

Schellenberg on perceptual capacities

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Did we but compare the miserable scantiness of our capacities with the vast profundity of things, truth and modesty would teach us wary language.

— Joseph Glanvill, *Sceptis Scientifica*, XXIII.2.

In *The Unity of Perception*, Susanna Schellenberg proposes to reorient philosophical discussion of perception around the notion of “perceptual capacities” — personal-level capacities to single out distal, mind-independent particulars (including objects, property instance types, or event types), such as the capacity to discriminate and single out instances of red from instances of blue. She argues that thinking of perception as constituted by the exercise of such capacities is not only illuminating in its own right, but that it provides a unified set of resources for solving, at one stroke, outstanding and heretofore largely unconnected problems about perceptual content, consciousness, and justification.

There is much of interest, and much that bears comment, in Schellenberg’s ambitious applications of perceptual capacities to these issues in the philosophy of perception. However, in what follows I’ll focus mainly on her understanding of perceptual capacities themselves, as elaborated over part I of the book, and on which her overall account depends. I’ll begin by arguing that the centrality she gives to distal discrimination is undermotivated (§1), that it leads to an overnarrow understanding of perception (§2), and that it rests on a metaphysically problematic conception of natural function (§3). Next, I’ll argue that Schellenberg’s individuation criterion for perceptual capacities commits her to treating even apparently successful, ordinary perceptual episodes as illusory (§4), and as involving the deployment of a wild proliferation of capacities (§5). And I’ll suggest that there is no adequately general way of understanding her account of the possession conditions for perceptual capacities (§6). Finally, I’ll conclude (§7).

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1 Hegemony of distal discrimination

A first remark is that, in limiting her focus to personal level capacities with the function of discriminating or singling out, Schellenberg leaves out of her account many examples of mental and perceptual functions traditionally understood in capacity terms, and which (as she notes, p33) are among the best motivations for taking capacities seriously within our thinking about the mind. For example, it is natural to describe the visual system's ability to integrate information from distinct cues (say, stereopsis, accommodation, memory about the size of objects from familiar types, blur, etc.), to arrive at an estimate of the depth of a seen object, as a capacity. But this is not a capacity to discriminate something distal (nor is it located at the personal level); rather, it is a subpersonal capacity to combine internal representations (themselves derived from discriminating distal items) in a particular way. Similar comments apply to other much-studied functions within cognitive science, including the capacity to direct endogenous attention on events, the capacity to smooth noise from receptor channels, the capacity to assign objects to locations in a spatial map, or the capacity to carry out post-receptor computations over receptor inputs (e.g., as in opponent processing in color vision, or in many forms of perceptual constancy). Nor can Schellenberg's analysis be extended to Chomskyan grammatical competence, or other competences invoked in theorizing in linguistics about language production and understanding, in the neurosciences, or in other areas of cognitive science she explicitly invokes in motivating her approach.

Given, then, that doing so marks a discontinuity with other appeals to capacities in thinking about the mind, why does Schellenberg give such an exclusive role to personal level capacities to discriminate? Because, she contends, such capacities stand at the metaphysical foundation of our perceptual relation to the world, as per her "particularity argument" (pp24–25):

- 1 If a subject S perceives particular α , then S discriminates and singles out α (as a consequence of being perceptually related to α).
- 2 If S discriminates and singles out α (as a consequence of being perceptually related to α), then S's perceptual state M brought about by being perceptually related to α is constituted by discriminating and singling out α .
- 3 If S's perceptual state M brought about by being perceptually related to α is constituted by discriminating and singling out α , then S's perceptual state M brought about by being perceptually related to α is constituted by α .

C If S perceives α , then S's perceptual state M brought about by being perceptually related to α is constituted by α .

Among other questions, we should ask about the support for premises (1) and (2), which seem to be doing much of the heavy lifting in this argument.

Schellenberg offers little argument for (1), claiming just that “it is unclear what it would be to perceive a particular without at the very least discriminating and singling it out from its surround” (p25). But is this right?

