

NORWOOD RUSSELL HANSON'S ACCOUNT OF EXPERIENCE

AN UNTIMELY DEFENSE

Our beliefs and theories about the world may be wrong. But ultimately, we trust, our observations will help us correct them, hold them to objective standards, and keep our dealings with the world rational, responsive, and responsible to the facts. Observation, we think, plays a vital rational role; it constrains our thinking by anchoring it to reality's solid grounds.

As is widely acknowledged, too, observation is also thoroughly theory-laden. We couch it in terms that implicate theories we do or did once hold. And though we routinely distinguish observational from non-observational vocabulary, that distinction is malleable, perhaps purely pragmatic, or merely methodological. Moreover, our philosophical predecessors realized that items on each side of the distinction depend in various ways on items on the other. Consequently, the search for an independent stratum of observation, suitable as a semantic and epistemological foundation, began to look hopeless, if not ill-conceived. However, non-foundationalist alternatives such as full-fledged semantic holism or epistemological coherentism seem unpalatable, too. Such views provide ample room for semantic and epistemological interdependence. But if they do not credit observation with any special epistemological significance, these views surely go too far.

Observation as constraining and anchoring our thinking to the world and observation as thoroughly infused by theory—both ideas are now deeply entrenched. But how can we characterize observation and its rational significance while giving theory-ladenness its due? How can observation free us from the superstitions that may affect it, how constrain our thinking while depending on what it purports to constrain? In addressing these issues, I submit, we benefit from revisiting the view of the philosopher who coined the term 'theory-ladenness of observation' in the first place: N. R. Hanson.

Ultimately, I will argue that Hanson's account of experience succeeds where the two currently dominant contemporary accounts of experience fail. They cannot accommodate both that observation is both theory-laden and provides empirical constraint while keeping the rational role of experience unimpaired. But if suitably developed, Hanson's account can.

On Hanson's account,¹ theory-ladenness is not a contingent, but an essential feature of scientific observation: it must be theory-laden to be epistemically significant.² Often, the term 'observation' is used rather liberally, even to report what cannot literally be seen. Hanson restricts its use to visual observation: throughout, his discussion is couched in terms of seeing.³ The questions we need to address are: why, and in what sense, must such seeing be theory-laden? And if so, how can it still constrain and anchor our thinking?

To address the first question, I will examine three claims Hanson endorses:

- (1) Epistemically significant seeing involves *seeing as*.
- (2) *Seeing as* is intelligible only in terms of *seeing that*.
- (3) Through *seeing as*, beliefs can affect one's visual field.

§§1-3 are devoted to these claims, respectively. In §4, I address the second question and extract Hanson's account of how observation constrains our world-directed thinking. In §5, I contrast Hanson's account with the two dominant contemporary views on experience, relationalism and representationalism, and show that, if suitably interpreted, Hanson's view is superior to both.

Hanson's important insights have been unduly neglected, so I find providing a thorough reconstruction of his view intrinsically valuable. But the impatient reader may be eager to see the pay-off. To her, I recommend she jump ahead to the summary on page 21, the beginning of which is marked as follows: [*]. This way, she will quickly get to the contribution my analysis of Hanson's view makes to the debate I discuss in §5. What she finds there, I hope, will whet her curiosity and eventually redirect her to §§1-4. The patient reader, on the other hand, may just read on.

§1 *Epistemically significant seeing involves seeing as*

Seeing, Hanson claims, is not just being in some physical state:

¹ Cf. Hanson 1958 [henceforth: *PoD*], chapter 1; Hanson 1969 [henceforth: *PD*]. Hanson's view is seldom discussed these days. Radder 2006 and Lund 2010 are rare exceptions.

² Affirming that theory-ladenness is an essential feature of scientific observation challenges a common preconception. On it, theory-ladenness appears not as essential to observation, but as problematic, as something that must be minimized and, ideally, eliminated, as it allegedly detracts from our observations' objectivity.

³ Though Hanson's arguments may apply to other modalities, too, I will not argue the point here.

(1) Seeing is an experience. A retinal reaction is only a physical state—a photochemical excitation. [...] People, not their eyes, see. Cameras, and eye-balls, are blind. Attempts to locate within the organs of sight (or within the neurological reticulum behind the eyes) some nameable called ‘seeing’ may be dismissed. That Kepler and Tycho do, or do not, see the same thing [i.e. while looking at the sun at dawn] cannot be supported by reference to the physical states of their retinas, optic nerves or visual cortices: there is more to seeing than meets the eyeball. [*PoD*, p. 6f., cf. also: *PD*, ch. 4]

As experiences, seeings are conscious states, which, passage (1) indicates, cannot be characterized in exclusively physical terms: there is more to seeing than meets the eyeball. Passage (1) also references a fictitious case Hanson frequently revisits: Tycho and Kepler look at the sun at dawn, in identical settings. Both visually relate to it and have normal vision. What is etched on their retinas may be identical, like their respective sketches of the scene [cf. *PoD*, pp. 6-7]. But in an epistemically significant sense, Hanson urges, they start from different data. Facing the same objects, they see different things [cf. e.g. *PoD*, p. 4].⁴ How? And what makes seeings (epistemically) significant to begin with?

On a widely-accepted gloss, to say that experiences are conscious states is to say that they are states there is *something it is like* for one to be in.⁵ Moreover, seeings have a distinctively visual aspect; they involve being visually struck in some way. ‘What it’s like,’ however, is an umbrella term: *what it’s like* to have an experience can vary with e.g. what items one faces, one’s response, and the internal and external circumstances of one’s experiencing. Tycho and Kepler may differ in *what it’s like* for them to see the sun in some, but not other respects. Some of these respects may, others will not help explain the sense in which Tycho and Kepler see different things. Moreover, while *seeing* involves being visually struck in some way, being so struck does not determine what things one sees. One can be struck in the same way while facing different objects, and struck by the same objects differently.

To understand how, as we experience visually, we can see (different) things, something else must enter the equation. *Seeings* may trigger, but are no instances of judgments: we can judge without *seeing* and *vice versa*. But judgments and significant *seeings*, Hanson thinks, share an important feature: both

⁴ There is of course a prior sense, in which, as they visually relate to the same object, both see it. But there may also be a sense in which they see different things. The latter is what Hanson is after.

⁵ The expression, which goes back at least to Wittgenstein’s *Remarks on the Philosophy of Psychology*, famously figures in Nagel’s 1974 characterization of conscious states as states there is something it is like to be in (cf. *ibid.*, p. 519), and is very widely used. For references and discussion on the semantics of ‘what it’s like’ sentences, cf. Stoljar 2016.

involve *concepts*. This assumption is crucial to his account of how two observers who face identical objects can see different things and, more generally, of how *seeing* can be epistemically significant to begin with.

To be epistemically significant, *seeings* must be able to bear on our beliefs. Not all *seeings* are like that. Peeking through a microscope and staring through the window of a moving train, these are instances of *seeing*. But one may be ignorant of what one sees, or stare mindlessly. When Hanson contends that such *seeings* lack epistemic import, his point is broadly Kantian. Without concepts, Kant famously claimed, intuitions are blind (Kant 1968, B 75). Similarly, Hanson holds that *seeings* that are exhausted by one's being visually struck in some way or other remain kaleidoscopic. To acquire the ability to bear on our beliefs, the visual aspect of *seeing* must be brought under concepts. Epistemically significant seeing requires concepts. It must, Hanson suggests, involve *seeing as*.⁶ His idea, roughly, is this: as we observe the items we face, we *see* them *as* things of a certain kind, as having certain properties, and as behaving in certain ways. Perceptual judgments about them may either cohere or clash with the expectations and beliefs we harbor concerning what we *see* them *as* and, hence, either render inductive support to them, or trigger revision.

We will explore this further. For now, let us record that according to Hanson, epistemically significant *seeing* involves concepts and, more specifically, *seeing as*. Let us observe, too, that *seeing as* differs from both judging and *seeing that*. I can *see* something *as F* while judging, or *seeing, that* it is not *F*.⁷ Nevertheless, Hanson claims, *seeing as* and *seeing that* are intimately related: the former is unintelligible without the latter. To see why, we must further explore Hanson's notion of *seeing as*. This will reveal why, for Hanson, scientific observation *must* be theory-laden, and how Tycho and Kepler, looking at the same sun in identical settings, can both *see* it, both *see* it *as* the sun, and still see different things.

⁶ Why *seeing as*? Hanson rejects sense-datum views, on which sense-data are associated with unique meanings that they carry on their sleeves, as it were. Such views are incompatible with what Hanson took to be a fact: experiences of identical items can be *seeings* of them *as* different things. I return to this issue in §3.1.

⁷ Sometimes we wince even when we know that what we see, rather than a real tiger jumping at us, is in fact a computer-generated 3D simulation presented to us on a screen. If fear responses were primarily hooked up to *seeing as*, not to *seeing that*, this would make good evolutionary sense.

§2 *Seeing as* is intelligible only in terms of *seeing that*

Consider the following passage:

- (2) There is a ‘linguistic’ factor in seeing, though there is nothing linguistic about what forms in the eye, or in the mind’s eye. Unless there were this linguistic element, nothing we ever observed could have relevance for our knowledge. We could not speak of significant observations: nothing seen would make sense, and microscopy would only be a kind of kaleidoscopy. For what is it for things to make sense other than for descriptions of them to be composed of meaningful sentences? [*PoD*, p. 25]

If nothing about what forms in the eye is conceptual (or *linguistic*⁸) then on Hanson’s view, it remains kaleidoscopic. But if, to be relevant for knowledge, and to make sense, *seeing* must involve concepts – indeed: *seeing as* – how are concepts involved? As passage (2) indicates, Hanson thinks that concepts are operative in epistemically significant seeing itself.⁹ In it, visual and conceptual elements are thoroughly blended: “Seeing is, I should almost like to say, an amalgam of the two—pictures and language” [*PoD*, p. 25].¹⁰ Relatedly, Hanson denies that such *seeing* is a two-stage process:

- (3) [O]ne does not first soak up an optical pattern and then clamp an interpretation on it. [...] Ordinary accounts of [...] experiences [...] do not require visual grist going into an intellectual mill: [rather,] *theories and interpretations are ‘there’ in the seeing from the outset.* [*PoD*, p. 9f., emphasis added]

Together, passages (2) and (3) reveal a further aspect of Hanson’s view: the intelligibility of *seeing* is construed in terms of meaningful sentences. Not just concepts, but theories and interpretations are ‘there’ in the seeing.

