
Bridging the Gap

A Commentary on Jonathan Schooler

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In my commentary on this rich paper, I will focus on the methodological approach proposed by Schooler. The main goal of this commentary is to introduce an improved and more detailed interpretation of Schooler's distinction between experiential consciousness and meta-awareness. I will address four issues. After summarizing Schooler's main ideas, I will discuss some general problems regarding the proposed distinction between experiential consciousness and meta-awareness. I will relate the distinction to the more general debate. I then discuss some conceptual claims to which Schooler seems to be committed to making, and show how they relate to one another. I point to some tension between them. As I will argue, the central issue has to do with the underspecified notion of "reflection". Different kinds of reflection are required for Schooler's "pure experience" and for meta-awareness. I will try to get a better grasp on the author's underlying position by discussing the main empirical evidence motivating the account, namely mind-wandering, in section two. I argue that the evidence does not support the distinction as introduced, but does give us some insight into the complexity of the required meta-cognitive processes. I will suggest some conceptual changes in the underlying framework, which I believe make the main project stronger and help to avoid some of the problems we have encountered. Specifically, I want to introduce a taxonomy of different kinds of reflection and show which kinds of reflections might be required both for Schooler's "pure experience" and for his meta-awareness. In the third section, I turn to the author's main claim, which is the existence of a new meta-perspective. According to Schooler, this is the central proposal of his paper, and it follows from his initial perceptual-perspective-shifting analogy and the distinction he proposes. Schooler claims that the meta-perspective helps us to overcome the limitations of both perspectives: the first person perspective and the third person perspective. In effect, by introducing the meta-perspective we can bridge the gap between self-reported experiences and observable behavior, and get a completely new perspective on the mind-body problem. As I will argue, this ontological element is relatively independent of the rest of his methodological project. Moreover, it is an unnecessary strategic move.

Keywords

Accessibility | Cognitive | Consciousness | Higher-order accounts | Phenomenal | Reportability | Stream of consciousness

1 Introduction

Starting from perceptual perspective shifting, Schooler focuses on the gap between self-reported experiences (the first-person perspective) and observable behavior (the third-person perspective). So consciousness versus self-awareness of being in a certain state, and the relationship of both of these to observable behavior is at the heart of the project. The main goal of the tar-

get paper is to introduce a new methodology for studying conscious versus unconscious states and processes. Although this is a very rich paper, we are not given too much information about the conceptual framework and the way in which Schooler's proposal relates to the contemporary philosophical debate about consciousness, reportability, and accessibility. This aspect

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will be my focus: the relationship between philosophical theories of consciousness and Schooler’s account.

Schooler’s ([this collection](#)) project uses the combined strategy of self-reports, observable behavior, and physiological measurements of the body: a “trust but verify” (p. 8) approach to reports of subjects’ experience. He is interested in:

the relationship between people’s belief about their experience and empirical indices of their *underlying mental states*. [...] Moreover, the theory of the intermittent and imperfect *nature of meta-awareness as a re-representation of experience* [...] provides a scaffold for conceptualizing the situations in which *beliefs and underlying experience converge and diverge*. (p. 19, emphasis added)

Though it sounds at the beginning as if Schooler is making a claim about internal states in general in general, it quickly becomes clear that he indeed makes a claim about the personal-level, or conscious internal states. In so doing, he transitions from internal states to a certain kind of internal state—a conscious one. Later in the paper we find similar transitions: first we find a statement that can be interpreted as talking about all internal states, or verbally reportable knowledge of one’s states, but then he immediately makes a statement about the underlying experience. For example, he informs us that in mind-wandering we can “identify situations in which all evidence suggests people are routinely lacking in their current *knowledge of their on-going mental states*” ([Schooler this collection](#), p. 19, emphasis added). A little later we find a statement about experience, thus knowledge or beliefs about *conscious* states:

In short, a strong case can be made for the value of using 3rd person science to inform not only our understanding of people’s beliefs about their experience, but also to discern when those beliefs are likely to be accurate and when they may be inaccurate or incomplete. ([Schooler this collection](#), p. 20, emphasis added)

A similar transition from a statement about internal states to a statement about conscious internal states, which as a result can be reported, can also found slightly earlier:

by using various reasonable markers of people’s internal states we have been able to examine the conditions under which people’s reports are more or less likely to be aligned with their experience. ([Schooler this collection](#), p. 19, emphasis added)

To summarize, it seems that “what is going on in someone’s mind”, in Schooler’s terminology, refers to the conscious mind. His approach locates him in a group of thinkers¹ who challenge the notion of accurate reportability, or who challenge access as the main criterion for conscious experience. There is a very active contemporary dispute between defenders of what have been dubbed cognitive accounts of consciousness and proponents of non-cognitive accounts ([Overgaard & Grünbaum 2011](#)). Opponents of cognitive approaches associate consciousness with cognitive functions like controlled processing, working memory, selective attention, or some network of different cognitive processes.² Because of this association, these functions can be used to study consciousness from a third-person perspective. In contrast, non-cognitive approaches assume that consciousness cannot be operationalized in terms of cognitive function. Consequently, these accounts dissociate consciousness from cognitive capacities. Which leaves us (typically) with just subjective criteria as acceptable for studying consciousness. Obviously Schooler’s account is an example of a cognitive approach. In my opinion, this general dispute cannot be resolved by empirical evidence because neither of these approaches can be empirically falsified, or at least the empirical evidence can in principle be explained both ways—in essence we have a clash of intuitions, and the evidence can be interpreted as supporting opposing views.³ However, the approach one favors

¹ See for example [Seth et al. \(2005\)](#), who presented a proposal close in spirit.

² See [Overgaard & Grünbaum \(2011\)](#); [Block \(2011\)](#); [Cohen & Dennett \(2011\)](#); [Kouider et al. \(2010\)](#).

³ See the debate about alternative explanations of the findings of atypical perceptual conditions (for example of the Sperling paradigm) in the references above.

will obviously determine one's criteria of consciousness, the experimental methodology used, and, consequently, one's findings. Nonetheless, I do not want to go too much into this very wide dispute, partly because I think it would be rather fruitless.⁴ So for the purposes of this commentary, I will focus on issues *within* cognitive approaches alongside Schooler's cognitive account. But the objections against cognitive accounts of consciousness in general are issues that Schooler, given his introduction of a cognitive methodological approach for studying consciousness, potentially needs to address.

By using mind-wandering as his main example, Schooler then proposes a list of criteria that—so the idea goes—might help us to get a better grasp on the conscious experience, and not just conscious states to which we attend or states of which we are meta-aware. This underlying conceptual distinction turns out to be essential for Schooler's overall project.

