think of them as different experiences each with a different phenomenal character *subsumed* (Bayne and Chalmers, 2003) by a larger phenomenal state: the subject's total experience. Alternatively, one can think of them as a unique experience with a phenomenal character constituted of those features that we can call 'phenomenal properties'. The difference seems to me purely terminological. In this paper, I adopt the first way of thinking and hence I assume that it makes sense to talk of experiences whose phenomenal character is given by a unique feature. Those who feel uncomfortable with this way of speaking can translate, *mutatis mutandi*, the debate in terms of phenomenal qualities.

One relevant question—which often does not receive the deserved attention—to be evaluated when we assess reductive theories of consciousness is related to the transitivity of the relation “same phenomenal character as”. The reason is that, insofar as one accepts Leibniz's law, it seems that if the relation *same P as* is non-transitive and the relation *same Q as* is transitive, then the property of having P cannot be the property of having Q. For example, Deutsch (2005) argues that the relation *same phenomenal character as* is non-transitive, whereas the relation *same representational content as* is transitive, to conclude that representationalism is false because ‘[t]he two relations have different logical properties. They cannot be one and the same.’² Deutsch and others find support for the claim that the relation *same phenomenal character as* is non-transitive in the failure of the transitivity of perceptual indiscriminability; i.e., the non-transitivity of the relation *looks the same as*.

In this paper, I will argue that one should resist the entailment from the non-transitivity of perceptual indiscriminability to the non-transitivity of *same phenomenal character as*. Other philosophers have attempted to resist this conclusion, but they rely on ungranted empirically doubtful assumptions. I will argue that there are good reasons to resist the entailment if i) we can distinguish conscious experiences from the cognitive access we have to them (a distinction that is conceptually and empirically grounded), and ii) the way things look to us does not depend solely on the former but also on the latter.

The rest of the paper is organized as follows. Section 2 presents the case for the non-transitivity of the relation *looking the same as* and analyses the possible relation it might bear to *having the same phenomenal character*. Section 3 presents the distinction between phenomenal consciousness (or phenomenology) and the cognitive access thereof. Finally, in section 4, I argue that how things look depends on the cognitive access we have to the experience, and explain how this allows us to block the entailment from sameness in lookings to sameness in phenomenal character.

2. THE INTRANSITIVITY OF LOOKINGS

Goodman (1951) was, as far as I know, the first to consider the relation *looking the same as* to be non-transitive. The relation *looking the same as* is non-transitive if it can be the case that there are three objects A, B and C such that A looks the same as B and B looks the same as C but such that A does not look the same as C. Wright (1975) showed that perceptual indiscriminability—our ability to decide whether two objects look the same—has to be non-transitive if: i) there might be *continua of lookings*; and ii) human discriminatory powers are finite. Although the argument is not uncontroversial there seems to be good reasons for thinking that it is sound and accept its conclusion. Fara (2001) has shown that there seems to be a tension between i) and ii). However, in reply, de Clercq and Horsten (2004) have argued that such a tension only arises if we understood the idea of a *continuum* of lookings in a (quasi) mathematical sense, and that Wright's argument only requires that there is ‘no appearance of an abrupt change’ (cf. Wright, p. 345). Empirical evidence shows that our discriminatory powers are in fact finite (Chuard, 2010) and the possibility of a continuum of lookings in the required sense seems hard to reject (see figure 1). Hence, for the purposes of this paper, I will grant that perceptual indiscriminability is a non-transitive relation and hence, so is the relation *looking the same as* (the non-transitivity of lookings):

NTL $\exists A, \exists B, \exists C$, such that [to a subject S with respect to property F]: (A looks the same as B) \wedge (B looks the same as C) \wedge \neg (A looks the same as C)

² See also Perkins and Bayne (2012) for an argument against representationalism with exactly the opposite premise. Other philosophers who appeal to the failure of the transitivity of a relation in order to extract some or other consequence concerning the nature of phenomenal properties are, for example, Antony (2006); Dummett (1975); Everett (1996).