To see why it might not be, consider the case of Franco, as described by Siegel (2006, 434ff). In this case a perceiver S looks through the window of a skyscraper, directing her attention on a particular region of space. As it happens, in that very region of space is S’s good friend, Franco, who enjoys doing stunts in the sky, and who is suspended from invisible fibers and has painted his entire body in the exact shade of blue of the sky, such that S is unable to discriminate Franco from his surroundings. It is part of the description of this (admittedly contrived) case that S does not discriminate or single out Franco. Consequently, if we accept (1), we are committed to holding that S does not see/visually perceive Franco — a verdict about the case that Siegel herself accepts, but that I want to suggest is incorrect.¹

Siegel supports her verdict by pointing out that, in the case at hand, S’s visual state is insufficient for anchoring *de re* thought about Franco (something we should demand from successful instances of seeing). But plausibly the yardstick here invoked as grounds for denying the status of seeing to S’s visual state (*viz.*, that it suffice by itself for anchoring *de re* thought) is too demanding. After all, we might note that that criterion is also not met by a “close-up” variation on the case in which S is standing in front of Franco, but her visual field is filled entirely by a chromatically uniform patch of his shirt. I take it to be much less plausible that S fails to see Franco in the close-up case, even though, once again, S’s visual state does not anchor *de re* thought about Franco all by itself.² But if that is the right thing to say about the close-up case, it’s no longer clear why we should treat the original Franco case as one in which perception is absent, as we must if we are to accept (1).

At one point (p27) Schellenberg considers a variant of the close-up case in which a subject directs her visual attention on a chromatically uniform wall that fills her field of vision, and in which one might be tempted to say that the subject succeeds in seeing the wall, despite not discriminating or singling anything out (contrary to (1)). She counters by suggesting that the case is naturally construed in two phases, and that both of them are in fact in accord with (1). At first, the subject will succeed in deploying perceptual capacities to discriminate — e.g., to discriminate the part of the wall to her left from the part of the wall to her

¹It’s worth noting that Siegel (2006) only denies that there is “object-seeing” of Franco (p429), while allowing that there may be perception in some less restrictive sense (whereas Schellenberg’s (1) commits her to holding that there is no perception of Franco, full stop). It may be, therefore, that (contrary to what I say in the main text) Siegel would stop short of endorsing what I take to be Schellenberg’s view about the case.

²Interestingly, Siegel denies that there is object seeing in the close-up case as well (p435, n10), and suggests that intuitions to the contrary come from construing that case as part of a diachronically extended series of experiences had while we visually zoom in on Franco at increasing magnifications, such that we get the possibility of grounding *de re* thought for the last (close-up) experience, not from it alone, but from earlier (less zoomed-in) elements of the series. I’m not at all sure this is a correct diagnosis of the source of our intuitions in a temporally extended zoomed-in case; but, in any event, this proposal cannot account for the intuition that S sees in a punctate close-up case, whose rejection by Siegel I find it difficult to agree with.

right — and will also perceive the wall. After a while, however, the ganzfeld effect will set in, and the subject will fail both to discriminate and to perceive. Since, Schellenberg contends, both episodes (and therefore every moment in the case) are in accord with (1), the case poses no challenge to this premise.

For what it is worth, I find this description of the ganzfeld case strained; but even if it is accepted with respect to the uniform wall case, it does not resolve our worry about the case of Franco. Here there needn't be a uniform ganzfeld (e.g., the case can be elaborated to include clouds in the sky), so only the first of the two phases is potentially relevant. Moreover, in order to sustain the verdict that S sees Franco in that case, (1) requires that S discriminate *Franco* (and not merely some portion of the visual field/sky to her own left side), which, according to the stipulative description of the case, S does not.