One way of interpreting Schooler's account is to see it as a combination of a number of claims, which is evident in the quote above. He himself, right after introducing the distinction, argues that the two cases come apart in mindreading, and the fact that “people routinely shift perspective (from simply experiencing to attempting to re-represent their experience to themselves) provides the foundation for a framework of scientifically investigating first person perspective” (Schooler [this collection](#), p. 9). The implicit *main argument of the paper* can be reconstructed in the following way:

(1) Schooler introduces a conceptual distinction between *experience* and *meta-awareness* as a re-representation of experience.

(2) He then presents empirical evidence that this conceptual distinction corresponds to reality, in mind-wandering and other cases.

(3) He then uses this evidence to suggest a general list of testable features for those interested in the empirical investigation of conscious-

ness. The last issue is particularly important: in effect, Schooler suggests replacing the classical testable criterion for consciousness, (oral) reportability, or accessibility to introspection, by several criteria, which are testable and available from the third-person perspective.

(4) He claims that this gives us a principled new way of reconciling the tension between the first- and third-person perspective by introducing a higher meta-perspective, an ontological claim; in essence, this meta-perspective allows for a new strategy to solve the mind-body problem. We are promised the above-mentioned new “framework for scientifically investigating first-person experience” (Schooler ([this collection](#), p. 9) resulting from the analogy of perspective shifting.

2 The revised view

There is much more in the target paper than I have mentioned here. For the purposes of this commentary, I will focus on four issues related to the general issue of consciousness, which then result in the presentation of a revised version of the author's account. Now that I have summarized what I take to be the author's most important ideas, I will discuss some general problems the underlying distinction seems to bring with it. This section receives my main attention. I will try to localize the distinction within theories of consciousness. I then discuss some underlying conceptual claims to which Schooler is committed to making, and show how they relate to one another. I will point out that there is serious tension between them. In the second section, I will discuss in more detail the main empirical evidence that motivates the account—mind-wandering—, and introduce the proposed criteria. My epistemic goals in the commentary are, first, to determine the exact relationship between the initial distinction, the evidence presented, and the proposed list of criteria. Second, to discuss of how we should evaluate certain criteria, and what they tell us about underlying concepts of meta-awareness, access, and reflection. Third, to gain some insight into the relationship between one's position regarding the mind-body problem and the suggestion

⁴ By this I mean that the evidence does not allow us to rule out the whole class of cognitive versus non-cognitive accounts. I think however, that certain accounts within these classes are vulnerable to evidence; for example, explicit accessibility accounts (Prinz 2012) seem to have a lot less room to maneuver. But as a debate between cognitive versus non-cognitive accounts, the possibilities for interesting general insights seem limited.

the author draws from his perceptual perspective shifting analogy. According to Schooler, this is the central proposal of his paper; he claims the existence of a new-meta-perspective, which helps to overcome the limitations of both perspectives and thereby solves the mind–body problem. As I shall argue, this element is relatively independent from the rest of the project. Moreover, I think it weakens the main project.

As a positive contribution, I will suggest some conceptual changes of the underlying framework. The changes I will suggest include giving up some claims and revising others. I think these changes make the main project, which I take to be a methodological strategy for studying consciousness, stronger. They also help to avoid some problems we encountered in the discussion of the main argument. I also suggest a finer-grained specification of different kinds of reflection and taking stock. This will help to give us a better understanding of meta-cognition in general as well as of consciousness and awareness of being in a certain state as distinct phenomena. I take this to be a driving idea in Schooler’s initial distinction.

3 The category of “conscious but unaccessed” states

Traditionally, we find a distinction in the literature between two categories: on the one hand conscious experiences, states, and processes to which subjects have access, and on the other hand unconscious processes to which they do not have access (Cohen & Dennett 2011). According to this general picture, access to these states and processes then includes in many cases accurate reportability, which is the reason why reportability, or accessibility to introspection, is central to any judgment about conscious states. But access can also be understood more broadly: not all access is conscious itself, and not all access results in behavioral or verbal reportability.

In general, if we have a conscious state and a corresponding unconscious state, there are two possibilities for how the two can differ.⁵

⁵ Of course hybrids are possible, so we might have combinations of functional differences and differences in content. I take Tye (1995) to defend such an account.

The first option is that the representational content of a state determines the experience, at least in part, so that both states differ in content. My conscious belief that my partner is cheating on me has a different representational content than the corresponding unconscious belief. These accounts are first-order accounts. The second option is that the states have identical representational content, but there is a difference in kind in the way in which they are embedded in the system—in philosophical jargon, the functional role that each state plays differs. According to this position, my conscious and unconscious suspicious beliefs that my partner is cheating on me are two states with the same content—expressed in the that-clause—but the conscious belief causes different internal states and different behavior to my unconscious belief. For example, in the conscious case, I will have the conscious thought that he is not treating me respectfully, and I might verbally confront him right away; in the second, unconscious case, neither of these activities will happen.

The first option is consistent with the standard view of what determines a difference in experience. However, it has a disadvantage: we cannot explain why the two states “correspond” unless there is some significant semantic overlap between them. The functional role view has the advantage that it can explain the similarity between the two states, but the disadvantage that we need an explanation of what exactly it is that makes a state conscious, and we have to show *why* this difference results in a difference in experience.

Schooler seems to opt for the content or representational view. Picking up Dennett’s idea⁶ that people can be inaccurate about their own mental going-ons and internal states, Schooler concludes that, at least in some situations, external observers can have better insight into a subject’s experience than the subject themselves (p. 8). However, as we saw in the quotes above, Schooler seems to interpret the internal states in question as conscious internal states.

This is consistent with the idea that the access to internal states changes the content of

⁶ See Schooler (this collection), p. 8.

the state, i.e., the content view: accessing a state changes the content of the state. Since the content determines the experience, the experience of a non-accessed and an accessed state differ. Understood this way, Schooler's criteria give us opportunities to know *better* than the subject himself what he consciously experiences. Access and the reports of subjects about their experience, and the experience itself can come apart. If this is right, it would be unexpected and not what the commonsense understanding of conscious states predicts. As for the first aspect, Schooler believes that mind-wandering gives us an empirical case, where accessing (in the sense of attending to) a process or state changes that very state.

3.1 The general distinction between conscious experience and meta-awareness

I will start with a discussion of the motivation for the distinction (see p. 3), and some general problems we seem to invite if we accept this distinction. Schooler, and with him others, presuppose that conscious experience and accessibility can come apart; moreover, there is an experience *before* it is accessed. In other words, we postulate a third category, besides conscious and unconscious states: there are now “conscious but not accessed” states. These thoughts seem to be in line with other considerations in this debate, which propose a new category of phenomenal consciousness with no access (Block 2011; Lamme 2003).