The non-transitivity of lookings has been used as a basis for arguing for the non-transitivity of the relation *has the same phenomenal character as* (non-transitivity of phenomenology). The underlying idea seems to be that there is a match between how things look and the phenomenal character of the experience we have when we look at them (Fara, 2001, p.911). Therefore, the following two principles relating lookings and phenomenology would be true:

L→PC A and B look the same to S with respect to property F→ (S's experience of A has phenomenal character PC₁) ∧ (S's experience of B has phenomenal character PC₂) ∧ (PC₁=PC₂)

PC→L A and B look the same to S with respect to property F← (S's experience of A has phenomenal character PC₁) ∧ (S's experience of B has phenomenal character PC₂) ∧ (PC₁=PC₂)

In defense of this connection between lookings and phenomenology, Deutsch remarks that '[o]ur notion of phenomenal character seems *essentially tied* to our notions of appearing the same as, or being perceptually indistinguishable from.' (Deutsch, 2005, p.9, my emphasis). I will grant this claim to some extent: the experiences one has when looking at A and B cannot have the same phenomenal character unless A and B look the same to one (PC→L). However, I part company with Deutsch when he goes beyond this. In particular, I deny the truth of a certain reading of the claim that '[t]hings that are perceptually indistinguishable [understood as differing *in respects I cannot distinguish*] cannot give rise to phenomenally different perceptual experiences' (ibid. p.10); that is, the reading that makes L→PC true. Several philosophers (Byrne, 2001; Dretske, 1995; Tye, 1997, 2002) have endorsed L→PC and claimed that the phenomenal character of the experience cannot vary unless there is a change in the way things look to me. In this paper, I will give reasons for resisting the entailment from sameness in lookings to sameness in phenomenal character, and hence resist the conclusion that non-transitivity of phenomenology follows from the non-transitivity of lookings even if NTL is true.³

We need to restrict the scope of the discussion to some kind of *ideal conditions for discrimination*. As Williamson (1990/2013) has argued, if L→PC is not adequately restricted, it seems to be straightforwardly false.⁴ It certainly might be the case that just what *ideal conditions for*

3 This alternative has been previously explored by Hellie (2005). Hellie's interesting solution appeals to the noise in signal processing to argue for the possibility of inexact representations. He maintains that we cannot perceptually discriminate on the basis of inexact representation whose content overlap. Unfortunately, as he notes (p. 491), his solution is not compatible with probabilistic representational theories, which offer a more powerful and promising informational tool to model neural representations (e.g. Skyrms 2010). Moreover, the justification of the claim that we cannot discriminate on the basis of overlapping representations requires further elaboration. For example, it seems that one can represent Mary as being between 1,62 and 1,72 m. tall and Anna as being between 1,70 and 1,80 m. tall. Those are inexact representations that overlap, but this does not seem to prevent that I can distinguish Mary and Anna with regard to their height. In any case, the considerations in this paper are independent of those offered by Hellie.

4 The first restriction has already been made explicit. We consider only the way objects look to a subject S (with respect to property F) and we do not consider intersubjective lookings. My opponent might, rightfully, also want to restrict the scope of the entailment to a particular time. I might fail to perceptually discriminate the way A looks to me at t₀ from the way B looked to me at t₁, independently of the phenomenal character of the respective experiences, due to a failure in the memory on which the required recall depends.

Finally, one might want, also rightfully, to restrict the conditions under which A and B are required to look the same. Imagine that I can perceptually discriminate A and B—they do not look the same to me with respect to property F—when they are placed next to each other (condition 1) but I fail to be able to do so when they are located apart from each other. If there is one such circumstance (condition 2)—say when the objects are closer to each other in the same lighting conditions and both are foveated—in which the respective phenomenal character one has when looking at A and B does not change with respect to that experienced in condition 1, then we would have a counterexample to L→PC (Williamson, 1990/2013, pp.59-60). The reason is that they cannot be discriminated despite their having, *ex-hypothesis*,

discrimination are, is controversial; but my opponent only requires that there are such ideal conditions. In fact, considering the empirical evidence we have regarding the way our visual system works (see Chuard, 2010 for an excellent review and discussion), I think that rejecting NTL by attempting to resist the claim that our capacities for perceptual discrimination are not limited is hopeless. For this reason, I want to grant my opponent the existence of such ideal conditions and, for illustrative purposes, I will take it that looking at Figure 1 from a standard reading distance can exemplify such ideal conditions. More precisely, I want to grant the truth of NTL*:

NTL* $\exists A, \exists B, \exists C$, such that [in ideal conditions for discrimination, to a subject S, at time t, and with respect to property F]: $(A \text{ looks the same as } B) \wedge (B \text{ looks the same as } C) \wedge \neg(A \text{ looks the same as } C)$