Though he does not quite put it this way, Hanson thinks that having epistemically significant experiences requires that experiencing subjects inhabit some belief context. Moreover, some of the beliefs that such a context contains must relate the concepts which on his view epistemically significant *seeing* involves to other concepts. Per Hanson, what a concept operative in experience means, to a subject *S*, is at least partly determined by what role it plays in *S*’s belief context.¹¹ Indeed, having *some*

⁸ Presumably, Hanson’s reason for calling that element *linguistic* is that, like Wittgenstein, whom he cites frequently, he takes thinking to ultimately depend on language.

⁹ Albeit in a different context, McDowell 1994 argues roughly for a similar claim: in epistemically significant experience, spontaneity, rather than operating *on* receptivity, is operative *in* receptivity itself.

¹⁰ Here, as in much of his discussion, Hanson draws on Wittgenstein’s *Philosophical Investigations*.

¹¹ The meaning of concepts need not be *exhausted* by their conceptual role. Tycho and Kepler *see* the sun *as* different kinds of thing, though they visually relate to, and refer to, the same physical object. If reference is a part of a concept’s meaning, Tycho and Kepler’s concepts differ in the dimension of sense, not in that of reference.

such role is essential to something's being a concept to begin with; nothing could be an application of a concept (in seeing or otherwise), if no such context were available. And indeed, absent any belief context that further articulates the concept \underline{E} , what could *seeing* something *as F* possibly be?¹² Subjects could not intelligibly *see* anything *as F* if they lacked beliefs about F s entirely, including beliefs about how F s and non- F s differ.¹³ *Seeing as F*, that is, requires a context provided by one's beliefs about how F -ish items relate to other items: all F s are G , probably H , perhaps J , certainly not K , say. Hanson allows that such contexts can remain implicit, "built into" thinking, imagining and picturing" [*PoD*, p. 14].¹⁴ Crucially, though, without *some* such context, *seeing as* cannot occur.

Let us return to Hanson's claim that *seeing as* and *seeing that* are intimately related. Sometimes he suggests that *seeing* something *as F* is *seeing that* it may be expected to behave in all the ways F s do [cf. *PD*, p. 116].¹⁵ Sometimes he says, more cautiously, that *seeing* something *as* a certain kind of thing is *seeing that*, if suitably circumstanced, it does, will, or would probably react in ways characteristic of what it is *seen as*.¹⁶ The claim that *seeing as* involves *seeing that*, I submit, encapsulates in a slogan the following

¹² "The appropriate aspect of the illustration is brought out by the verbal context in which it appears. *It is not an illustration of anything determinate unless it appears in some such context.* [...] The context is part of the illustration itself." *PoD*, p. 14 (emphasis added). This obtains not just in illustrations, but "in all seeing." *PoD*, p. 17

¹³ Suppose that upon seeing an unfamiliar kind of object, you decide to call it F . Can't you now, *pave* Hanson, *see it as F*, even though you lack the (allegedly) requisite belief context concerning F s? "New visual phenomena," Hanson responds, "are noteworthy only against our accepted knowledge of the observable world." *PD*, p. 109. The ability to single out objects as unfamiliar is intelligible only in the context of the ability to distinguish them from familiar ones. This in turn requires attributing properties to them that one believes they share with other objects, lacks, or both. As one ostensively defines something as F , where " F " is a newly coined term, the context such beliefs constitute and the ability to make or withhold attributions of the properties figuring in them thus make both one's ostensive definition and one's subsequent *seeing* items *as F* intelligible to begin with.

¹⁴ The passage continues (with a nod to the Gestaltpsychologists in a footnote): "We are set to appreciate the visual aspect of things in certain ways." Also: "Such 'contexts' are very often carried around with us in our heads, having been put there by intuition, experience, and reasoning." *PD*, p. 100

¹⁵ This is too strong. We cannot expect things to behave in ways we don't believe they can. Expressions of expectations, if they complement the *seeing that* locution, are constrained by what we believe.

¹⁶ *PoD*, p. 21: "To see fig. 1 as a transparent box, an ice-cube, or a block of glass is to see that it *is* six-faced, twelve-edged, eight-cornered;" *PoD*, p. 18: "The schoolboy and the physicist both see that the X-ray tube *will* smash if dropped;" for the probabilistic qualification, see e.g. *PD*, p. 112; *PoD*, p. 20f.: "What is it to see boxes, staircases, birds, antelopes, bears, goblets, X-ray tubes? It is (at least) to have knowledge of certain sorts. [...] It is to see that, *were* certain things done to objects before our eyes, other things *would* result" (all emphases added). Note also *PoD*, p. 24, where he claims that *seeing* something *as* something is to *see that* certain further observations are *(im)possible*. Hanson seems to hold that for a concept operative in *seeing as* to be intelligible, the belief context it inhabits must involve at least implicit commitments to subjunctive claims. Though I cannot pursue this here, this view puts Hanson in a camp with Kant and Sellars, who as Robert Brandom argues, subscribed to what he dubs the *modal Kant Sellars-thesis*. On one rough formulation of it, "[t]he ability to use ordinary empirical descriptive terms such as 'green', 'rigid', and 'mass' already presupposes [implicit] grasp of the kinds of properties and relations made explicit by modal vocabulary." Brandom 2008, p. 96f.

line of thought: It starts from Hanson’s assumption that concepts are operative in in epistemically significant *seeing* itself, and that such *seeing* involves *seeing as*. For these concepts to imbue experience with significance, they must themselves be significant. In general, for a concept \underline{E} to have some significance to a subject S , is for \underline{E} to play some role in S ’s belief context. The beliefs contained in this context that specify what is required and entailed by some object’s falling under \underline{E} , including beliefs concerning the various ways *being F* relates to and differs from having other properties, serve to articulate an essential part of what, to S , \underline{E} means.¹⁷ What a subject S ’s *seeing* something *as F* amounts to thus depends on S ’s beliefs about F s: on what meaningful sentences S would, in characterizing F s, assert. Jointly, these sentences constitute the set of suitable complements for the ‘*seeing that*’ locution.¹⁸ Such complements may be rather varied. They need not e.g. specify actual or possible experiences, nor anything visible, though they may [*PoD*, p. 22].¹⁹ Also, some concepts *seeing as* involves may link up with numerous beliefs. But for the *seeing* to be significant, links to few beliefs suffice.²⁰

Seeing that, Hanson asserts, “threads knowledge into our seeing” [*PoD*, p. 22; *PD*, p. 107; see also the passages quoted in fn. 16]. The importance of *knowledgeable* beliefs is something we shall consider. First, however, note that some of one’s beliefs about e.g. F s may be false or irrational. Accordingly, in *seeing* something *as F*, one can be mistakenly take oneself to *see that* something is, could, or would (probably) be the case, if certain other things obtained or happened. *Seeing that* is of course factive. But something besides knowledge and true belief can be threaded into seeing as well. Acknowledging this

¹⁷ In what follows, I focus on beliefs, but the requisite context may be present in form of commitments to apply concepts, commitments at least partly implicit in what the subject does.

¹⁸ Which of these beliefs are more or less salient may of course vary across different situations.

¹⁹ In some cases, one may, in a sense, *see that* if x happened, y would, too: If I moved my hand a little closer to the rabid dog’s snarling muzzle, I would surely lose a finger or two, don’t you see? But *seeing* a certain mark on a black board *as* a 3 involves, *inter alia*, *seeing that* adding 1 to what it represents yields 4. Lest we uncharitably think Hanson credits us with perceptual access to modal contexts, what *seeing that* threads into *seeing* need not itself pertain to something visible.

²⁰ See also fn. 13. Sometimes, how concepts operative in seeing differ come out not in what one would or could say about them, but in their application. Consider looking at an eye chart through a manual refractor, while the oculist who assesses your eye-sight keeps exchanging the lenses. During your subsequent experiences, you *see* the chart *as* (but typically won’t not judge it to actually be) differing in blurriness. Generally, Hanson will urge, *seeing* things *as* (more or less) *blurry* is intelligible only against the backdrop of belief contexts that relate ‘blurry’ in various ways to further beliefs, and that, presumably, imply that blurriness comes in degrees. *Seeing* the chart *as* more (or less) blurry is an epistemically significant experience. One can issue judgments based on subsequent visual experiences due to how blurry one *sees* things *as* while having them. At the same time, there may not be much one can *say* about what is distinctive of them. Thanks to Alessandra Buccella for urging me to comment on such cases on Hanson’s behalf.

allows us to explain both in what sense Tycho and Kepler can see different things and why scientific observation must be theory-laden. Consider the following passage:

- (4) Seeing the dawn was *for Tycho* [...] to *see that* the earth's brilliant satellite was beginning its diurnal circuit around us, while for Kepler and Galileo it was to see that the earth was spinning them back into the light of our local star. [*PoD*, p. 20, emphasis added]

We, of course, side with Kepler. Tycho's view is geocentric; Kepler's, like ours, is not. Still, *for Tycho*, i.e. by the lights of what he thought he knew, *seeing* the dawn – i.e. *seeing* the sun at dawn, *as* the sun – *was to see that* the earth's brilliant satellite was beginning its diurnal circuit around us. Again, since *seeing that* is factive, *we* cannot assert that this is what he saw. But he would have asserted it, which is what the insertion of 'for Tycho' signals. Surely Tycho's belief context was crucially shaped by his belief that the sun revolves around the stationary earth. Failing to acknowledge this is failing to grasp what thing he saw. Again, Tycho and Kepler visually relate to the same object. Both *see* it *as* the sun. But to the extent in which their belief contexts differ, they differ in what, to them, the concept sun means, which in turn imbues their experiences with (*differing*) epistemic significance.²¹ In this sense, theories are there *in the seeing*. Tycho and Kepler *see* the sun *as* the heavenly body that figures in their respective theories. Their theories differ; hence they see different things, though they look at the same objects and though the visual aspect of their experience may be identical.

To sum up: starting from the Kantian idea that epistemically significant seeing must involve concepts, Hanson suggests that such seeing involves *seeing* what one faces *as* something. For any concept ψ to be operative in some S 's *seeing* something *as* ψ , he holds, a context must be present, constituted by S 's beliefs about ψ -ish things, which serve to articulate what S takes such things to be and what S takes *being* ψ to entail or require. For any ψ , *seeing* something *as* ψ is intelligible only in the presence of and in terms of some such context. If, as in scientific observation, such a context contains *theories* about ψ -ish things, Hanson's claim ensues: scientific observation *must* be theory-laden.²²

²¹ Also, the extent to which Tycho and Kepler *share* theories is the extent to which they *see* the same thing. Cf. *PoD*, p. 18.