Schooler distinguishes between simply “having experiences”, which he calls that *experiential consciousness*, and explicitly “taking stock” or re-representing this experience, which he calls *meta-awareness* or *meta-consciousness* (Schooler 2002, p. 339). Meta-consciousness then, is “defined as the intermittent explicit re-representation of the contents of consciousness” (2002, p. 339), while a later he says it is “knowing that one is having that experience” (2002, p. 339). So meta-awareness is about a certain kind of access.

Because we can clearly distinguish both, mind-wandering seems an excellent empirical

candidate for the study of consciousness. At one point we notice our mind-wandering; but *what* we notice, the mind-wandering itself, occurs earlier. In the meta-aware case, we re-represent the former state; in order to do this, we access it by re-representing it, and we “take stock”. Then the subject becomes meta-aware of the state, and we know that we are in this state, but this very process changes the content. Our experience of mind-wandering is different once we become meta-aware that we are mind-wandering.

But this seems conceptually puzzling. Access and (verbal) reportability are clearly not the same, such that missing (verbal) reportability cannot not be equated with general lack of access, especially at the subpersonal level. With knowledge, reflection, re-representation and meta-awareness, as well as meta-consciousness, we get additional and differing concepts. First, often “knowledge” is used as something that is itself conscious. Is the idea that we are aware only of the mind-wandering, or also of our knowledge that we are mind-wandering? The author alternates between both phrases. But both claims differ. I can be aware of an experience without being aware of my knowledge that I have this experience. The latter includes a meta-level of a different kind. While the first contains a meta-process regarding the experience, the second is a meta-process referring to a propositional state, knowledge, *of* the experience. As a result I am aware of being in the state and not just of the experience. Moreover, reflection is a vague term. How exactly do we reflect on a state, process, or content of a state? What exactly does this entail? So the question is: what is meta-awareness and what distinguishes it from simple awareness? Finally, re-representation is mentioned, yet another concept used to characterize meta-awareness. Without further explanation, re-reflection seems a very broad and vague concept that would include all kinds of re-represented contents. Do most of these occur unconsciously, as certain kinds of functional accounts, higher-order accounts, predict (Jackendoff 1987; Rosenthal 2005)? How is something re-represented? How exactly

do the representation and the re-representation relate to one another?

The question of which types of neural processes might be sufficient for awareness is highly controversial in current debate, as is whether there can be any awareness of a state without access (see the exchange between [Fahrenfort & Lamme 2012](#) and [Cohen & Dennett 2011, 2012](#)). Relatedly, the status of local recurrences is debated. Block and Lamme argue that there are perceptual cases in which subjects do not attend to a stimulus (in change blindness, inattention blindness, and attentional blink) and as a result are not able to report the presence of the stimulus. They might nonetheless be phenomenally conscious of the stimulus because it induces local recurrence in perceptual brain regions. As a result, a subject's reports are not to be trusted in all cases: subjects could be conscious of stimuli even when they themselves deny it. This sounds very close in spirit to Schooler's idea. However, Schooler doesn't tell us how his account, and pure mind-wandering versus meta-awareness of mind-wandering, relates to this debate.

Despite these unclear aspects, the underlying intuitive idea is clear: Schooler wants to distinguish phenomenally-conscious experience from a meta-level of consciousness, in the literature also referred to as meta-awareness, and sometimes as reflective awareness, reflexivity, or reflexive consciousness. But what exactly characterizes this meta-level remains unclear. We are simply not told, the used concepts seem vague, and, without further explanation, underspecified. But, of course, this does not imply that the main idea is not helpful, or that it is not possible to specify them.

However, Schooler seems to sympathize with Cohen and Dennett, so I take it that he thinks (like them), that awareness differs from behavioral reportability. However, Cohen and Dennett explicitly state that they do not see many reasons to think such conscious information exists before it is accessed ([Cohen & Dennett 2012](#), p. 140). So they reject the very option, the third category, that Schooler wants to postulate. There seems to be a sharp tension between Schooler's distinction and his agree-

ment with Cohen and Dennett's general approach: Whereas Cohen and Dennett argue that theories postulating inaccessible conscious states are intrinsically off-limits to investigation, Schooler not only defends an account along those lines, but also argues that his account gives us a solution strategy to overcome the tension between the first- and third-person. Obviously, there is a need for conceptual clarification of this highly original idea.

However, I think we can learn a few interesting things from this. First, we can rule out a very general understanding of reflection or meta-cognitive processes. Most theorists agree that part of what it is to be in a conscious state is to have a unified perspective on the world. So the possibility of distinguishing between me and the world, or a self, or some kind of self-consciousness is required as an indispensable part of conscious experiences of many kinds. One way of describing this is to say that experience includes some kind of categorization. In other words, it is a kind of meta-cognition on this highest and most general level. At least, we as humans keep track of this interdependence of action and perception/experience at the personal level. To mention a classical example, it seems very hard to experience pain if one doesn't classify something as painful, or without seeing it as painful *for me*. Indeed, some kind of evaluation, conscious or not, seems to be required for something to classify as pain; just as, in order to see something visually as a cow, we have to classify or categorize it as a cow ([Dretske 1993](#)).

At first glance, an account like Schooler's cannot allow for this because the standard view requires meta-cognition for conscious experience. Experience is cognitively penetrable, such that knowledge about categories influences how we experience an object. In contrast, Schooler distinguishes both, and wants to allow for experience before (any?) meta-level involved. At least he talks sometimes as if meta-cognition in general is the issue when it comes to meta-awareness of mind-wandering. When he talks about theory of mind and the areas involved in meta-cognition ([Schooler this collection](#), p. 17), he suspects that because certain meta-cognitive

processes and mind-wandering occupying both engage the same systems, specially the dorsal ACC and the anterior PFC, this might explain why it is so hard to catch oneself mind-wandering, i.e., to gain meta-awareness of mind-wandering. However, he notices that identity of brain regions does not imply a causal relationship, and that further research is necessary.

However, it would be hasty to conclude that Schooler cannot concede that meta-cognition can be involved in experience on his account. Though he talks frequently as if the issue were meta-cognition in general, he is not committed to excluding *any kind of* meta-cognitive process. But what is needed is a differentiation between different kinds of meta-reflection or re-representation. Schooler needs to address the question of whether we see the same kind of meta-cognitive processes in different kinds of experiences, and how exactly this changes the experience. Interpreted this way, only a certain *kind of* meta-reflection or meta-cognition might establish meta-awareness. As I will show, this move avoids a number of other problems.