And, indeed, Schellenberg's endorsement of (1) commits her to controversial positions about less contrived cases as well. For example, (1) seems to entail that, insofar as we do not discriminate them, we do not ordinarily see visible proper parts of the objects we see (cf. [Dretske \(1969\)](#); [Grice \(1961\)](#)). Likewise, (1) would make unavailable the claim that we see objects in the visual periphery to which we can have controlled, non-ballistic, non-automatic (hence plausibly rational) action responses but whose location at the periphery prevents us from discriminating them and their properties. Similarly, (1) would block the standard description of cases of inattentional blindness, change blindness, and the Sperling partial report/iconic memory paradigm ([Sperling 1960](#)) as situations in which we perceive (but don't discriminate) items and fail to encode them in a form accessible for conscious report ([Tye 2000](#), pp. 168–170; [Block 2007](#); [Cohen 2002](#)). And it entails, surprisingly, that when we finally do foveate the missing objects from the periphery or to which we have so far been inattentionally or change blind, or when we finally access the iconic representations of previously presented but no longer visible items in a partial report case, we thereby go from not perceiving to perceiving.

These consequences are, at a minimum, surprising. And while it may be that they can ultimately be accepted, it seems to me that they, together with Schellenberg's commitments about the Franco case, remain as (at least) significant *prima facie* challenges to (1).³

What, then, of premise (2) in the particularity argument? Schellenberg attempts to shore up this premise by subsuming it under the "general principle ... [that] if a subject is in a mental state in virtue of engaging in a mental activity, then that mental state is constituted at least in part by that mental activity" (p25). But it's not clear why we should accept this general principle. After all, the general principle is clearly not true for all the (sub-) activities in virtue of which we are in mental states. For example, if you are in a mental state of

³It is important to note that, if we give up (1) as I propose, and thereby allow for seeing without discrimination, we are not *ipso facto* committed to holding, implausibly, that perceivers see everything in their visual fields. It is compatible with the denial of (1) that object seeing may make further requirements on, e.g., the allocation of visual attention, allocation of working memory, the size and shape of the objects, etc.

perceiving, presumably you are in that mental state partly in virtue of engaging in the (sub-) activity of breathing. But your mental state of perceiving is not metaphysically constituted (even in part) by the (sub-) activity of breathing. The question a defender of (2) must answer, then, is why *mental* (sub-) activities are any different. Why might not the (sub-) activity of discriminating have a role with respect to perception analogous to that of breathing with respect to perception — viz., the role of a nomically necessary enabling condition for a mental state, but one that is nonetheless not part of its constitutive nature?⁴

2 Undergeneration

A further concern about Schellenberg’s construal of capacities within a general theory of perception is that an account based on singling out and discriminating mind-independent distal particulars is arguably too narrow — especially, but not exclusively, with respect to non-visual perception.

Thus, consider the case of thermoreception. In a now-classic paper, [Akins \(1996\)](#) argues forcefully that this form of perception is much better understood as delivering information about something “narcissistic,” or subject-involving (e.g., a steepness of temporal or spatial gradient between two responses in one perceptual system), rather than any distal quantity (e.g., ambient temperature) (cf. [Gray 2013](#)). Similarly, in a wide-ranging review, [Auvray and Spence \(2008\)](#) urge that flavor perception is a complex form of multisensory integration involving gustatory, olfactory, trigeminal, oral somatosensory, visual, and auditory cues, rather than the singling out of prepackaged mind-independent items. Or, again, [O’Callaghan \(2015\)](#) contends, on the basis of an impressive range of evidence, that phoneme perception is not a matter of discriminating distal, mind-independent, acoustical features. Indeed, even within the realm of vision, some have argued against understanding color perception in terms of the singling out of distal, mind-independent features ([Cohen 2009](#)). If any of these positions are correct, and assuming thermoreception, flavor perception, phoneme perception, and color perception are cases of perception, then they show that Schellenberg’s understanding of perception is incomplete.⁵

⁴In a similar spirit, [Block \(2005\)](#) and [Prinz \(2006\)](#) worry that enactive views of perception mistake merely causally necessary conditions for metaphysically constitutive conditions for perceptual experience; likewise, [Adams and Aizawa \(2010\)](#) object that embodied views of cognition wrongly treat causally necessary conditions as metaphysically constitutive of cognition.