Although some might be willing to resist the possibility of ideal conditions for discrimination, I fail to see any independently grounded reason for that. Moreover, despite Williamson having argued that $L \rightarrow PC$ has serious counterexamples—see fn. 3—a restricted version of it, $L \rightarrow PC^*$, is not subject to uncontroversial counterexamples:

$L \rightarrow PC^*$ A and B look the same to S [in ideal conditions for discrimination at time t, and with respect to property F] \rightarrow (S's experience of A has phenomenal character PC_1) \wedge (S's experience of B has phenomenal character PC_2) \wedge ($PC_1 = PC_2$)

$L \rightarrow PC^*$ together with NTL*, entails the non-transitivity of phenomenology and hence jeopardizes any reductive theory committed to the opposite as we have seen. For example, Deutsch (2005) appeals to series such as that presented in Figure 1, to claim that the conclusion to be derived is the non-transitivity of phenomenology, given that we fail to perceptually discriminate adjacent patches. He endorses $L \rightarrow PC^*$ explicitly when he notes that '[t]he argument simply assumes that if two patches look the same in color, then the experiences of those patches share a phenomenal character.' (p.9). I will argue that even if NTL* is granted, $L \rightarrow PC^*$ can and should be rejected based on the distinction between experiences and the cognitive access we have to them.



Fig.1 Continuum of lookings.

3. PHENOMENAL CONSCIOUSNESS VS. COGNITIVE ACCESS

Ned Block (1995-2002) famously introduced a conceptual distinction between Phenomenal Consciousness (or Phenomenology) and Access Consciousness. On the one hand, a mental state is Access-Conscious if and only if (roughly) its content is available for belief formation and rational control of action, including reports of phenomenal consciousness. On the other hand, a mental state is Phenomenally-Conscious if and only if there is something it is like to be in that state. The conclusions

different phenomenal characters—*pace* $L \rightarrow PC$. If the case described in condition 2 is possible, the failure in discrimination is not due to the phenomenal characters of A and B, but rather to something else. For example, it might well be that the discrimination problem is due to the fact that discrimination in complicated cases requires mental imagination, such as the mental placing of one object by the other, which might become less effective as the distance between the objects increases.

to be derived from this conceptual distinction have remained controversial ever since the publication of the paper: do these concepts refer to different properties?

In the search for an answer to this question, the debate has recently moved away from the conceptual domain and into the empirical realm, focusing on the possibility of phenomenology without access. The notion of Access-Consciousness has been refined to that of *Cognitive Access* and the question has thus been turned into the issue of whether the neural basis of Phenomenology can be disentangled ‘from the neural machinery of the cognitive access that underlies reports of phenomenal consciousness’ (Block, 2007, p.481). And there is good evidence supporting this claim.

Based on the results of partial report experiments, such as those in Sperling (1960) and some more recent results—Landman et al. (2003); Sligte et al. (2008), etc.—Ned Block (2007; 2011) has argued that the capacity of the memory buffer in which the content of phenomenally conscious states is encoded is greater than that of cognitive access, suggesting that the content of experience exceeds what we can cognitively access. Roughly, the argument is the following:

Sperling presented participants in experiments with 3x4 arrays of letters, which were flashed up on a computer screen. He then asked them to recall the letters immediately afterwards. On average, participants were able to recall 4-5 letters (the capacity of the working memory: the memory system that encodes the information we can report on) out of the 12 they were shown. Sperling believed that all 12 letters were stored in a memory buffer that he called ‘iconic memory’, for a short period of time, but that this memory faded so rapidly that only 4 or 5 letters could be recalled. He showed this by introducing a second set of conditions into the experiment. Participants were now presented with the same matrix for the same length of time, and then they heard a note of a certain pitch. The task in this case was to recall the letters in one of the rows, depending on the pitch of the note: high, middle or low. Subjects were able to recall almost all the letters in the cued row and, hence, to recall more during these cued recall trials than during free recall. Moreover, by modifying the delay between the presentation of the matrix and the cue, Sperling was able to show that visual stimuli that are not encoded into working memory are discarded soon after their initial introduction. Block concludes that the best explanation for Sperling's results is that the content of experience is greater than what we have cognitive access to, because subjects report having seen all the letters and are able to report the letters when cued, in spite of the fact that the letters were no longer visually present. Further support for this idea comes from an experiment by Landman et al. (2003) that combines Sperling's experiment and the paradigm of change blindness. From those results, Block suggests that ‘the capacity of phenomenology, or at least the visual phenomenal memory system, is greater than that of the working memory buffer that governs reporting’.