We know that experience depends on background knowledge, and that our knowledge and our classification processes change our experience in many cases. This seems to be the case not just in mind-wandering, Schooler's favorite example, but also in many other cases. What matters is not just how I classify a state or process; many other internal states and contextual factors influence experience. Let's assume that I am a big fan of Baroque music, but cannot stand twelve-tone music. I happen to blunder into a concert with music by Penderecki, and of course do not like what I hear. Simply by gazing at the program and learning that I am listening to Penderecki's Saint Luke Passion, which uses references to motives by Johann Sebastian Bach and is in a sense a homage to a well-known Bach piece, how I experience this piece of music might change. Chances are that I am still not able to hear the references to Bach and the coded references to passages in Lucas in the middle of all the dense tone clusters. But my belief that it is a homage to my beloved Bach will change my experience in general. Other states, beliefs, and emotions in-

fluence my auditory experience and make it, in this case, somehow more enjoyable.⁷ It is also well known that crossmodal influences change experience: one's taste experience changes with conflicting visual experience. So a pure strawberry juice tastes less like strawberry to us if it is colored blue, even if the juice itself is not altered.⁸ How we experience a certain wine depends on knowledge about price, how famous the winery is, and many situational aspects. In these examples, the real question seems to be how exactly our experience changes, and how do particular internal and external factors contribute to the change. What changes in how we re-represent, and how fundamental is this change? And what is meant by these terms?⁹

So Schooler's meta-awareness can come in many forms. "Meta-cognition" includes a broad range of phenomena. What they have in common is that subjects have some insight into their own cognitive functioning. It is not clear to me that it is an all-or-nothing affair between pure experience and meta-awareness or reflection. So a specification of what exactly is meant by meta-awareness, re-reflection, and access seems necessary. We also need to answer the question of how the two categorically differing states differ in content, and which *exact kinds of meta-processes* are relevant. "Reflection" and "re-representation" are notoriously vague terms. Some kind of reflection at least seem indispens-

7 Bayne & Montague (2011) provide a nice overview of the complex cognitive phenomenology debate in his introduction to his volume. One might think that other contents causally influence the phenomenology of a state. A second option would be that "what it is likeness" is not a useful conceptual distinction at all (Lycan 1996, p. 77; Papineau 2002, p. 227). A third option would be that there are several meanings of "what its likeness"—indeed, in the literature different distinctions have been suggested. I will go into more detail in a later section, when I introduce elements of an improved taxonomy.

8 See further discussion in Grush (this collection).

9 Regarding visual perception Siegel (2005) has argued that that learning to recognize an object can change the way that it looks—in the phenomenal sense of "look", which is taken to imply that the cognitive components of such states are necessary for explaining the change in phenomenal character. In contrast, one could argue that the phenomenology does change, but the change can be explained in sensory terms instead of in terms of cognitive components. Either a subject's concepts do not directly constitute the subject's phenomenal states, such that they can have a causal influence on their phenomenology (Carruthers & Veillet 2011), or the contrast between both is the result of differences in the way that one processes the information within the sensory system (Tye & Wright 2011). For my purposes here, what matters most is *that* the phenomenology differs, and that we need an explanation for it.

able for a state to be conscious. But that doesn't mean the distinction above is not justifiable. We just need to determine and specify the kind of reflection and/or re-representation. I will make some suggestions later in this paper (see p. 15).

To be fair, while Schooler does not distinguish between different kinds of reflections, he indirectly assumes that there are differences. But in his view the phenomenon dictates what the criterion for introspective awareness is. He distinguishes classification under the concept of "taking stock": "there are some mental states (e.g., mind-wandering) for which the crucial bottleneck in people's introspective awareness stems not from their capacity to classify the experience, but rather from the fact that people only intermittently take stock of what is going on in their own minds" (Schooler [this collection](#), p. 8).

This obviously implies that for other phenomena the crucial difference does stem from their capacity to classify an experience. As a result, we in effect have different criteria for introspective awareness and for mind-wandering and visual perception. I believe a more promising route is to allow for dimensions of reflection and complexity of experience along multiple dimensions, but to try to find as uniform criteria as possible. The experience and phenomenology in cases of thought and sensory states (broadly construed) might be different.¹⁰ But some properties or property clusters have to bind instances of introspective or meta-awareness together.¹¹ Otherwise, what would justify classifying them as the same, if both the phenomenon and the properties associated with the phenomenon differ? We would just be talking about different things. I have already ruled out two kind of meta-cognitive processes the author cannot use for a more detailed characterization of the difference between conscious states and meta-aware states: categorization under concepts is one kind of meta-cognitive reflection that itself is unconscious, but necessary for con-

scious experience. Distinguishing between self and world is another dimension of reflection, at the highest level, that seems necessary. Meta-cognition always requires representational use (of some kind), because within it we find monitoring of cognitive affordances. But there are several *ways* in which this monitoring can take place. As I argue below, meta-cognition, the ability to monitor and control one's own cognition, and the ability to attribute mental states to oneself and others can occur in different ways; and both the self-other distinction, and self-awareness can occur in a number of ways.

3.2 Meta-cognitive accounts of consciousness: Content vs. function

A core idea in the target paper is the claim that there is a difference between an experience and an experience one is aware of having. Both states are experienced, but the idea seems to be that reflection could potentially change an experience in a certain way, because it focuses on the content of the intentional formerly un-reflected state. Interpreted this way, Schooler seems to defend the content view, though I do not think he is committed to it. He doesn't explicitly subscribe to it, but it seems implicit in what he says when he talks about the content of states and frequently switches back and forth between content talk and talk of experience. He seems to think that these are related. And he doesn't say much about the functional role that the states in question play in other states, or how cognitive processes use them—something one would expect if he held the functional view. So it is tempting to interpret him as having the view that content determines experience (Block 2005). For example, in writing that there are "some situations in which observers might have better knowledge about a person's mental state than does the person in question" (Schooler [this collection](#), p. 8), what he must mean is that observers have better insight into the *content* of people's states. A little later, he claims, regarding misrepresentations, "while in the process of re-representing, one omits, distorts or otherwise misrepresents one's mental state to oneself and/or others" (Schooler [this collection](#),

¹⁰ As the complex debate about the possibility of a phenomenology of thought suggests.

¹¹ At the very least we would need to insist that there is a family of co-occurring properties playing an explanatory role within theories (Boyd 1999).

p. 10). Again, what we misrepresent is obviously the *content of the state*.¹² If he has a content view, than his view is that (at least in some cases) I have an experience first, and then, when I reflect on it, that very process changes the content of the initial intentional state. That then is the reason why the experience differs between mind-wandering as “purely experienced”, and mind-wandering experienced with awareness. The phenomenon of mind-wandering indeed introspectively changes after we reflect upon it, and become aware that we are mind-wandering.

But I think there is a larger issue here. Interpreted this way, it is tempting to judge that accounts claiming that what makes a state a conscious state is its functional role are inconsistent with Schooler’s account. Again, I think this would be too hasty. Let me explain. Assuming a representational theory of phenomenal consciousness,¹³ there are accounts that provided in purely first-order terms and accounts that implicate higher-order cognition of one sort or another (see below) with conscious experience. If we accept Schooler’s distinction, a state is conscious before we are aware of it, or know that we are in this state, and, when we become aware of it, this changes the state, or its content, to be more precise, as Schooler seems to suggest. Thus, Schooler seems to defend a first-order account, namely an account in which it is claimed that the consciousness of a state is partly (or entirely) determined by its representational content, or sometimes the format of its representational content, not primarily at first the function it plays (Byrne 2001; Dretske 1993; Kriegel 2009).