⁵A possible response to this concern would be to accept that instances of thermal properties, flavors, phonemes, and colors are not strictly perceived, but to hold that they can be constituents of larger events which can be perceived. One defect of this response is that its denial that we perceive instances of thermal properties, flavors, phonemes, and colors is unattractively revisionary. Perhaps more significantly, it’s not clear that the response helps: if the property instances in question turn out to be subject-involving in ways that block a direct analysis in terms of capacities to single out distal particulars, it is unobvious that the contemplated larger events in which they are constituents won’t, therefore, also turn out to be subject-involving in the same ways, and so similarly not perceivable on Schellenberg’s view.

3 Natural function

It is central to Schellenberg's proposal that perceptual capacities have the natural function of discriminating and singling out particulars. This commitment invites a question about the metaphysics of such functions: just what is it that fixes or grounds the natural function of perceptual capacities?

Schellenberg is clear that she does not wish to ground such functions in the intentional states of users/theorists/interpreters ("The notion of function in play is a notion of natural function. It is natural in that it is independent of interpretation" p35) because she does not take them to be relativized to interpreters. A consequence of this commitment is that she cannot understand the natural functions at issue by extending to them a standard intentional-state based metaphysics of the functions of artifacts. Moreover, and in contrast to etiological/teleological conceptions of function in the tradition of [Millikan \(1989\)](#) and [Dennett \(1991\)](#), Schellenberg denies that her functions are metaphysically grounded in their actual history:

No doubt, we have the perceptual capacities that we do due to our phylogenetic and ontogenetic background. The point is that we can analyze the function of those capacities without appealing to how we came to have them. Indeed, there is no sense in which the phylogenetic or ontogenetic history of a subject is relevant for determining the function of her capacities (p35).

This is important to Schellenberg, since she wants to avoid the prediction, which she presents as a cost of etiological/teleological views (p36), that [Davidson's \(1986\)](#) Swampman lacks perceptual capacities. It is, I suppose, open to her to hold that the functions of capacities are irreducible and metaphysically primitive, however in so far as such metaphysically brute functions/teleology have struck many as deeply mysterious, this seems an awfully difficult option to accept.

Ultimately, then, given that she is committed to rejecting the standard reductive understandings of function, and that the non-reductive alternative is so puzzling, I remain unsure how Schellenberg understands the metaphysics of natural functions, or, therefore, of the perceptual capacities that lie at the heart of her conception of perception.

4 The ubiquity of illusion

For Schellenberg, perceptual capacities are individuated by the mind-independent particulars they have the function of singling out. It follows from this view that there can be overlapping perceptual capacities — e.g., my capacity to single out instances of red will overlap significantly with my capacity to single out instances of scarlet. Moreover, as far as I can tell there is nothing principled in Schellenberg's view to prevent gruesome (and perhaps disjunctive) capacities; if so, then this will make for a further type of overlap between capacities (e.g.,

between my capacity to single out instances of grue and my capacity to single out instances of green).

This feature of her view has interesting consequences for the assessment of ostensibly perceptual episodes as veridical or otherwise. Schellenberg tells us that whether such an episode counts as an instance of perception, illusion, or hallucination depends on whether one uses one's capacities successfully. But if one episode can be counted as an instance of distinct, overlapping capacities, our assessment of it must be relativized to a choice of capacity. To see this, suppose I undergo a visual episode e , and single out a distal duck. To assess whether e is an episode of veridical perception, I need to know whether it is a successful deployment of my perceptual capacities. It is successful relative to my capacity to single out ducks. But it is, according to Schellenberg, unsuccessful relative to my capacity to single out platypuses. And it is, once again, successful relative to my capacity to single out ducks or platypuses. Given Schellenberg's view that employing a capacity requires being differentially sensitive to particulars of the type in one's environment (p49ff), it seems to follow that I employ all of these capacities in the one episode e (as well as many further capacities to single out instances of color, form, and on and on). Consequently, this view would seem to allow (not implausibly) that the one episode e can be simultaneously good and bad relative to different capacities.