²² Such theories, recall, may figure in contexts implicitly. Two clarifications: First, some (cf. van Fraassen 1980) characterize theories, not as sets of beliefs, but as families of models and reject the assimilation of theories to belief contexts. But if proponents of such a view grant that proponents of different theories hold different beliefs, Hanson's point is secured. Second, theory-ladenness is not what makes seeing epistemically significant in general. For many ordinary

Seeing that, Hanson claims, threads *knowledge* into our seeing. This comes out e.g. in what Hanson claims *attributing* states of seeing requires:

- (5) [What must] have taken place for a man to be described as seeing a [...] spirochete; unless a person had had at least one visual sensation and *knew* what a spirochete was [and, Hanson adds elsewhere: *what it looks like* (e.g. *PoD*, p. 21)], we would not say that he had seen a spirochete. [*PD*, p. 112, emphasis added.]

In attributing to you that you *see* an apple, I might simply report that you are visually related to one, that you are awake, not drugged, etc. For this attribution to be true it is not necessary that you know anything.²³ But Hanson's point concerns not such cases, but cases of *epistemically significant seeing*. Applied to our example, his claim is that I cannot intelligibly attribute to you that you *see* something *as* an apple unless I take you to know what apples are. In other words, I must assume that you hold at least some beliefs about them that I, too, consider as knowledgeable complements of the *seeing that* locution.²⁴ Again, we grant that Tycho *saw* the sun *as* the sun while acknowledging that some of his sun-related beliefs were false. However, if *all* of them had been false, so would have been those that serve to differentiate the sun from other objects. Lest we render it completely indeterminate what, by claiming that Tycho *saw* the sun *as* the sun, we are attributing to him, we cannot assume that all his

concepts – e.g. sister, pain, or rose garden – it is absurd to hold that such concepts cannot be intelligibly operative in seeing unless a corresponding *theory* were held. If taken to entail that we need to hold e.g. some theory of pain to intelligibly attribute pain to others or express that we are in pain, such a view would imply a dubious conception of psychological and other ordinary concepts (for discussion, see Hacker & Bennett 2010, ch. 13). We best read Hanson as claiming that generally, epistemically significant *seeing* must be concept-laden, only scientific observation must be theory-laden. For ease of exposition, I will mostly stick with the term 'theory-ladenness,' while noting here that whether a given concept functions as observational or as theoretical and whether what is required for its mastery includes that one hold something properly called a *theory*, may vary from concept to concept, and with contexts of use.

²³ Such attributions may be reasonable even if I mistakenly believe that you are so related, even if your *or* my concept *apple* is confused: nothing falls under it. If so, reasonable attributions of *seeings* of *F* do not require knowledge of *F*. But if having a belief context at all required that the subject have *some* knowledge, then so would attributing *seeings* of *F* – if not knowledge of *F*-ish things (for there may be none), then knowledge implemented in one's ability to *see* whatever one takes to be *F as* being distinct from other things.

Consider a subject, *S*, who can subsequently overcome and revise the many beliefs she holds. The procedure *S* engages in as she does may involve assuming these beliefs, reasoning from them, and adjusting them in light of other beliefs and her experience. In an important respect, *S* is more rational than *R*, most of whose beliefs are true, yet who cannot engage in a similar procedure to weed out false ones. If we take this dimension of rationality – and the procedure that *S* can engage in, but not *R* – to be part of what 'reasonable' picks out, one can be reasonable even if some of the beliefs one reasons from are false, and reasonable in reasoning from them.

²⁴ Taking attributions of *seeing that* as governed by what we *take* true is more appropriate than endorsing a strong factivity requirement that is met only if what complements the *seeing that* locution are sentences expressing facts that actually obtain. That we may not know all the facts, either, does not make such attributions inappropriate.

beliefs about the sun were false.²⁵ For our attribution to make sense, at least *some* of them must have been knowledgeable by our lights, too.²⁶

Without knowledgeable complements of the *seeing that* locution, *seeing as* remains unintelligible. This idea is compelling independently of the perceptual situation we consider. Often, for instance, *S*'s *seeing something as red* is a case of *seeing* (and knowing) *that* it is red, *that* it is colored, and, depending on *S*'s knowledge, other things, e.g. *that* what bears its complementary color will be green. But Peter Achinstein objected against Hanson that when *A* playfully *sees* a cloud *as* a horse, *A* cannot *see that*, if suitably circumstanced, it would act in ways we know horses do (see Achinstein 1972). Since *seeing that* is factive, Achinstein is correct. It would, however, be mistaken to infer that playful *seeing as* does not involve *seeing that* at all. For surely, to intelligibly engage in playfully *seeing* a cloud *as* a horse, *A* must *see it as a cloud* and thus *see that* it does, will, or would behave like *A* knows clouds do, when suitably circumstanced.²⁷ Likewise, to *see a cloud as a horse*, *A* must *see that* if it were a horse, it would be what *A* knows horses are, and behave like *A* knows horses do, when suitably circumstanced.²⁸ Finally,

²⁵ Likewise, we deny that phlogiston theorists saw phlogiston, and, as they looked at phenomena involving combustion, that they *saw that* phlogiston was involved. Still, we affirm that they *saw* such processes *as* involving phlogiston. Moreover, like Tycho, phlogiston theorists were not *completely* off. We still find their characterizations of the phenomena significant, can reconstruct what it is that they probably saw, and pinpoint the respects in which, as they described and theorized about it, they went astray. If we accept that the meaning of one's concepts is at least in part articulated by the way these concepts figure in one's total belief context, we cannot separate what the beliefs phlogiston theorists held *were* from the ways these beliefs were *articulated*, i.e. how these beliefs, and the concepts figuring in them, were inferentially entangled with other beliefs, some of which we have since come to reject. Fully grasping what their beliefs were would be a massive interpretive task, one that involves reconstructing the entire context in which these beliefs lived and breathed. However, we need not perform such gargantuan tasks to acknowledge the wide-ranging similarities between their and our ways of characterizing relevant phenomena. Moreover, there are broad similarities between the inferential moves licensed within their and our theories of combustion, respectively. As we assess their views, the unit of comparison, I submit, is not belief, but rather significant differences in the structures constituted by the inferential moves that constitute their and our belief contexts, respectively.

²⁶ For many concepts, different sub-communities differ in what standards they impose on concept mastery. They will differ in what else one needs to know, or be able to do, in order for a belief one holds to count as knowledgeable. Hanson observes that some of the knowledge *seeing as* requires is "of a rather more logical nature [...]. [W]e should not say of anything that it was a physical object [...], were it not locatable in space or itself a tangible, space-occupying entity; nor should we say of any physical object that it is a cube unless it is six-faced, twelve-edged, and eight-cornered. On the other hand, that liquids and gases (*per se*) are not suitable for the formation of boxes and cubes and rigid frames is something we must learn from experience in a way rather different from the ways in which we gain our knowledge about what *objects* and *cubes* are." *PD*, p. 113. If he is right, then some beliefs regarding physical objects are not only more modally robust than others, but express facts concerning what something *must* be to be a physical object at all. Though I cannot pursue this here, it may be that for many concepts, there are beliefs one *must* have, or that one *must* at least be implicitly committed to, to have the concept at all. Moreover, it may be that certain kinds of such implicit commitments *must* be in place for one to count as having *any* concept at all.

²⁷ From an attributor *B*'s perspective, it may involve *seeing that* *p*, *q*, ..., where these express beliefs *both* *A* and *B* endorse.

²⁸ Here, what complements '*seeing that*' is a *subjunctive conditional*. As e.g. Sellars 1948 and, following him, e.g. Brandom 2015, have argued, such conditionals express modally robust commitments. Construed as complements of '*seeing that*,

suppose A has an illusory experience as of a horse, or hallucinates one. Arguably, both illusions and hallucinations involve ways their subjects are struck visually, though in hallucinations, no physical object may do the striking.²⁹ Still, A , if unaware of her state, will *see*, or at least *seem to see*, something *as* something. But note that the concepts operative in seeing – and the seeing, too – can be significant even if A does not in fact visually relate to what she *sees* things *as*, or to any object.³⁰ *Seeing* something *as F* requires a belief context that involves at least some knowledge. But so does the *seeing as* and the *seeming* involved in illusions and hallucinations.³¹ In illusory or hallucinatory experiences, too, we cannot assume that none of A 's beliefs about F s is knowledgeable and still ascribe to A that she *sees* something *as F*. The former assumption renders the latter ascription indeterminate. This generalizes. Also, if all my own beliefs about F s were false, I could not be *seeing* anything *as F*, either. For on the former assumption, '*seeing* something *as F*' does not single out anything determinate I could be doing. Accordingly, *seeing as* involves *seeing that* and is unintelligible without it.

This concludes our analysis of Hanson's second claim. As we saw, *seeing as* inherits its significance from how the concepts figuring in it are integrated in the subject's belief context, which serves to articulate an essential part of their meaning. Belief contexts can differ in what theories they explicitly or implicitly contain. Subjects who inhabit different belief contexts and look at identical objects in identical settings can therefore still see different things, namely objects of the kind that populate their differing theories. If in scientific observation, we see objects in the context of the theories we endorse, scientific observation must be theory-laden (and ordinary seeing at least concept-laden). Moreover, if

they tie the concepts operative in *seeing* to modally robust commitments explicitly or implicitly contained in our belief context – including e.g. laws and lawlike generalizations concerning the things we take to fall under them.

²⁹ Though many (me included) take it to be obvious, the assumption that visual hallucinations involve a visual aspect is not universally shared. Fish 2009, who takes hallucination to lack phenomenal character, denies it.

³⁰ Accordingly, concepts nothing falls under can be significant.

³¹ As for known illusions, consider the Müller-Lyer. Upon first exposure, we typically *see it as* featuring two unequal lines. Doing so will involve *seeing that*, if things were the way we *see* them *as*, we would be able to measure a difference in their length. But *seeing* what we *know* to be an instance of the Müller-Lyer illusion *as* featuring two apparently unequal lines is compatible with both *seeing that* if we were to measure the lines, we would discover that they are equal in length and *seeing that* we would detect a difference in length if the lines *were* the way we *see* them *as*. We may not be able to *see* the lines of the Müller-Lyer *as* anything but unequal in length, while we typically do not find it difficult to stop *seeing* a cloud *as* a horse, or to *see it as* not horse-like, e.g. by focusing on dissimilarities. If so, there are certain limits to the extent to which how we are *set to see* things *as* can be modified (recall also the tiger case from fn. 7).

some of our beliefs are false, then in *seeing* something *as* something, we may take ourselves to be *seeing that* something is or would be the case even though it is not. However, one cannot intelligibly engage in *seeing as* while lacking knowledge altogether: if one's belief context contained only false beliefs, the concepts it contained would be indeterminate, as would be ascriptions of *seeing as*. Hence, *seeing as* must occur in contexts of beliefs that contain at least some knowledgeable beliefs. *Seeing as* without *seeing that* is unintelligible.³² Let us turn next to Hanson's third claim: through *seeing as*, beliefs can affect one's visual field.