In the class of functional¹⁴ accounts we find a great range of different accounts, including second-order accounts, accessibility accounts (Prinz 2012), and global workspace accounts (Baars 1988). Many of these are close in spirit to Dennett’s. Though they differ, they have one thing in common: it is a certain functional relationship the states in question have to other states or within the system, which makes these states conscious states.

¹² See also, for example Schooler (this collection), pp. 16-17.

¹³ For the purposes of this commentary I neglect biological state theories.

¹⁴ On a very broad reading of “functional”.

Second-order accounts, for example, would claim that what makes a state a conscious state is that the state is (or is disposed to be, in some versions) the object of a higher-order representation of a certain sort. This state is a meta-level state, a mental state directed at another mental state. Higher-order accounts differ on how exactly this higher-order representation is characterized and what the exact relationship between both states is. In some versions the higher-order representation is a higher-order thought (Rosenthal 1986, 2005), in others a higher order-order perceptual or experiential state (Lycan 1996), yet other versions see the higher-order state as dispositional (Carruthers 2000). There are also differences concerning the question of whether the higher-order state should be understood as entirely distinct from its target state (Rosenthal), or whether the higher-order thought is better viewed as intrinsic to the target state, which would imply that we have a complex conscious state with parts. There exist different versions of the intrinsic view, which all have in common the idea that instead of a separate higher-order state there is a global meta-representation within a complex brain state (Gennaro 1996; Van Gulick 2000; Metzinger 1995). For the purposes of this commentary, I will focus on Rosenthal’s higher-order thought theory, but my considerations generalize to many of the higher-order accounts. The existence of the higher-order state and the right connection between both (one is the object of the other) makes the lower level one a conscious state. The higher-level state, however, is itself unconscious, unless there exists a third-level state—the existence of which would result in awareness of being in a conscious state. In effect, the existence of a certain kind of meta-cognition is what makes the lower level state a conscious state, or even a state that we are aware of being in. In this framework, Schooler’s meta-awareness would require a third-order state.

Accessibility accounts, for example that of Jesse Prinz’ (2012), would claim that attention is both necessary and sufficient for states to be conscious. In global availability accounts¹⁵ it is

¹⁵ Initially introduced by Baars (1988, also 1996). More modern proponents would be, for example, Dehaene et al. (2006).

claimed that the functional role is the global availability, or the workspace. The idea is that there is competition among neural coalitions; the winning coalitions are the conscious ones. There are a lot of similarities between higher-order theories and the neuronal global-workspace theory, but we should not see them as theories of the same type. According to the neuronal global-workspace theory, a state is conscious due to the global availability of its content, whereas higher-order theories see a state's being conscious as "consisting of one's being aware of oneself as being in that state" (Rosenthal 2012, p. 1433). If one interprets Rosenthal's reference to "oneself" as Metzinger's phenomenal self-model (2003), then a higher-order theory requires the integration of an individual state in a coherent representation or inner model of oneself, in contrast to a global-workspace theory, in which all that is required is availability of the content. Both aspects, the kind of meta-representation (the number of higher-order steps) and a certain identification of the original state as *my* state are dissociable, and they are examples of what I mean by different dimensions of reflection.

I think Schooler's account stands in natural alliance with both kinds of accounts, in contrast to what one might initially think. It is the vagueness of the term "meta-awareness" that is causing this unjustified reluctance. For example, higher-order thought accounts seem a natural way to specify what Schooler might have in mind when he talks about meta-aware states. According to Rosenthal, there can be unconscious pain states, if these are accompanied by the thought that I am in pain, I am experiencing pain, but the thought itself is unconscious. Only if there is a third-order state, the thought that I have the thought of being in pain, am I aware that I think that I am in pain. To me, this sounds close to Schooler's meta-awareness of taking "stock of our ongoing experience and re-represent[ing] it to ourselves" (this collection, p. 8). However, there is an important difference: for Rosenthal there are only conscious and unconscious states; the presence of the third-order state gives us what Schooler might call meta-awareness. However, Rosenthal

denies the very possibility Schooler claims exists, that one can be in a conscious state but not aware of it. "No mental state is conscious if the individual that is in that state is in no way aware of it" (Rosenthal 2012, p. 1425). Due to the existence of a third-order state with the right content, we get introspective awareness of a conscious state: a third-order awareness that makes one aware of the second-order awareness. Rosenthal expects such cases, in which we "are aware of focusing attentively on that state" (2012, p. 1427), to be rare. It seems to me that there is a natural fit between Schooler's meta-aware states, in which we know that we are having a certain experience and Rosenthal's introspective awareness of a conscious state. In Rosenthal's framework, meta-awareness necessarily requires a third-order representation.

In addition, Schooler's suspicion that "meta-awareness appears to be associated with rhythms of attentional flux" (this collection, p. 17) relates nicely to accessibility accounts.¹⁶ But as I will claim in the next section, global availability accounts stand in another obvious alliance with Schooler. Again, it seems that it all depends upon our understanding and further specification of "reflection" or the "meta" in Schooler's meta-awareness. Is reflection itself necessarily a conscious process? Is it a thought, or just any kind of representation for the purposes of monitoring one's own cognition or an explicit higher-order classification? Unfortunately, Schooler does not describe his meta-awareness in more detail.

It seems to me that we should concede that some kind of "reflection" might be required for something to be an experience. This leaves still plenty of room to specify different kinds of reflections, some of which might constitute more than awareness, namely meta-awareness. This becomes the real question. Is this reflection itself unconscious or even necessarily conscious? Is it a re-representation of some kind? If that is the case, what kind of re-representation is required? Schooler's meta-awareness might require a rather demanding kind of reflection, and the

¹⁶ However, in the end accessibility accounts will not be Schooler's best bet—after all, I interpreted him above as agreeing that access and awareness differ.

relationship Rosenthal describes seems a good candidate. But perhaps what we have instead of a simple dichotomy between pure experience and meta-awareness is a full spectrum of dimensions of meta-representation. Then the question is, what are the dimensions of reflection required for Schooler's "pure experience" and those for meta-awareness, and which other reflections are there? This search for a proper taxonomy of "reflection" seems the most pressing need. It will hence be my main focus, and I will suggest some building blocks for such a taxonomy (p. 15). Rosenthal's introspective awareness of a conscious state as an possibility for characterizing Schooler's meta-awareness will be one element of this.