However, a less attractive result arises from the interaction of the latter consequence and Schellenberg's contention (p44) that perceptual episodes are illusory in cases where the subject employs at least one capacity baselessly. For it would seem that every episode that is a successful deployment of a perceptual capacity C_1 is, additionally, a baseless employment of a distinct, overlapping, capacity C_2 . For example, every successful deployment by a human perceiver of the capacity to single out ducks is also a failed deployment of the capacity to single out ducks present on earth before human perceivers. But if every ostensibly perceptual episode counts as illusory relative to some or other perceptual capacity the subject employs, and if the episode as a whole is counted illusory just in case the subject employs in it at least one capacity baselessly, then every such episode, no matter how otherwise successful, should count as illusory.

5 Proliferation

A related but distinct concern is that, given Schellenberg's individuation criterion for perceptual capacities, the view threatens to proliferate capacities wildly. I take it this consequence would be unwelcome to Schellenberg, who imposes a "repeatability condition" on capacities ("A necessary condition for C_α to be a perceptual capacity is that C_α is repeatable," p48), precisely in order to avoid a capacity proliferation. But I worry that she is nonetheless committed to such a proliferation.

For, given her individuation criterion, her view would seem to count each of the capacities (a)–(c) as distinct: though they may agree in their extensions

(i.e., the individuals it is their function to single out) in the actual world, she clearly intends her capacities to extend to non-actual worlds, and there clearly are worlds where the extensions of (a)–(c) come apart.

- (a) the capacity to single out ducks
- (b) the capacity to single out ducks iff grass is green
- (c) the capacity to single out ducks iff snow is white
- (d) the capacity to single out ducks iff S

And, if this is right, then for the same reason there should be a separate (albeit actually coextensive) capacity formed by substituting an arbitrary contingent sentence for the schematic letter S in (d).

Moreover, a variant of this point extends to capacities formed from *non*-contingent sentences S , given Schellenberg's later claim that even necessarily coextensive capacities can be distinct. If, as she claims, singling out a triangle in virtue of its three-sidedness is employing a different capacity from singling out a triangle in virtue of its three-corneredness (p52), then we should count the capacities in (e–g) as distinct (albeit necessarily coextensive) as well.

- (e) the capacity to single out ducks iff $0 + 0 = 0$
- (f) the capacity to single out ducks iff $0 + 1 = 1$
- (g) the capacity to single out ducks iff $0 + \pi = \pi$

...

Likewise, then, for every capacity formed by substituting any arbitrary necessary sentence for the schematic letter S in (d).

Suppose we are willing to admit this large number of capacities into our ontology. Still, we can ask: does an ordinary perceiver S deploy all these multiple capacities in an ordinary perceptual episode in which she is differentially sensitive to a distal particular α ? It's hard to see why not. For, in the envisaged circumstance, α is an instance of multiple (contingently or necessarily) coextensive types. If contingently coextensive, S 's differential sensitivity to the two types will align in every actual case; if necessarily coextensive, her differential sensitivity to the two types will align in every possible case. Consequently, since S is (actually/necessarily) differentially sensitive to particulars of one such type iff she is differentially sensitive to particulars of the others, no (actual/possible) behavioral response will pull the two apart.

Schellenberg might attempt, nonetheless, to deny that S deploys all such coextensive types by treating the deployment of capacity C as requiring a person-level intention involving C (and not involving distinct but coextensive capacities). But this proposal (which she doesn't advocate) would seem to carry the costs of rendering perception implausibly overintellectualized, and

hostage (both as a general matter and on particular occasions) to our cognitive-intentional repertoire. Assuming she doesn't wish to go this way, then, it would appear that Schellenberg is committed to holding not only that there are infinitely many perceptual capacities, but that ordinary perceivers deploy infinitely many of them in ordinary perceptual episodes.