The conclusions of such partial report experiments remain controversial (Phillips, 2011; Stazicker, 2011). However, alternative approaches have been suggested to settle the debate. Sebastián (2014) has presented further support in favour of the claim that cognitive access is not required for phenomenology, which is not subject to the controversy surrounding partial report experiments. He relates the neural correlates of cognitive access to empirical research into the neurophysiology of dreams. Sebastián shows that there is strong empirical evidence suggesting that cognitive access essentially depends on the activity of the dorsolateral prefrontal cortex (see, for example, Dehaene and Naccache, 2001; Fuster, 2008; Goldman-Rakic, 1988). However, such an area is strongly deactivated during sleep; a period when common sense and independent evidence show (Horikawa et al. 2013; LaBerge, 1988; Leclair-Visonneau et al., 2010) that we entertain conscious experiences: dreams. This suggests that the mechanisms on which cognitive access relies are not constitutive of the neural correlates of our conscious experience; and so, the two mechanisms can be disentangled. The last piece of evidence I want to mention is derived from studies in binocular rivalry. In the binocular rivalry paradigm, each eye is presented with a different stimulus; as a result, the experience of the subject alternates between the two images. Although many experiments had shown that changes in the subject's report of their experience correlate with the frontal areas responsible for cognitive access, it has been controversially suggested that such a correlation might track the reports rather than the experience. In

order to investigate this possibility, Fraessle et al. (2014) devised a paradigm to do away with the reports. Subjects were presented with a grid moving towards the left, to one eye; and one moving to the right, to the other. As a result, the subjects repeatedly experienced first one direction and then the other. The experimenters observed that a particular movement of the eyes called ‘nystagmus’ correlates with reporting and the neural networks underlying binocular rivalry. When they scanned the participant without asking any questions, they could record changes in the posterior part of the brain corresponding to the changes in perception; but not so in the frontal areas that support cognitive access (for further discussion see Block, 2014; Tononi and Koch, 2015). Although those results might not be completely conclusive, and there is still an ongoing empirical debate, they tip the balance in one direction, favouring the claim that the mechanisms underlying phenomenology are independent of those underlying cognitive access.⁵

4. COGNITIVE ACCESS AND LOOKINGS

In this section I will argue that the way objects look depends on the cognitive access we have to our experience. Such cognitive access, once we have disentangled its mechanism from the one responsible for phenomenology, might be less fine grained than the phenomenal character of the experience itself and this, in turn, explains how could it be the case that the relation *looks the same as* is non-transitive despite the fact that the relation *same phenomenal character as* is transitive: we should reject the entailment from sameness in lookings to sameness in phenomenal character (L→PC*).⁶ In doing so, I will vindicate a criterion for individuation of phenomenal characters in the spirit, I think, of the one proposed by Goodman (1951).

If NTL* is true, then the relation *looking the same as* is non-transitive. Moreover, if sameness in lookings entails sameness in phenomenal character, then some reductive theories of consciousness are jeopardized. Williamson and others have pointed out (see fn.3) that it is not true, in general, that sameness in lookings entail sameness in phenomenal character. The entailment is blocked because optimal conditions for discrimination are not satisfied. In these circumstances one might claim either that the objects involved do not look the same and that we fail, somehow, to notice the difference in lookings, or that, under those circumstances, the objects look the same but that it does not follow that the experiences involved have the same character. The problem arises when optimal conditions for discrimination are satisfied. Under such conditions, it is not clear what it would mean that the objects look different and that we fail to notice the differences. Moreover, one can maintain that NTL* is not true, namely that there are no ideal conditions for discrimination under which, with regard to F, A looks like B, B looks like C but such that A does not look like C. Fara (2011) seems to be pointing out in this direction, but once her *a priori* reasoning is, at least, called into question (de Clercq and Horsten, 2004), we would need empirical reasons for supporting such a claim, and there seems to be none. One could argue that one should reject NTL*, for example, in order to save reductive theories of consciousness. But, if this were acceptable, it would lead us to a stalemate in which one's *modus ponens* is the opponent's *modus tollens*. I want to accept NTL* and argue that the solution lies on the rejection

5 If, nonetheless, one is not convinced by the empirical evidence, the conclusion that I want to arrive at in the next section can be read conditionally: if phenomenology and cognitive access can be dissociated, then a contrastive criterion for individuation of phenomenal characters is to be preferred. Moreover, if my reasoning is correct, it shows the dependence of what some take to be a purely *a priori* debate on *a posteriori* questions.