3.3 A general concern for scientific practice and a conceptual worry

This brings us to another and more problematic issue. I find the general line of thought behind a rigid distinction between pure experience and meta-awareness of this experience problematic. First, it presupposes that we accept the distinction between access-consciousness and phenomenal consciousness—a distinction not everybody (to say the least) is happy to accept.¹⁷ Second, and more fundamentally, such a new category would have to be motivated. How do we distinguish "conscious processes, which are not accessed" from unconscious activity? Are they *de facto* not explicitly re-represented, or is it impossible to re-represent them? What does it then mean to say that something is "conscious"? One might suspect that this new concept of "conscious" is not compatible with our common-sense intuitive understanding of the term. Moreover, the stronger reading of Schooler's position might invite further problems. If we claim that access to a state would necessarily change the status of its content (or the content itself), it would be impossible to address whether it was of a phenomenal or unconscious nature prior to this conscious access. If

¹⁷ However, one might be able to resist the distinction between access-consciousness and phenomenal consciousness and at the same time allow for Schooler's distinction between experienced consciousness and meta-awareness if one claims that access is *not* what characterizes the meta-level in Schooler's meta-awareness.

such an "observer-effect" exists, it could potentially render the whole issue completely immune to scientific investigation (Kouider et al. 2012).

Another open question is how Schooler's account relates to others that seem close in spirit. Dehaene et al. (2006) have presented a more modern and updated version of Freud's concept of preconscious activity. They introduce a proposal with a carefully defended taxonomy of three categories: subliminal, preconscious, and conscious activity. According to Dehaene and Changeux's workspace model developed a little later, dominant neural coalitions involving the workspace are *accessed*. In contrast, existing other weaker activations in the workspace, such as a connection that *could be activated*, for example by a shift of attention, are only *accessible*. Processes that are potentially accessible, but are not accessed at the moment because of sufficient top-down attentional amplification, are "preconscious" phenomenal conscious processes in Dehaene et al.'s terminology (2006, pp. 206-207). I am not sure whether what Schooler is proposing is another version of Dehaene et al.'s "preconscious" phenomenal consciousness. This is consistent with what he writes. In debates on the third category of phenomenally conscious but not accessed states, their distinction between cognitive access and cognitive accessibility is often used to defend the possibility of the aforementioned third category (see for example Block 2011). My own suggestion is related, although I will suggest more closely specifying different kinds of access (see p. 11) and multiple levels of representation, instead of just distinguishing between accessibility and access.

I think Schooler's account would profit from directly relating his terminology to other concepts already in use in the debate. However, there are problems looming: Dehaene et al. defend a version of a functional account, which Schooler seems to explicitly reject when he seemingly advocates a first-order account. But if Dehaene's taxonomy is *not* what the author has in mind, what is the difference between the Schooler's phenomenally conscious but unaccessed activities and Dehaene's preconscious activities?

Let us take stock. I have argued so far for three closely related points. The basic distinction between being experientially conscious of a state and being meta-conscious of being in a state needs further conceptual clarification. Moreover, the combination of a first-order account of consciousness (the content view) and this very distinction might not be the optimal strategy. In fact, a functional or hybrid account seems to provide a more natural strategic alliance for Schooler’s main project. Finally, it seems there is no strict dichotomy between experiential consciousness and meta-awareness; we rather face a difference in many dimensions. From my perspective, both higher-order accounts as well as global workspace accounts might be helpful regarding this issue. They connect nicely with Schooler’s main project, and would help to clarify his basic distinction. But we might very well end up with a more complex understanding of different meta-cognitive dimensions and differentiations instead of a simple conceptual dichotomy. This is what I will provide later in this paper. In order to do this we need to take a closer look at Schooler’s second step; his argument that his conceptual distinction is something we find in cognitive capacities.

4 Mind-wandering—and noticing it. The bundle of criteria

On the basis of the former considerations he presents, Schooler argues that in many capacities we actually find a difference between being in a certain state and noticing that one is in a state (meta-awareness). So he moves onto his second claim, the claim that his conceptual distinction is empirically supported (see p. 3). According to Schooler, there are two forms of dissociations, *temporal dissociations* on the one hand and *translation dissociations* (misinterpretations) on the other. Let me begin with temporal dissociations. Examples of temporal dissociations are mind-wandering vs. noticing one’s mind-wandering, but also mindless behaviors, suppressed thoughts, and unwanted emotions. Schooler mostly uses mind-wandering, however, characterized as situations, in which

we “lose track of the contents of our own minds” (Schooler [this collection](#), p. 9). This is the starting point for the introduction of Schooler’s new “framework for scientifically investigating first-person experiences” (Schooler [this collection](#), p. 9).

I find this focus on mind-wandering a little puzzling, because I am not sure why this is an example supporting the general claim that the content of individual states changes in the specific intentional states. Why is it an individual intentional state that changes? Mind-wandering (at least intuitively) seems to be a complex process, and involves a number of states. In mind-wandering the issue is creature consciousness, not the experience or phenomenal character of an individual state, i.e., state-consciousness. Mind-wandering is about a train of thoughts, often accompanied by emotions, and autobiographical memories. In mind-wandering, we mostly think about issues related to our own life. For example we consider our “to-do” lists for today, what to have for dinner, our relationship to people close to us, telephone calls we need to make, and even our next lecture. At least the phenomenal character we experience during mind-wandering seems to include these the associated sensory states—broadly construed to include feelings of emotions, images, moods—which have a distinctive “phenomenal character” or “what it’s likeness”. But the stream of consciousness also contains episodes of conscious thought.¹⁸ If we use this standard understanding of mind-wandering, it would rather be a bundle of thoughts, associations, or states, in other words a number of many more or less related thoughts, emotions, or other states and processes, not all of them necessarily fully specified in terms of content. And if so, it is not necessarily the content of individual states that changes—we seem to have multiple options for characterizing what changes once we

¹⁸ Schooler (2013) gives a good overview of the performance costs associated with mind-wandering (including reading comprehension, model building, and impairment of the veto-option to automatized responses) and suggests that mind-wandering may represent a pure failure of cognitive control. For this reason it is so useful to study consciousness. He argues that mind-wandering offers little benefit, though it might have a positive role in topics related to autobiographic episodes and information, for example in autobiographical planning and creative problem-solving.

are aware that we are mind-wandering. An alternative interpretation would be that the network of associated elements might change, or even the kind of associations involved. For a conceptual analysis, whether one should include these autobiographic sensory states in the phenomenon itself or just say the “train of thoughts in mind-wandering” causes them, is unclear. But it will determine how we analyze the experience of mind-wandering and the meta-awareness of mind-wandering, and its implications for theories of consciousness. There is also evidence that it has different functions and might itself be a heterogenic phenomenon (Northoff 2014, especially chap. 26; Metzinger 2013). For example, it is not clear whether mind-wandering is the same as day-dreaming, and if not, what the differences are.