§3 Through *seeing as*, beliefs can affect one's visual field

So far, in my analysis of Hanson's account, the visual aspect of seeing played no important role. I focused on the claim that to be (epistemically) significant, (visual) experience, or seeing, must be able to bear on our beliefs and thus, on Hanson's view, involve concepts. I then showed that for Hanson, such concepts are in turn intelligible in terms of the belief contexts in which they are integrated and that changes in such contexts translate into changes in what things subjects see. So far, theory-ladenness thus appears to be a predominantly semantic affair – an effect on the meanings of the concepts seeing involves. As we will shortly, though, Hanson thinks that theory-ladenness can take other forms as well: what we believe can affect the visual aspect of seeing itself. As he refers to this visual aspect, 'the visual field and its elements' is the characterization Hanson resorts to most frequently.

One could suspect that talk about the visual aspect reintroduces sense-data. Hanson does not offer a full account of the visual aspect, but he does reject sense-datum accounts. To remove this apparent tension, I will sketch, next, what Hanson finds objectionable in sense-datum accounts: *not* the idea

³² Again, such commitments may be partly or entirely implicit. Depending on the expressive power of their language, subjects may be unable to thematize commitments to the material or subjunctive conditionals that would serve to articulate the role their concepts play. *Material* conditionals, incidentally, encode commitments to inference rules that govern applications of 'is F' to 'is G', 'is not J', etc. *Subjunctive* conditionals, in contrast, encode commitments to rules that are modally robust across a range of contexts. Such commitments come in different modal flavors, they can be commitments to e.g. laws of nature, a priori principles, moral, aesthetic, epistemic, or semantic norms. I cannot here address the question commitment to which (kinds of) conditionals *must* implicitly govern our linguistic and perceptual practice to make it intelligible how *anything* could count as a concept suitable to figure in instances of *seeing* something *as F*. For an investigation into the expressive role of material and subjunctive conditionals see Brandom 2008, 2015.

that seeing involves mental images, but a certain conception of what role such images could play (3.1). Next, I explain his view that beliefs and theories may affect the *organization* of the visual field and how it *coheres* (3.2) and, finally, via *projection* effects, the field itself (3.3).

§3.1 *What's Wrong with Sense-Datum Accounts*

In many places, Hanson forcefully rejects sense-datum accounts [cf. esp. *PD*, ch. 5]. Note, though, the following passage:

- (6) If Tycho and Kepler are aware of anything visual, it must be of some pattern of colours. What else could it be? [...] This private pattern is the same for both observers. [...] what they really see is discoid to begin with. It is but a visual aspect of the sun. In any single observation[,] the sun is a brilliantly luminescent disc, a penny painted with radium.

So something about their visual experiences at dawn is the same for both: a brilliant yellow-white disc centred between green and blue colour patches. Sketches of what they both see could be identical—congruent. In this sense Tycho and Kepler see the same thing at dawn. The sun appears to them in the same way. The same view, or scene, is presented to them both. [*PoD*, pp. 7-8]

“[O]ur visual consciousness,” Hanson holds, “is dominated by pictures;” “[v]ision is essentially pictorial” [*PoD*, p. 25] – occasionally he even refers to such pictures as sense-data.³³ He also grants that sometimes, the phenomenal language featured in (6) is appropriate: in the oculist’s office or if, in the lab, one lacks detailed knowledge of what one sees. Plausibly, both Kepler and Tycho would agree on a characterization of the sun, or of their sketches thereof, in phenomenal terms. Such agreement would indicate that the belief contexts both inhabit are similar enough for them to use phenomenal terms in sufficiently similar ways. It would not, however, entail a two-stage account of seeing, on which both are first aware of a mental image, characterized in identical phenomenal terms, on which, second, they then put different interpretations. The two-stage account, if true, would have to be true of seeing reversible figures also, e.g. the duck-rabbit. But we typically do not *see* such figures *as* something for which a description in phenomenal terms would be accurate. Indeed, coming to see them in such a way, if possible, requires tremendous effort. Phenomenal seeing, Hanson claims, is atypical,

³³ About congenitally blind patients who post-surgically learn to see, Hanson asks: “Of course, these people can see in the sense-datum sense of “see,” but can they see anything?” *PD*, 151. Clearly, he wants to elicit agreement with the first, disagreement with the second half. Such patients have visual experiences, but it takes them a long time to *see* what they face *as* anything. Hooking up the visual aspect of seeing with our knowledge is a complex and arduous process.

not a kind of seeing on which all ordinary seeing must be modeled.³⁴ Moreover, the two-stage account is inaccurate not just of cases of seeing reversible figures:

- (7) Is the physicist doing more than just seeing? No; he does nothing over and above what the layman does when he sees an X-ray tube. [...] One does nothing beyond looking and seeing when one dodges bicycles, glances at a friend, or notices a cat in the garden. [*PoD*, p. 16]

Sense-datum theorists, Hanson suggests, focus on cases in which we do not *see* things *as* what they are. They try to find “something pure and unadulterated by inference or intellect” [*PD*, p. 114], something that could, presumably, serve to ground knowledge. In doing so, he argues, sense-datum theorists ignore the wide range of cases wherein we are in fact right in our observations:

- (8) They [sense-datum theorists] are so concerned to discover what it is that we are right about when we are right in saying we see a duck (when only an owl is before us) that they leave unexamined all that is involved when we are right in saying we see a duck when there is a duck to be seen—a surprisingly frequent occurrence. In dotting on our observational mistakes the phenomenalist portrays a world in which the senses are generally misleading and deceptive. But the world of science is not [...] everywhere like this. [...] This “pure visual something,” whether it be the crude retinal reaction or the more subtle sense-datum, is what no one without a theory would dream of calling *seeing*, save in those relatively rare contexts where *seeing as* and *seeing that* are not possible, as with the oculist’s eye-exercises or at the furthest frontiers of scientific research or in the visual responses of infants and idiots.³⁵ [*PD*, p. 114]

The thought that there *must* be something purely visual that different observers placed in identical settings share could rest on the hope that one could find, in that purely visual something, a certain ground for knowledge. But this hope, Hanson holds, rests on a confusion: reference to some unadulterated seeing cannot possibly help provide a full explanation of what it is that we get right even when we are mistaken. Surely, when mistakes occur, the relevant experiences, lest they disqualify as *seeings*, must have a visual aspect. For *seeings* to be mistaken or correct, however, they must bear epistemic significance, they must be *seeings as* (or corresponding *seemings*). Moreover, if Hanson is correct, one’s belief context, even if flawed, must contain *some* knowledge. If so, whatever images significant seeing

³⁴ See also *PoD*, 20, and *PD*, 150: “It [phenomenal observation] is something we must develop from our ordinary sorts of seeing, and not that from which our ordinary sort of seeing is developed.” Like Bacon, who advocated freeing the mind from the *Idols of the Tribe*, Hanson holds that *phenomenal seeing*, while atypical, can be useful for getting rid of preconceptions or for arriving, ultimately, at new ways of seeing. Cf. also *PD*, 109, 111-2. For Bacon on idols of the mind, cf. Klein 2015, esp. section 3.1.

³⁵ Hanson’s focus is on *seeing* objects *as* things of some kind or other. However, complements of “*seeing as*” need not be limited to names of things. We can *see* something *as* e.g. red, blobby, flashlike, x-shaped, as instantiating or involving certain processes, as beautiful, or wrong. *Pace* Hanson, some of the cases he lists may thus involve *seeing as*, too.

may involve, they cannot *ground* knowledge. The claim that epistemic significance requires beliefs, including knowledgeable ones, thus undercuts certain foundationalist motivations for insisting that in relevantly similar settings, the visual aspect of subjects' seeings must be intersubjectively stable. For the idea that such stable aspects could ground knowledge founders on the fact that epistemically capitalizing on them requires that concepts and beliefs, including knowledgeable ones, are already in place.

Again, Hanson rejects neither that seeing has a visual aspect, nor that we may talk about it in terms of images. But whether such images are intersubjectively stable or not, they cannot ground knowledge. Let us consider, next, Hanson's claim that beliefs affect the *organization* of the visual field.

§3.2 The organization of the visual field

To approach the issue of organization, consider the following passage. In it, Hanson draws on the duck-rabbit figure and on an example from Pierre Duhem, which serves to contrast what an untrained visitor to a physicist's lab sees with what the physicist sees (cf. Duhem 1954, 218):

- (9) The elements in his [the visitor's] visual field, though perhaps similar or identical to the elements of the physicist's visual field in color, shape, arrangement, etc., are not *organized conceptually* for him as they are for the physicist. And this is much the same situation as we find when both you and I gaze at *Figure 3* [depicting the duck-rabbit] but I see a rabbit and you see a duck. The conceptual organization of one's visual field is the all-important factor here. It is not something visually apprehended in the way that lines and shapes and colors are visually apprehended. It is rather the *way* in which lines, shapes, and colors are visually apprehended. [PD, p. 104, emphases added]

Though we lack a precise account of it, let us accept Hanson's talk of visual fields and its elements. What is it for these elements to be *organized* differently? Organization, passage (9) indicates, is *conceptual*. Relatedly, Hanson points out that the plot of a story is not another detail of it, nor is the tune just another note. Likewise, the organization is not an element of the field, nor something that can be seen [cf. *PoD*, p. 13; *PD*, p. 95].³⁶

We can explicate Hanson's talk of *ways of apprehending* and *conceptual organization* by drawing on our previous discussion: *seeing* something *as* the sun from Tycho's perspective is to *apprehend* it one way,

³⁶ Perhaps the elements in one's visual field cannot be seen. Searle 2015 argues that only real world objects can be proper objects of one's experience, ontologically subjective entities, however, cannot. This view, too, is compatible with the idea that both seeing real world objects and hallucinating involve *having* (though not *seeing*) conscious experiences in which one's visual field's is populated with elements.

seeing it from Kepler's another. Likewise, *seeing* the duck-rabbit figure *as* depicting a duck or as depicting a rabbit are two different ways of apprehending it. Generally, to say that the same objects can be apprehended in different ways just is to claim that they can be *seen as* different things (or features). Ways of apprehending objects typically involve expectations as to how, were we to perform in certain ways with respect to them, they would in turn perform [cf. *PD*, p. 150]. The context set up, *inter alia*, by such expectations organizes the elements of the visual field conceptually – by situating them in a space of expectations concerning how the visual field is likely to change.