6 One might raise doubts regarding the existence of constitutive features of our conscious experience we lack cognitive access to, by appeal to the fact that any legitimate notion of consciousness would pertain to what is ‘within the subject’s point of view’ or by stressing the fact that conscious experiences are ‘for the subject’ (Hellie, 2014). However, whether these are constitutive features of experience is controversial (see Farrell and McClelland 2017). Moreover, there seems to be no conceptual need to spell this out in terms of cognitive access. For example, in representational terms, this has been done by means of a representation of the experience itself (Kriegel, 2009) or by appeal to *de se* representation (Sebastián 2012). I am grateful to an anonymous referee for pressing me at this point.

of the entailment between sameness in lookings and sameness in phenomenal character even under optimal conditions for discrimination. This can be justified independently, as I will argue, if the way things look to us depends on the cognitive access we have to the phenomenal character of the experience, rather than just on the phenomenal character of the experience.

The link between *lookings* and *cognitive access* requires further justification. Although there might be other legitimate uses of the predicate 'looks F', the relevant notion is, no doubt, intended to be linked to phenomenology. The question is whether it depends exclusively on the phenomenal character of the experience we undergo, or also on the cognitive access we have to it. And the latter seems to be the case, for perceptual discrimination, the capacity to determine whether two objects look alike with regard to certain property, depends upon being in a position to form of judgement regarding the instantiation of certain property. And this in turn requires cognitive access. This connection is made explicitly by Fara who links 'lookings' and cognitive access by linking 'lookings' and observational reports:

The sense of 'looks' I have in mind here is that generally used for making observation reports. It is the sense according to which I may truly say that a thing looks one way, even though I know it is not in fact that way. (p. 910)

If cognitive access and phenomenology are to be distinguished, our experience is rich, in the sense that it is not limited by the capacity of the memory system underlying cognitive access. In this case there might be features of objects contributing to the overall phenomenal character of the experience, we lack cognitive access to. For example, if Block's interpretation of Sperling's experiment is correct, we lack cognitive access to the specific shape of some of the letters despite its contribution to our phenomenology. So, in this case, the letter does not *look* any way with regard to its specific shape (or at least does not look different than other letters in this regard), despite the fact that the specific shape contributes to what it is like for me to look at the matrix. If this is correct, we have, right off hand, an explanation of how it can be the case that two objects look the same under ideal circumstances for discrimination in spite of the fact that the experience we undergo when we look at them, under such circumstances, have different phenomenal character. Once we acknowledge that the mechanism of cognitive access can be disentangled from that of phenomenology and that how things look to us depend on the cognitive access we have to the experience, it can perfectly be the case that the cognitive access we have to our experience is less fine-grained than the experience itself. There are phenomenal details we might miss in the process of accessing the information: there are phenomenal differences we lack cognitive access to. This is, of course, a further empirical question and, to the best of my knowledge, there is no conclusive evidence answering it one way or the other. However, the theoretical non-question begging considerations that we are about to see, favour a positive answer, once the dissociation between cognitive access and phenomenology is accepted. In this case, A and B might look the same—we cannot perceptually discriminate in optimal conditions to do so—in spite of the fact that the experiences we undergo when we look at them are in fact different in character, because the difference in phenomenology is so small that it cannot be picked up at the level of cognitive access on which our observational reports depend: they look the same. On the other hand, the difference in the phenomenal character of the experiences we have when we look at A and C respectively is bigger. This explains why A and C look different: such difference in phenomenal character does make a difference at the level of cognitive access. Therefore, the entailment from sameness in looks to sameness in phenomenal character ($L \rightarrow PC^*$) should be rejected.

My opponent might be willing to insist that there is a conceptual connection between visual indistinguishability and sameness of visual phenomenal character. I respect this idea to some extent: if two objects look different to S, then the experiences S has while looking at them have different phenomenal character ($PC \rightarrow L$). But, if the mechanisms of phenomenology are independent of those of cognitive access and phenomenology surpasses cognitive access, we are left with no reason to think

that cognitive access, on which *lookings* depend, is as fine grained as phenomenology: there might be differences in experience we fail to notice!

If this reasoning is solid, then one is not committed to the lack of transitivity of the relation *same phenomenal character as* even if the relation *looking the same as* is intransitive. Therefore, reductive theories of consciousness have nothing to fear from “phenomenal sorites”.

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