Moreover, it is controversial whether thoughts even *have* a phenomenal character, and if so, how to analyze it (Bayne & Montague 2011). The orthodox view is that conscious thoughts themselves do not have a distinctive “phenomenal character”. They are either considered conscious without phenomenal character, or it is conceded that conscious thoughts might possess phenomenal character, but only in virtue of the sensory states with which they are associated (for example Braddon-Mitchell & Jackson 2007; Carruthers 2005; Nelkin 1989; Tye 1995). However, recently, a number of authors introduced views according to which conscious thoughts themselves possess a “distinctive” phenomenology, but the phenomenal character differs from sensory states (Siewert 1998; Pitt 2004; Robinson 2005; Prinz 2004).

So there are a lot of further issues to consider, for a project like Schooler’s; we need to analyze the experience of mind-wandering and contrast it with meta-awareness or reflective experience in mind-wandering. However, Schooler gives some other examples for temporal dissociations, which can more obviously be explained in terms of individual states we do not notice or misinterpret. He doesn’t go into detail, but has mentioned mindless behaviors, suppressed thoughts, and unwanted emotions. The idea seems to be that we are not aware of an individual unwanted emotion, or a thought that

causes behavior. However, these case could also be explained as processes rather than individual states. Mindless behavior is in many cases caused by a bundle of connected states, unwanted emotions relate to other internal states (which make them unwanted), and suppressed thoughts are suppressed due to other internal states.

Nonetheless, if Schooler means by “state” the “general state of mind”¹⁹ rather than individual states, his examples become more convincing. But this seems inconsistent. Schooler takes inspiration from Dennett, who is interested in beliefs subjects have about phenomenal experience of individual states. Schooler switches between talk of phenomenal experience of individual states, and talk about the stream of consciousness the subject experiences. This is evident in the way he introduces the core distinction, namely in terms of the phenomenal experience of a state. At other times he talks about states of which I am aware, and sometimes about “what is going on in one’s mind”, which I take to refer to the stream of consciousness, or more precisely the sequence or combination of contents of individual states, rather than a classification of the experience of just one state. So the pressing question is really: what kind of reflection is “taking stock” exactly? How should we characterize what we do when we “take stock” and reach meta-awareness? In the following section I present more detailed suggestions for a taxonomy of different kinds of reflection. For now let me just say that one possible view would be that the content of these states (or the states) are accessed by other states, and maybe (unconsciously) evaluated. In that case, we should talk about complex processes rather than re-accessed individual states. Such a view would also be compatible with certain higher-order theories of consciousness.

Later in the paper, Schooler discusses examples of misrepresentation, in his terminology “translational dissociations”: emotions, or cases in which it is less controversial whether a phenomenal character is involved than in case of thoughts. He gives two examples of such misrep-

¹⁹ As formulations such as “take stock what’s going in their own minds” (Schooler this collection, p. 8) suggest.

resentations: emotions of anxiety, which are not reported, and reported disgust for homosexuality. In his first example we find a correlation with the inconsistent behavioral measures of heart rate and galvanic skin response, as indicators of existing unreported anxiety. In his second example we have a correlation with penile tumescence (an erection). In both cases we know the bodily aspects of the emotion well (or the caused bodily changes associated with the feeling on an emotion), and thus, so the argument goes, have evidence for the occurrence of the emotion. But in both cases there is also a discrepancy between the subject's reports (assuming the subject is honest) and its potential reportability. Schooler interprets the behavioral facts as indication of the real emotion the subjects experiences, but in the first case fails to acknowledge, and in the second misinterprets.

I am not so sure. First, the theory of emotion one feels committed to certainly plays a central role. Schooler seems to presuppose that unconscious emotions are not possible. Furthermore, it seems to me that both cases are open to a different interpretation, in fact the same interpretation I suggested for mind-wandering. Both unreported (or unreportable?), emotions of anxiety and reported disgust for homosexuality are complex cases. It might very well be that we do not have an individual content of a state that differs, but we rather simply struggle with a number of different but conflicting emotions, the reported one simply being in conflict with others. In both cases we have rather complex scenarios. And if one defends a multi-component account of emotions, it might very well be that the components of these emotions differ—it could be an element in a network that realizes the state, instead of the content of an individual state. This might seem like a minor point, but I think it is important. It undermines a central second part of the strategy, namely the empirical support for the theoretical distinction. Schooler needs more than a theoretical distinction (his first claim); he needs to show that this very distinction is helpful for understanding certain aspects of consciousness, mind-wandering, and other cases (his second claim; see p. 3). Otherwise the conclusion he draws, the new

methodological approach to studying consciousness, would not follow or would lose its plausibility. So undermining Schooler's second claim by showing that in the case of his examples related to emotions (as well as in case of mind-wandering) this evidence is not as clear as one might think, results in a problem for his view.

But there is another important issue here. The empirical evidence seems to be relevant to the stream of consciousness rather than to the experience versus meta-awareness of individual intentional states. The formulation of the main claims suggests that state consciousness is the issue. However, in other sections Schooler refers to the stream of consciousness (See quote above, p. 8). If this is correct, Schooler's empirical project, or more precisely the evidence he has gathered, is about a central aspect of *creature consciousness*. Philosophers distinguish creature consciousness from mental-state consciousness: the first is about a subject that is conscious (either in general or of something in particular), whereas state-consciousness is about conscious states of a creature that it is conscious. Though Schooler's project (especially claim (1)) is formulated in terms of *state consciousness*, the empirical support targets a different kind of consciousness. This also undermines Schooler's second claim by showing that the meaning of consciousness differs in claims (1) and (2). But, as I pointed out in section 1, the stream of consciousness claim would be compatible with a more functional interpretation of claim (1) as well. There is a way to revise claim (1) in a way that avoids this problem.

Using mostly the empirical evidence of mind-wandering, Schooler then suggest a bundle of criteria we might use for the third-person evaluation of what is actually going on in somebody's mind; in my analysis of his main argument this is the third step (see p. 3). These behavioral criteria include behavioral measures (eye-movements, reading comprehension, sustained attention to response) and neurocognitive criteria (ERP, fMRI, behavioral, neuroscientific, fMRI and others). His list is in the spirit of a cognitive account, and similar to others (Seth et al. 2005; Seth et al. 2008). For protagonists of non-cognitive accounts there seems

to be room for attack. But, as I have mentioned, this is not my project (see p. 2). In this commentary, I prefer to focus on conceptual issues *within* cognitive accounts, rather than the debate between cognitive vs. noncognitive accounts (See p. 2). As long as one commits to such a cognitive account, Schooler's list of criteria turns out to be very useful for our evaluation of the meta-components we need for a fined-grained understanding of reflection and re-representation. And this is the case independently of the worries I presented regarding his first two claims. However, I think there is a problem looming: Schooler is challenging both the reliability of first-person reports and the view that conscious states are accessible states. With a position that is in such sharp tension with our commonsense understanding, he needs to motivate this radical move: he needs to provide an answer to *why* we have this deep pre-theoretic entrenchment of the first-person accessibility of our own conscious states (Cohen & Dennett 2011).