Differences in conceptual organization may yield further effects, e.g. *selection* effects. We rarely attend to the space between the leaves of a tree [*PoD*, p. 17], or to our own noses and cheeks [*PD*, p. 152], even though surely, in almost all seeing, the latter co-constitute our visual field. Moreover, whenever leaves leave their marks on a subject's visual consciousness by figuring, *in* our experience,³⁷ as elements in the visual field, so does the space between them. Selection effects concern what we look at, what is foregrounded or, conversely, taken to be part of the background [cf. *PD*, p. 92], which aspects are “thrown into relief” [*PD*, p. 104] as salient or ignored. “[T]he identity badge of every modern scientist,” Hanson quips, “consists of those things he ignores among his visual data” [*PD*, p. 152].³⁸

A different kind of effect concerns how the elements of one's visual field “pull together” [*PD*, p. 94] or “cohere” [*PoD*, p. 13; *PD*, p. 103]. Imagine yourself as you see an unidentified object; some of its parts are visible, others covered in mist. Once you recognize it, things snap into place, its visible parts pull together, forming a coherent and unified whole, whereas previously, they may have seemed almost like randomly juxtaposed. Seeing reversible figures, too, coheres in different ways, depending on how one apprehends them. This effect is difficult to place. Maybe, as Hanson at times suggests, as we

³⁷ See *PoD*, p. 15: “Elements *in our experience* do not cluster at random” (emphasis added).

³⁸ What counts as significant may change along with one's theories and the development of new technologies. A well-known example concerns the Golgi apparatus. Although discovered by Camillo Golgi as early as 1898, for more than 50 years many scientists suspected that what we now affirm is a *bona fide* cell organelle was an artefact of certain staining techniques. Only after the introduction of the electron microscope the controversy subsided. See Farquhar & Palade 1981 for details and further references.

transition between ways of seeing reversible perspective figures, “[n]othing optical or sensational is modified” [*PoD*, p. 12]. Though you and I see them differently, our sense-datum pictures “must be the same” [*PoD*, p. 11]. But it is also tempting to say that once we recognize what we face, our seeing is so thoroughly transformed that the visual field *itself* must have changed. As Hanson suggests, one might argue with Wittgenstein that the duck-rabbit figure, if *seen as* (depicting) a duck, has not the slightest similarity to the same figure if *seen as* (depicting) a rabbit [cf. *PD*, p. 98; *PoD*, p. 13].

As we transition from merely *seeing* something to *seeing it as* something determinate, or from *seeing it as* one determinate kind of thing to *seeing it as* another, characterizing what changes is hard. Don’t the elements of one’s visual field alter? Sense datum theorists may be mistaken in what epistemic role they assign to the visual aspect. Yet for all we have said, it remains possible that Hanson’s claim that beliefs affect how the observer’s visual field is organized is compatible with the idea that the visual aspect remains stable across observers whose belief contexts differ. But as we will see next, Hanson also allows that elements of the visual field themselves can be, and sometimes are, modified as well.

§3.3 *Effects on the elements of the visual field*

That objects can be *seen* differently, Hanson claims, philosophers must accommodate. *Why* such differences obtain, and *how* they arise, psychologists must address [cf. *PoD*, p. 17].³⁹ However, such claims do not settle whether the elements of the visual field can themselves vary with the subject’s beliefs. Hanson’s remarks on this issue waver between both options, and are often fairly guarded.⁴⁰ If asked if the elements of different observers’ visual fields differ, Hanson claims that “we can do no better here than to review some of the findings of experimental psychologists [...] [who] rush in where philosophers fear to tread” [*PD*, p. 158]. After surveying such findings, he concludes the following:

(10) Many experiments have shown how, e.g., the shape, size, color, and position of objects are, as it were, “projected” onto them by the observer. The perception of color and shape depends not

³⁹ Since on Hanson’s account, such differences will partly rest on differences in subjects’ belief contexts, psychologists may furnish explanations why people hold certain beliefs and explore whether, and how, holding certain beliefs, having undergone certain kinds of experiences, or kinds of training, may dispose subjects to single out certain objects or features as significant – in short: what subjects *set* to see things in certain ways.

⁴⁰ Recall e.g. passage (9): it is only *perhaps* that the elements in the visitor’s field are similar or identical to those populating the physicist’s. But cf. *PoD*, p. 17, where Hanson seems to grant that the elements of their visual fields are identical.

alone on the thing looked at but partly on past experience of the color and shape of similar and dissimilar things. [PD, p. 152]

Despite the scare quotes and the cautionary ‘as it were’, the term ‘projected’ is highly suggestive. On a natural interpretation of (10), it is not just the *actual* color, size, etc. of what one faces that constitute the visual field. Rather, if projection effects occur, what color, size, etc. one *sees* things *as* having is modified by subjective factors. And although Hanson does not explicitly mention beliefs as what may cause such effects, it is natural to assume that one way for past experiences to influence current experience is via (possibly implicit) beliefs and expectations that the former helped shape.

Some of the experiments Hanson cites in support of his assessment [cf. PD, ch. 9] have since come to be eyed with suspicion. In contemporary discussion, too, what kinds of effects on the visual aspect of seeing occur remains a contested question. However, it is certainly conceivable that, as Hansen et al. suggest, one’s knowledge, beliefs, or memory of the typical color of bananas could bring it about that a depiction of a banana, though colored in a monochromatic gray, still strikes one as slightly yellow.⁴¹ And when biased subjects primed with pictures of black men tend to classify ordinary tools as guns,⁴² such effects could be partly visual. How things visually strike one and what properties subjects *see* items *as* having could be affected by what kind of thing one *sees* them *as* and by what context one’s being primed makes salient, given what expectations it contains about what may happen next.

The philosopher’s currency is logical possibility. Nothing conceptually rules out that projection effects occur. Moreover, many psychological experiments can be and are interpreted as involving such effects. Hence, accounts of visual experience had better not rule them out as impossible, but show how to accommodate them. It is a distinctive virtue of Hanson’s view that it does. Let us examine next whether he also accommodates the idea that observation can anchor and constrain our beliefs.

⁴¹ See Hansen et al. 2006, Olkkonen et al. 2008.

⁴² Cf. Payne 2001. There is a large body of psychological literature and a raging philosophical debate concerning the question whether such cases, often subsumed under the label *cognitive penetration*, do in fact occur. For discussion, see e.g. Siegel 2012, 2015, 2017; Stokes 2013; for a critical voice, see Scholl & Firestone 2016.

§4 Does observation constrain our beliefs?

Since it allows that our visual fields may be shaped by factors that depend on the subject, it can seem as if in Hanson's account, the idea that seeing has objective import, anchors, and constrains our thinking, has little room. Observation, it seems, could be a less than objective guide to how things are. Rather than assisting us in overcoming our prejudices, it may seem to confirm them if the beliefs we want to test are those that affect our visual field. Hanson, aware of such concerns, concedes that the visual facility with which we see, notice, and observe familiar things has its price:

(11) For it [the visual facility] does incline us sometimes to overlook certain discrepancies between what is there to be seen and what we ourselves see. By its use, as by the use of any efficient adaptation to our environment, we can occasionally go wrong. [PD, p. 153]

But conceding this is not to give up the idea that observation can exert empirical constraint. In this context, Hanson's remarks on illusions and conjuring tricks are instructive:

(12) We see only what we know, that is what makes conjuring tricks possible. Deceptions must proceed by an exploitation of what is the normal, ordinary case. [...] [T]hat a sleight-of-hand artist can get our minds and our eyes, i.e. our *seeing*, moving in one direction while catching us out in another direction is a clear indication of the way our SEEING usually proceeds. It is because our thoughts are so intimately a part of seeing that we must sometimes rub our eyes at illusions. [PD, p. 115]

To be deceived or subject to illusions, passage (12) reminds us, our belief context must contain expectations governing how, in the situation at hand, our visual field may change. Our expectations may be off. But when they are frustrated, we may of course realize it:

(13) [W]hen we have seen the conjurer saw the young lady in half, we are no longer at liberty to see this as an ordinary case of [...] *dis-joinery*. We cannot see the conjurer's saw as an ordinary saw, nor his actions as those of an ordinary woodsman, nor the situation as an ordinary case of sawing, if when he is finished with his work the young lady smiles and waves gaily while happily kicking her feet. And when we say we cannot believe our eyes in such a case, we indicate that seeing things as we saw them originally was just to *see that* certain things could not follow. [PD, p. 116]⁴³

Seeing is corrigible, "which everyone would happily concede." If the behavior of what we *see as x* diverges from "what we expect of *x*'s[,] we may be blocked from seeing it as a straightforward *x* any longer" [PoD, p. 22; similarly: PD, p. 116]. The possibility of such divergence, I submit, is the possibility

⁴³ In such a case, correcting one's view is triggered by the realization that one did not in fact see what one thought one did, but that one was mistakenly *taking* oneself to *see that* certain things could or could not follow.

of friction between our belief contexts and the world; it is what enables our seeing to constrain our world-directed thinking. Such friction, note, is possible even if projection occurs often. Only if one assumes, *pace* Hanson, that generally, the belief contexts we inhabit fully determine our visual field and force it to conform with our expectations, the idea of empirical constraint is lost.⁴⁴

For empirical constraint to be possible, the visual aspect must be able to in part change independently of our beliefs. At the same time, the visual aspect cannot exert such constraint by itself. Not only must what we see diverge from what we expect, we must also acknowledge such divergence; we must *see* objects *as* exhibiting features or behavior we did not expect. To be able to exert constraint, seeing must be epistemically significant. It must, Hanson must insist, involve *seeing as*.