6 Possession

Schellenberg offers a complex possession condition for capacities:

A subject S possesses a perceptual capacity C_α if and only if the following counterfactual is true of S: S would be in a position to discriminate and single out a particular α_1 , where α_1 is a particular of the type that C_α functions to discriminate and single out if S were perceptually related to α_1 , (i) assuming S is perceptually capable (awake, alert etc.), (ii) assuming no finking, masking, or other exotic case obtains, and (iii) where S being perceptually related to α_1 means that (a) the situational features are such that α_1 is perceivable to S (good lighting conditions etc.), (b) S has the relevant sensory apparatus that allows her to gain information about α_1 , and (c) S is spatially and temporally related to α_1 such that S is in a position to gain information about α_1 via her sensory apparatus (p40).

It is quite clear that the complex qualifications on the right hand side of this proposal are essential to its proper interpretation, as the unrestricted counterfactual that omits these qualifications is (as Schellenberg is certainly aware) obviously false. But this invites us to ask: assuming the right hand side is being offered as an informative analysis, how are we to make sense of the conditions that make it up, every one of which contains implicitly or explicitly elliptical elements ('etc.', 'other exotic case,' 'relevant')? If this is to be an informative analysis, we need principled, general, and non-circular specifications of every one of these conditions (and not just lists of the form: not in the dark, not while distracted or drunk, in good lighting, ...) of, *inter alia*, the perceptual capability for the use of C_α , the situational features for α , the sensory apparatus for α , and the spatial and temporal relations relevant to α .

Unfortunately, Schellenberg doesn't say much more by way of providing such principled specifications, and it is unobvious that there is anything suitably informative, substantive, and general that can be said. One reason for concern on this score is that just which situational features, spatial/temporal relations, and so on are conducive to veridical perception of α plausibly depends on just which α is at issue. For example, if α is a low-intensity visual stimulus, being dark-adapted is extremely helpful to making S perceptually capable; if α is a high-intensity visual stimulus, dark adaptation is unhelpful or harmful to S's perceptual capability. If α is a visually uniform texture, temporally extended haptic exploration might be a useful piece of sensory apparatus; if α is a chemical compound contained in a flask, not so much. If α is an amoeba, the best

situational features probably involve looking through a microscope; if α is an elephant, they don't. But if just what counts as S 's being perceptually capable, as a non-exotic case, as a perceptually conducive situational feature, as a relevant sensory apparatus, and as a perceptually conducive spatiotemporal relation vary with α , it is unclear that there is any way of substantively explicating the qualifications appearing on the right hand side of Schellenberg's account of the possession conditions for perceptual capacities that generalizes across the full range of α to which she wants her account to be applicable.⁶

7 Conclusion

The Unity of Perception is an ambitious and wide-ranging book — one that presents a unified account and then uses it to address Big Questions about perception. Though her applications of the framework to the topics of perceptual content, consciousness, and justification have not been my focus in the foregoing, Schellenberg's proposals are important, and will play a role in future discussion of these matters. In any case, and despite my criticisms of her development above, I am sympathetic to Schellenberg's contention that the notion of perceptual capacities has much to offer for philosophical theorizing about perception.⁷

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⁶One might alternatively give up the aim of understanding the possession condition non-reductively. But Schellenberg's optimism about an explication of the finking/masking condition ("Finding a formulation of the capacity-to-counterfactual inference that is indefeasible in light of all possible finking, masking, and similarly exotic cases would be a project of its own. Therefore, I will here work on the independently plausible assumption that no such exotic cases obtain" p41) suggests that she hopes for a reductive account.

⁷I have benefitted from discussions of this material at sessions on *The Unity of Perception* at the 2018 meetings of the Southern Society for Philosophy and Psychology and the Pacific Division of the American Philosophical Association. I am grateful to audiences at those events, and to Alex Byrne, Matthew Fulkerson, Mike Martin, Matthew McGrath, Mohan Matthen, Eliot Michaelson, Ram Neta, Susanna Schellenberg, and Ayoob Shahmoradi for helpful comments and discussion.

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