Relatedly, the visual aspect alone cannot settle whether or how to adjust our beliefs. Again, if what we *see as* x behaves in unexpected ways, we may be blocked from *seeing it as* x any longer. In response, we may decide to drop the concept x altogether. Or we may decide to revise it to accommodate that x 's sometimes do behave in ways we had not previously envisaged. At times, we may not know how to respond. If so, we may suspend judgment, keep observing, and search for new intelligible ways of organizing what we see. Which of these is called for neither depends just on what we see, nor on the visual aspect alone. Crucially, it depends on the belief context we inhabit, e.g. on how modally robust we take our frustrated expectations to be. We could e.g. barely keep *seeing* something *as* a piece of gold if we saw it melt at 100° F. But depending on our belief context, we may reasonably keep *seeing* a celestial body *as* a comet even as it takes unexpected turns, or our friend *as* good-natured and kind, even as we see her commit what otherwise looks like a heinous crime.

For Hanson, then, the relation between beliefs and the world is anything but simple. *Seeing* what we face *as* what it is – this is a remarkable ability. For many items (but not for all), especially items

⁴⁴ For a similar assessment, see Schurz 2015, p. 140. The idea that our visual field is fully determined by our explicit and implicit beliefs, while highly counterintuitive, may not be *logically* defective. However, motivating and defending an account of experience that incorporates it, while retaining the idea that experience plays a vital role in our epistemic endeavors, or that alternatively shows why the latter idea is mistaken, is a daunting task and anyway requires substantial argument. Pending it, there is no special onus on Hanson to show that such an account is impossible. It is, incidentally, compatible with his view that *some* aspects of our visual life *are* systematically determined by what we believe. But to entertain this possibility is neither to say that we could not find out whether it is actual, nor to deny that visual experience could play an important role in doing so.

populating our scientific theories, mastering this ability may require that we overcome dispositions to apprehend shaped by deeply entrenched false beliefs and expectations. These may make us ignore overlook important details, make things seem to cohere in odd ways, or cause us to project onto what we face features it does not possess. Coming to see not what we expect, but what is there to be seen is a difficult, perhaps an ongoing task. Sometimes it may be helped by bracketing our expectations, by paying close attention to details, and by characterizing what we see in phenomenal terms to find new ways of *organizing* the phenomena, of making what we see intelligible. But improving our beliefs may require time and effort. As Hanson reminds us, “thirteen centuries of expert observation failed to disclose the error in Galen’s contention that the septum between the ventricles of the heart is perforated” [PD, p. 168].⁴⁵

[*] Let us take stock: §1 introduced Hanson’s claim that epistemically significant *seeing* must involve concepts. On Hanson’s account, *seeing* involves two elements blended together like an amalgam: a visual aspect, characterized in terms of the visual field and its elements, and a way of apprehending things, characterized in terms of *seeing as*.

In §2, I argued that on Hanson’s view, instances of *seeing as* inherit their significance from the way the concepts figuring in them are integrated in the context of what else the seeing subject believes. So construed, belief contexts articulate an essential part of what, to subjects, the concepts operative in their *seeing* mean. Such contexts, I pointed out, may contain false beliefs. Suppose you *see* something *as F*. If so, your false beliefs about *F*s may bring it about that you take yourself to be *seeing that* certain other things do or would obtain, even though they do not. As Tycho *saw* the sun at dawn *as* the sun, he took himself to *see that* the earth’s brilliant satellite was beginning its diurnal circuit around us. He was, of course, mistaken. Still, his mistaken beliefs were central to the geocentric worldview he endorsed. Accordingly, we cannot grasp what thing he saw as he looked at the sun at dawn unless we take that view into account. Hanson claims that observers who look at the same physical objects in

⁴⁵ Plausibly, overcoming flawed dispositions to *see* what one faces *as* things that do not exist is hard to do *solo*. But as the quote indicates, even as a *social* enterprise, correcting our views can be a laborious and time-consuming endeavor.

identical settings may see different things and that scientific observation must be theory-laden. If instances of *seeing* something *as F* inherit their significance from the belief context in which “*being F*” is integrated, these claims, I argued, are defensible. Finally, I argued that Hanson is right that every *seeing as* must involve *seeing that*, understood factively. For if everything *S* believed about *F*s were false, ‘*S sees* something *as F*’ could not pick out any determinate activity.

In §3, I did two things. First, I showed that though Hanson rejects sense-datum theories, he does not reject the idea that seeing involves a purely visual aspect or, as he puts it, a visual field with elements. Instead, I argued, he rejects the idea that such an aspect could serve to ground knowledge. On his view, proponents of this idea fail to acknowledge that to epistemically capitalize on the visual aspect of seeing, concepts and beliefs, including knowledgeable ones, must *already* be in place. Again, epistemically significant seeing involves *seeing as*, and *seeing as* must involve *seeing that*. Second, I showed that apart from selection effects, Hanson also accommodates effects beliefs may have on the *organization* of the visual field, on how its elements *cohere*, and, finally, *projection* effects. At least some of these, I argued, pertain not to what concepts seeing may involve, but to the visual aspect of seeing itself.

In §4, I showed how on Hanson’s view, observation can constrain our thinking. In this context, the visual aspect of seeing turned out to play a vital role, albeit one it cannot play *solo*, but only in tandem with our beliefs. Arguably, that aspect is typically (though not necessarily) brought about at least partly by the worldly items we face. To the extent that this is so, the development of the visual aspect depends not fully on what we believe, but in part on what is objectively the case. This partial independence of the visual aspect of our beliefs, I argued, creates the possibility of friction with our beliefs and expectations and anchors our seeing to the world. Note, however, that which worldly items do the anchoring, and how they do it, may remain opaque to us. In epistemically significant seeing, our relation to the world is mediated twice, once through the visual aspect of seeing, once through the ways we are set to apprehend things. The former must sometimes be at least in part independent of what we believe, the latter, however, is not. As I pointed out, it follows that for many items, *seeing* them *as* what they are is a remarkable ability. To achieve it, the belief context we inhabit must be

sufficiently justified. If it is not, we may apprehend such items incorrectly and subsequently issue perceptual judgments that are incorrect or unjustified and reflect our error of mistaking what we face for what we erroneously *see it as*.

In sum, on Hanson’s view, *seeing* is crucially shaped by the belief context we inhabit – indeed, it is unintelligible without it. In *seeing*, our beliefs can lead us astray. Still, *seeing* is corrigible. Hanson thus accommodates both ideas mentioned at the outset: observation, though deeply laden with theory, can nevertheless constrain and anchor our beliefs.⁴⁶

In the final section, I will contrast Hanson’s account with the two dominant contemporary approaches to perceptual experience: relationalism and representationalism. I argue that in their current form, neither manages to combine theory-ladenness and empirical constraint while keeping the rational role of experience unimpaired. Hanson’s account is a version of representationalism, too. But as I argue, we can find in his remarks on empirical constraint a conception of the rational role of experience that differs from the one representationalists standardly defend and that allows him to succeed where they fail.

5. Relationalism, Representationalism, and the Rational Role of Experience

Two kinds of views dominate the current discussion on perceptual experience: relationalism and representationalism. Representationalists affirm, while relationalists deny, that perceptual experience itself involves any kind of representation.⁴⁷ Instead, relationalists construe perceptual experience as a relation of direct awareness – commonly labeled *acquaintance* – that obtains between subjects and mind-independent items, from a point of view.⁴⁸ By bringing such items “into the subjective life of the

⁴⁶ Acknowledging that our seeing can be impaired should humble us. Others might see better where our vision is murky. Attending to them may provide an antidote to our prejudiced dispositions. For the idea that facing alternative viewpoints can be *productive*, and that they can serve as *antidotes* see also Feyerabend 2010. For views that emphasize humility and paying close attention to alternative viewpoints in the domain of moral perception see Murdoch 1970, Budhaghosa 1991 for a Buddhist source, also Garfield 2015, ch. 8, and Heim 2015.

⁴⁷ Many take the two views to be incompatible. But see e.g. Nanay 2014, Schellenberg 2014 and McDowell 2013.

⁴⁸ The term ‘acquaintance’ goes back at least to Bertrand Russell. Whereas Russell maintained that experience acquaints us with sense-data, relationalists think that it acquaints us with mind-independent items. Typically, these include objects and property instances, though not for Brewer 2011, whose so-called object view is a version of property nominalism.

perceiver,⁴⁹ acquaintance is said to enable us to demonstratively refer to them and, some hold, to provide an allegedly basic kind of non-propositional knowledge: *knowledge by acquaintance*.⁵⁰ Finally, relationalists hold that mind-independent items *constitute* the visual aspect of experience, variously referred to as perceptual experience's *qualitative* or *phenomenal character*, the *appearances* it involves, or the *what it's like* to undergo it. As per an oft-quoted passage by John Campbell:

- (14) On a Relational View, the phenomenal character of your experience, as you look around the room, is constituted by the actual layout of the room itself: which particular objects are there, their intrinsic properties, such as colour and shape, and how they are arranged in relation to one another and to you. [Campbell 2002, 116; similarly Fish 2009, ch. 1; French 2014, pp. 395-6; Logue 2012, p. 212; Martin 1998, pp. 173-5]

Briefly put, relationalists credit perceptual experience with the following task: it makes us aware of environing items and enables us to refer to and acquire knowledge about them. If mistakes occur, these are due to what we make of our experience – experience itself, however, is not to blame.⁵¹

Hanson's view is superior to relationalism in two respects. The first and most important respect concerns the fact just mentioned: relationalists take seeing's visual aspect to be constituted by environing mind-independent items, relative to the subject's point of view, specific conditions of perception, and, perhaps, features of the perception relation itself.⁵² Crucially, however, relationalist have no room for accommodating the thought that the visual aspect might be determined by what subjects *believe*.⁵³ In a way, this is not surprising. After all, accommodating such effects would undermine their view that in general, experiential relations are *independent* of and *prior* to representations.⁵⁴ Relatedly,

⁴⁹ For this way of expressing the phenomenon see esp. Campbell & Cassam 2014, ch. 1.

⁵⁰ See e.g. Genone 2014, 34; also Brewer 2011, ch. 5 & 6 for an attempt to spell this out.

⁵¹ See Brewer 2011. Genone 2014, too, suggests that the claim that perceptual experience cannot be erroneous is one main respect in which relationalism and representationalism differ.

⁵² See e.g. Campbell 2009; Campbell & Cassam 2014, ch. 2. See also Brewer 2011, ch. 5, who suggests that the acquaintance relation, e.g. in cases of blurry vision, can be degraded.

⁵³ Brewer 2011 distinguishes *thin* looks from *thick* looks. Thin looks are looks objects are said to have due to being relevantly similar, relative to a point of view and circumstances of perception, to paradigm examples of certain kinds. Thick looks, on the other hand, are thin looks that are being registered by the subject. The recognition such registration involves may, Brewer suggests, in turn have effects on the phenomenology (cf. Brewer 2011, esp. pp. 120-4). Such recognitional effects ultimately depend on the conceptual material available to the subject. But even if such effects are allowed, note that objects can only thickly look *F* if they also thinly look *F*. Since Brewer urges that how things thinly look is belief-independent, the way things can look remains substantially insulated from beliefs contexts. For a more detailed discussion of Brewer's proposal, see [*masked*].

⁵⁴ Fish 2009, ch. 3, suggests that possessing certain concepts may enable us to get acquainted with features of items that are otherwise unavailable, and that acquaintance determines the phenomenal character of experience. This suggestion,

doing so would contravene the idea that the role of experience is to provide *direct* awareness and knowledge of enviring items; it would make the relation between enviring items, the visual aspect of experience, and our subsequent beliefs about such items less straightforward than relationalists assume it is. In sum, relationalists cannot accommodate (many) of the coherence and projection effects⁵⁵ Hanson's explicitly accommodates (cf. §§3.2-3). This puts relationalists at a severe disadvantage. For if such effects are possible, even, as many psychologists and philosophers think, actual, then relationalism, if it cannot countenance them, must be deficient, or false.

To appreciate the second respect in which Hanson's account is superior to relationalism recall that he insists that for experience to be epistemically significant, it must be able to bear on our beliefs. To meet this requirement, he thinks, experience must involve concepts. Roughly put, on his account, as a subject *sees* an enviring item *as F* or *G*, this provides her with the opportunity to endorse perceptual judgments regarding what it is *that she sees* – perceptual judgments which in turn depend on the belief context she inhabits, which in turn constitutes an essential part of what, to her, *being F* or *being G* means. Hanson's account of the epistemic significance of experience thus crucially depends on the idea that experience itself has a conceptual dimension. Accordingly, then, Hanson would press relationalists to explain how experience, construed as a relation that does not involve concepts, can be epistemically significant. More specifically, he would ask how acquaintance can yield knowledge, what kind of knowledge, and in what sense it is taken to be more basic than or perhaps even ground propositional knowledge. In short, he would demand a relationalist account of the rational role of *seeing* that explains the epistemic significance of acquaintance. Hanson, as we have seen, provides his own account. He has neither need for the term '*acquaintance*' nor, accordingly, the need to explain it. For him, thus, neither of the challenges relationalist face arise.

if viable, would allow relationalists to accommodate phenomena of expert vision. But as I argue elsewhere, it is not available to Fish. It clashes with his commitment to the idea that acquaintance is irreducibly primitive [cf. *masked*]).

⁵⁵ Quassim Cassam, under the heading of what he dubs *problems of infusion*, has also challenged relationalists to allow that the phenomenal character alters once what is seen is recognized. Unfortunately, in his response to Cassam, Campbell does not address the issue (cf. Campbell & Cassam 2014, pp. 141-2). Brewer may be able to accommodate some such effects. However, he can accommodate only effects that concern ways for the visual field to cohere that reflect similarity relations with paradigm exemplars that objects are said to have independently of what subjects believe (see also fn. 53).

Consider, next, representationalism. Representationalists vary in how they understand ‘representation,’ its relation to beliefs, the world, and the visual aspect of experience. Still, one core idea unites them: experience has representational content, which generates conditions of satisfaction (or accuracy). If compared with the actual state of the world, these determine whether experience is veridical.

Hanson’s view, too, is a version of representationalism. If pictures represent, and if *seeing*, as Hanson claims, involves a pictorial dimension, then seeing involves representation [cf. e.g. *PoD*, p. 28]. So construed, ‘representation’ is a merely causal notion. But again, for him, epistemically significant seeing involves concepts and requires the presence of a suitable belief context. Epistemically significant *seeing* is *seeing as*, and *seeing something as F* involves *seeing that* certain facts do, must, could, or would obtain if what one faces is what one *sees it as*. But since objects may differ from what we think they are, *seeing as* and *seeing that* allow for misrepresentation. Through their involvement, the representational content of *seeing* represents not just in a causal sense, but in a sense that is normatively assessable.

At least three features distinguish Hanson’s brand of representationalism from many other extant varieties. *First*, whereas others may limit the content visual experience can have to what would be expressed by terms pertaining to phenomenal properties such as color, shape, (relative) location, or motion, say, Hanson clearly does not.⁵⁶ Quite to the contrary: due to the tight relations he establishes, via *seeing that*, between *seeing as* and subjects’ belief contexts (see §2), the content *seeing as* can have, on his view, is generally rich and may involve e.g. theoretical concepts and complex subjunctive claims.

Second, many representationalists take the content of visual experience to be firmly tied to its phenomenal character. Some e.g. think that the phenomenal character of an experience is determined by, or supervenes on, its representational content; others take the latter to supervene on the former, still others simply identify the two. For Hanson, *seeings* identical in their visual aspect can vary greatly in their contents. Conversely, *seeings* that strongly differ visually can possess the same content. According

⁵⁶ This comes out most clearly in his rejection of two-stage accounts discussed above (see §3.1).

to him, both how contents and visual aspects are linked and how subjects are to respond if the development of this aspect diverges from their expectations depends on a third factor: the belief contexts subjects inhabit (see §4).

Third, representationalists typically hold that visual experiences can justify beliefs. If their content is accurate, *seemings* justify beliefs with corresponding contents.⁵⁷ But again, for Hanson, the links between visual aspect and content vary with the subject's belief context. Accordingly, so does which beliefs a subject may take her seeing to justify. This last point brings out a problem. It threatens not just Hanson's view, but *any* view that allows that beliefs may affect what content a subject's *seeing* has, its visual aspect, or both.⁵⁸ For suppose such effects are actual and experience's rational role is to justify beliefs.⁵⁹ Whether a given experience justifies a subject's perceptual belief then depends not just on its visual aspect, not just on its content, but also, and crucially, on whether the subject's belief context is itself justified. Only if it is, the context will not alter her experience in ways that impair its justificatory role. Only then will subjects, in Hanson's terms, reliably *see* items *as* what they in fact are.⁶⁰ But if typically, facts concerning the justificatory status of one's belief context are opaque to one, so are facts concerning whether, in relying on experience, one allots it the appropriate justificatory weight.

Thus put, the issue is even more general. Suppose one mistakenly believes certain defeaters to be present. If so, one may take the content of one's experience to be defeated, allot it an inappropriate justificatory weight, and thus fail to allot experience its appropriate justificatory weight. This possibility, note, is independent of whether beliefs can alter one's experience. However, if, like Hanson, one accommodates that beliefs may have such altering effects, the issue becomes even more pressing.

Hanson's view, I suggested above, is superior to relationalism as it allows him to accommodate numerous ways beliefs may affect experience that relationalists cannot accommodate. It stands out *vis-à-vis* other representationalist views in allowing the representational content of experience to be rather

⁵⁷ For a discussion on degrees of veridicality, see Siegel 2010. In the present context, only the general idea matters.

⁵⁸ Relationalists deny that experience has content. But if they, too, associate kinds of experiences with contents that, if things go well, serve to justify beliefs, the problem I raise in what follows is one they face as well.

⁵⁹ In what follows, I frequently drop the modifier 'visual,' taking it as understood.

⁶⁰ The belief context of subjects who know of, and can calculate in, such effects, is, on balance, sufficiently accurate.

rich and highly flexible in how it relates to the visual aspect. But these features seem like a double-edged sword if they further aggravate the problem of experience's rational role. For suppose that the rational role of experience is justifying beliefs. If so, experience can properly execute this role only if the subject's belief context is itself sufficiently justified. Especially effects on experience that are due to false, irrational, and unjustified beliefs would then seem to undermine experience's rational role, quite possibly unbeknownst to the subject. In allowing such effects, Hanson thus raises the bar with respect to how justified a belief context must be to allow experience to execute its rational role. Again, for Hanson, a given *seeing's* content may be rather rich. All the pertinent beliefs in the subject's belief context co-constitute it, including false, irrational, and unjustified ones. Until the latter are weeded out, then, the content of *seeings* may be partly false, irrational, or ill-justified and misleadingly appear to justify corresponding beliefs.⁶¹

Given these issues, we must not interpret Hanson as construing experience's rational role as justifying beliefs. Experiential content cannot, at least not generally, serve as a touchstone for our beliefs, as something, as it were, that sorts them into ones that are justified and ones that are not. To emphasize, this is not to say that experience could never serve to justify beliefs; in ideal circumstances, it may, i.e. if the subject's belief context is suitably justified. But lest Hanson be saddled with the unhappy consequence that experience executes its rational role only in circumstances that for all we know may rarely obtain, he should not model this rational role on what happens in ideal circumstances.

On a better interpretation, experience executes its rational role always, without exception. Such an interpretation is indeed available. We can extract it from Hanson's account of empirical constraint discussed in §4. On it, recall, *seeing* can provide empirical constraint because its visual aspect, if co-constituted by mind-independent items, can develop in ways that are partly independent of our prior

⁶¹ Even if the content of experience is somehow restricted, false or irrational beliefs in a subject's belief context may still affect her experience. Moreover, even if experience *has* no content, as relationalists would assume, but is somehow associated with one, false, irrational, and unjustified beliefs may affect either the association itself, beliefs regarding such association, and generally whether a subject is justified in allotting whatever justificatory weight she assigns, in the context at hand, to the relevant content.

expectations and can thus defy them; the way we apprehend items, the behavior we *see* them *as* engaging in and the properties we *see* them *as* exhibiting can diverge from our prior expectations. If this happens, such divergence alone does not settle how we are to rationally respond. Rather, as we register such divergence, both how we frame it and how we are to respond to it – by modifying our beliefs and concepts, say, or by suspending judgment – depend on the details of our belief context.

The alternative conception of the rational role of *seeing* I advocate takes this latter idea very seriously. On this conception, one major function of experience is to make possible empirical constraint.⁶² Experience performs this function by actualizing a concrete way for its visual aspect to develop. Typically, though not necessarily, such development is brought about at least partly by mind-independent environing features. This secures that experience is typically anchored to the world, although the precise way such anchoring works may well be opaque to the subject. Crucially, any given *seeing* accrues what epistemic significance it has for a subject through involving some way of apprehending: *seeing as*. *Seeing as*, in turn, inherits its significance through the way the concepts it involves are integrated in the subject's belief context, which explicitly or implicitly contains sets of expectations regarding how the visual aspect may unfold. Relatedly, it contains links between possible forms the visual aspect of experience may assume and concepts, as well as sets of perceptual beliefs transitioning to which would be rational for the subject if suitable experiences were had. Now, how a subject apprehends things, in her experience, either complies with or defies her expectations. If the former, then she is *prima facie* rational in transitioning to perceptual judgments that conform with her beliefs. If the latter, she may rationally suspend judgment, or revise her beliefs or concepts – depending, again, on the details of her belief context.

In short, then, the rational role of *seeing* is to actualize a way for the subject's visual field to develop and thereby to make rational transitions to e.g. perceptual judgments. Which transitions are made

⁶² This need not be its only function. It may also provide candidates for reference or, in creatures that lack concepts, bring environing features into their subjective lives to make them available for further processing.

rational depends on what the subject *sees* things *as*, which in turn depends on the subject's belief context, and the expectations it explicitly or implicitly contains.⁶³

Observe that this proposal succeeds where the representationalist alternative fails. For on the proposal I advocate, experience properly performs its rational role regardless of the justificatory status of the subject's belief context. It performs it even if false, irrational, or unjustified beliefs (or other cognitive states) massively affect her experience.⁶⁴ Nevertheless, the presence of *some* belief context is indispensable for experience to execute its rational role, for such contexts determine not only what content a subject's experience has, but also which perceptual judgments it is rational for her to transition to, given her experience. The *overall rationality* of perceptual judgments, observe, depends on the specifics and the rationality of the subject's belief context. The latter, in turn, will be affected and, if need be, continually revised in light of the former. Accordingly, perceptual judgments, like the transitions to them, are rational only conditional on the subject's belief context. Again, that experience serves to justify perceptual judgments remains possible, in ideal circumstance. But crucially, visual experience executes its rational role regardless of whether such circumstances obtain.

There is no doubt much more to be explored, e.g. how to construe the structure of belief contexts, their rational interplay with experience and perceptual judgments, how the links between such contexts and the visual aspect are to be understood, and what other important functions experience may perform. Such explorations must await another occasion. Nevertheless, our reflections on Hanson's account have born rich fruit. For if I am correct, it offers a conception of visual experience that is superior to both relationalism and contemporary representationalism. It is superior to relationalism

⁶³ A similar conception has been suggested by Anil Gupta in Gupta 2006 under the label of the *hypothetical given*. In contrast to Hanson, however, Gupta eschews the idea that experience has content entirely.

⁶⁴ If the argument extracted from Hanson in §2 is correct, for something to intelligibly *be* a belief context that contains conceptual content that is minimally determinate, it must involve *some* knowledge. If had against the backdrop of something that is not sufficiently justified to qualify as a belief context with minimally determinate beliefs, experience may still be hooked up with a creature's dispositions to act. However, it cannot play a *rational* role. This way, the broadly Kantian insight is respected that without concepts, intuitions are blind. While I cannot fully argue the point here, the parenthetical reference to other cognitive states is meant to signal that the resulting conception is also well-poised to accommodate conceivable effects due to moods, hopes, desires, wishes, or attitudes – in short, effects on experience commonly subsumed under the label *cognitive penetration* (again, see fn. 42 for references).

since it accommodates even widespread effects of beliefs on experience. At the same time, Hanson's remarks on empirical constraint contain the material for a conception of experience's rational role which is more general than the conception representationalists embrace. On it, the rational role of experience remains unimpaired – it perfectly executes this role not just in ideal circumstances, but generally.

In closing, let me note that the view I advocate invites interventions in every area of research in which experience is credited with a rational role – in philosophy and beyond. Examples of highly pertinent topics readily come to mind: scientific observation and theory change, moral perception, aesthetic perception, implicit bias, cognitive penetration, the structure of epistemic justification, and risk perception, to name but a few. Obviously, such investigations must be postponed. However, these few examples suffice to indicate that the prospects for future research on the implications that grow out of the view I advocate are significant.

REFERENCES

- Achinstein, P. (1972). Perception and Discovery by Norwood Russell Hanson. *Synthese* 25 (1/2), Theoretical Concepts and Their Operationalization (Nov.-Dec., 1972), pp. 241–247.
- Brandom, R. (2008). *Between Saying and Doing: Towards an Analytic Pragmatism*. Oxford/New York: Oxford University Press.
- (2015). *From Empiricism to Expressivism. Brandom Reads Sellars*. Harvard University Press.
- Brewer, B. (2011). *Perception and its Objects*. Oxford: Oxford University Press.
- Buddhaghosa (1991). *The Path of Purification (Visuddhimagga)*, 5th ed., translated by Bhikku Ñāṇamoli. Kandy: Buddhist Publication Society.
- Campbell, J. (2002). *Reference and Consciousness*. Oxford: Oxford University Press.
- (2009). Consciousness and Reference. In B. McLaughlin, A. Beckermann, & S. Walter (Eds.), *Oxford Handbook of Philosophy of Mind* (pp. 648–662). Oxford: Oxford University Press.
- & Cassam, Q. (2014). *Berkeley's Puzzle*. Oxford: Oxford University Press.
- Duhem, P. (1954). *The Aim and Structure of Physical Theory*. Princeton: Princeton University Press.
- Farquhar, M. G. & Palade, G. E. (1981). The Golgi Apparatus (Complex)—(1954–1981)—from Artifact to Center Stage. *The Journal of Cell Biology* 91 (1, Pt. 2, Dec. 1981), pp. 77–103.
- Feyerabend, P. K. (2010). *Against Method*, 4th ed. London: Verso.
- Fish, W. (2009). *Perception, Illusion, and Hallucination*. Oxford: Oxford University Press.
- French, C. (2014). Naïve Realist Perspectives on Seeing Blurrily. *Ratio* 27, pp. 393–413.
- Garfield, J.L. (2015). *Engaging Buddhism. Why It Matters to Philosophy*. Oxford: Oxford University Press.
- Genone, J. (2014). Appearance and Illusion, *Mind* 123, pp. 339–376.
- Gupta, A. (2006). *Empiricism and Experience*. Oxford University Press.
- Hacker, P.M.S. & Bennett, M. R. (2010). *Philosophical Foundations of Neuroscience*. Malden/Oxford: Blackwell Publishing.
- Hansen, T. et al. (2006). Memory modulates color appearance. *Nature Neuroscience* 9, pp. 1367–1368.

- Hanson, N. R. (1965 [1958]). *Patterns of Discovery. An Inquiry into the Conceptual Foundations of Science*. Cambridge University Press. [First published in 1958, edition cited: first Paperback edition from 1965.]
- (1969). *Perception and Discovery: An Introduction to Scientific Inquiry*. Freeman, Cooper & Co.
- Heim, M. (2015). Buddhaghosa on the Phenomenology of Love and Compassion. In Ganeri, J. (Ed.), *The Oxford Handbook of Indian Philosophy*. Oxford: Oxford University Press.
- Kant, I. (1968). Immanuel Kant: Werke: Akademie-Textausgabe, Bd. 3, *Kritik der reinen Vernunft [KrV]* (2. Aufl. 1787). Berlin: Walter de Gruyter.
- Klein, J. (2015). Francis Bacon. The Stanford Encyclopedia of Philosophy (Summer 2015 Edition), Edward N. Zalta (ed.). <http://plato.stanford.edu/archives/sum2015/entries/francis-bacon/>.
- Logue, H. (2012). Why Naive Realism. *Proceedings of the Aristotelian Society* 112, pp. 211–237.
- Lund, M. (2010). N. R. Hanson. *Observation, Discovery, and Scientific Change*. New York: Humanity Books.
- Martin, M. G. F. (1998). Setting Things Before the Mind. *Royal Institute of Philosophy Supplement* 43, pp. 157–179.
- McDowell, J. (1994). *Mind and World*. Harvard University Press.
- (2013): Perceptual Experience: Both Relational and Contentful. *European Journal of Philosophy*, Vol. 21, pp. 144–157.
- Murdoch, I. (1970). *The Sovereignty of Good*. London: Routledge & Kegan Paul.
- Nagel, T. (1974). What Is It Like to Be a Bat?. *The Philosophical Review* 83(4), 435–450.
- Nanay, B. (2014). The Representationalism versus Relationalism Debate: Explanatory Contextualism about Perception. *European Journal of Philosophy*, doi: 10.1111/ejop.12085
- Olkkonen, M., Hansen, T., & Gegenfurtner, K. R. (2008). Colour appearance of familiar objects: effects of object shape, texture and illumination changes. *Journal of Vision*, 8(5), pp. 13, 1–16.
- Payne, B. K. (2001). Prejudice and Perception: The Role of Automatic and Controlled Processes in Misperceiving a Weapon. *Journal of Personality and Social Psychology* 81(2), pp. 181–192.
- Radder, H. (2006). *The World Observed/The World Conceived*. Pittsburgh: University of Pittsburgh Press.
- Scholl, B. & Firestone, C. (2016). Cognition does not affect perception: Evaluating the evidence for ‘top-down’ effects. *Behavioral and Brain Sciences* 39, doi: 10.1017/S0140525X15000965.
- Schurz, G. (2015). Ostensive Learnability as a Test Criterion for Theory-Neutral Observation Concepts. *Journal for General Philosophy of Science* 46, pp. 139–153.
- Searle, J. R. (2015). *Seeing Things As They Are. A Theory of Perception*. Oxford: Oxford University Press.
- Sellars, W. (1948). Concepts as Involving Laws and inconceivable without Them. *Philosophy of Science* 15(4), pp. 287–315.
- Siegel, S. (2010). *The Contents of Visual Experience*. Oxford: Oxford University Press.
- (2012). Cognitive Penetrability and Perceptual Justification. *Noûs* 46(2), pp. 201–222.
- (2013). The epistemic impact of the etiology of experience. *Philosophical Studies* 162, pp. 697–722.
- (2015). Epistemic Charge. *Proceedings of the Aristotelian Society*, Vol. CXV, Part 3, pp. 277–306.
- (2017). *The Rationality of Perception*. Oxford: Oxford University Press.
- Stokes, D. (2013). Cognitive Penetrability of Perception. *Philosophy Compass* 8(7), pp. 646–663.
- Stoljar, D. (2016). The Semantics of ‘What it’s like and the Nature of Consciousness,’ *Mind* 125 (500), pp. 1161–1198.
- van Fraassen, B. C. 1980. *The Scientific Image*. Oxford: Clarendon Press.
- Wittgenstein, L. (1991). *Remarks on the Philosophy of Psychology*, in 2 volumes. Wiley-Blackwell.
- (2009). *Philosophical Investigations*, 4th ed., Wiley-Blackwell.