5 A new taxonomy of different kinds of reflection

It's time for a positive proposal. I claimed that I would introduce suggestions for the building blocks of a new taxonomy of different kinds of reflections. As I argued, we need to further specify the kind of reflections required for Schooler's "pure experience" and for his meta-awareness, and to get a better grasp on what is meant by "taking stock" and "re-representation". I also argued that the difference between consciousness and meta-awareness should not be understood as a dichotomy. Rather, we should understand reflection itself as a hierarchical and multidimensional process. So, what exactly is the "taking stock" required for meta-awareness? According to Schooler, meta-awareness requires an explicit representation of the current contents of thought (2011, p. 321). But at least two of the terms involved in this characterization are used in several and distinct meanings: knowledge, and explicit representation.²⁰ Explicit rep-

resentation might be interpreted as being itself conscious, or as having symbolic or conceptual content. The notion of knowledge is also problematic, simply because knowledge is a factive verb. It implies that we cannot be wrong.²¹ As a result, Schooler built the impossibility of misrepresentation into his definition of meta-awareness. This might be consistent with his claim that the first-level perspective inhabits its own ontological realm. But it also creates a problem, because any view that understands introspection or reflection as an inner perception or re-representation automatically has to allow that this process can go wrong. In other words, it has to allow for misperception/misrepresentation. Moreover, Schooler himself want to allow for a certain kind of misrepresentation, in his terminology translational dissociations—cases in which at the personal level we misinterpret what we experience.

In my discussion of the distinction I claimed that we are able to rule out two kinds of reflections that are not helpful. First, categorization under concepts is one kind of meta-cognitive reflection that is itself unconscious, but necessary for conscious experience. Second, being able to distinguish between self and world is another dimension of reflection, at the highest level, that seems necessary for any conscious experience. Neither of these can be the kind of reflection that distinguishes Schooler's experience from meta-awareness. In addition I claimed that both the self-other distinction and self-awareness can happen in a number of ways. Different kinds of meta-cognition, the general ability to monitor and control one's own cognition, and the ability to attribute mental states to oneself and others, can as a result be further specified and characterized along those dimensions.

But again, what is the kind of reflection or "taking stock" required for meta-awareness? At the end of the last section I suggested that the kind of reflexion involved in "taking stock" could be characterized as a case in which the content of these states (or the states) are accessed by other states, and maybe (unconsciously) evaluated. So at issue are complex pro-

²⁰ For a more detailed discussion of the same issue see Metzinger (2013, p. 11).

²¹ Otherwise we would have a false belief, not knowledge.

cesses rather than re-accessed individual states. Such a view is compatible with certain higher-order theories of consciousness. And this would allow that misrepresentation is in fact possible. However, not only do authors like Rosenthal build several meta-representational levels into their theories, the content of the higher level thought contains an element of self, a reference to “oneself”. Self-awareness is built in the analysis, not just any kind of reflection, access, or re-representation. This interpretation uses a certain reading of creature consciousness. It requires that an organism is not only aware but also self-aware. This is a notion of creature consciousness that at first seems to be in tension with Schooler’s main distinction. However, as I argued, this is not necessarily the case. Self-awareness itself comes in degrees and varies along multiple dimensions. Creature consciousness in mind-wandering can than be understood as an intentional relation between the organism and some object or item of which it is aware, in our case a train of thoughts (and/or the sensory states associated with it). This is where the contrast between content theories and functional theories comes into play. As I have argued, pure content or representationalist theories, which claim that conscious states have their mental properties due to their representational properties, are not a good strategic partner for Schooler. In contrast, a certain class of functional accounts, especially higher-order theories, turn out to be a nice fit for his account. These accounts analyze consciousness as a certain form of self-awareness. As a result, we can grant that for the experience of mind-wandering without meta-awareness there is some self-awareness required, and for meta-awareness another more demanding kind of self-awareness is necessary. Rosenthal’s higher-order account would give Schooler this kind of distinction: meta-awareness would include a third-order state, in his terminology a re-re-representation, whereas the experience of mind-wandering would involve only a second-order state, a re-representation (see p. 10).

The literature on phenomenology offers more helpful distinctions of how we can further evaluate these different dimensions. Most of

these distinctions are orthogonal. Several authors claim that “what is likeness” comes in different forms. For example, Carruthers distinguishes the “what it’s likeness” of the world (or *worldly* subjectivity—what the *world* is like for the subject—from *experiential* subjectivity—what the *subject’s experience is like for the subject*; Carruthers 1998, 2000). Rosenthal uses a similar distinction. He distinguishes thin from thick phenomenality, whereby thin phenomenality is the occurrence of a certain qualitative character. Thick phenomenality is richer: “[t]hick phenomenality is just thin phenomenality together with there being something it’s like *for one* to have that thin phenomenality” (Rosenthal 2002, p. 657, emphasis added). So thick phenomenality includes a certain kind of reflexion or extra level; it includes an awareness of a richer kind. For Rosenthal this is identical with the existence of an appropriate higher-order representation. But it is a specific kind of meta-cognitive process, one that contains a representation of “oneself”, or in other terminology, a selfmodel (Metzinger 2003). But the selfmodel itself, our understanding of ourselves and of the difference between oneself and others, might itself come in degrees and on different levels. So the issue is not meta-cognition or reflexion in general, but different levels and involvements of self-awareness.

Instead of focusing on the differing phenomenology, one might also try to specify the notion of access in further detail (Kouider et al. 2010), a suggestion that I think helps us to better understand what is meant by states referring to other states or accessing them. In the workspace model discussion a simple distinction between cognitive access and cognitive accessibility is introduced to defend the possibility of the abovementioned third category, unaccessed but conscious states. Instead of just access vs. accessibility, I suggest that we distinguish different kinds of access (see p. 11). Rather than assuming a rich phenomenology and differing forms of consciousness, one could also propose that awareness itself might come in degrees and that something like partial awareness might exist (Kouider et al. 2010). Instead of distinguishing dissociable forms of consciousness or differ-

ent kinds of personal level phenomenal character like the above accounts, Kouider et al. (2010) use sub-personal descriptions explaining what awareness might be. More exactly, dissociable levels of access are distinguished and differentiated by a hierarchy of representational levels. In case of partial awareness, we have informational access at *some but not all representational levels*. The crucial idea is that information at other levels can remain inaccessible. Or, in some situations, information at these levels could be accessed, but plausible content is filled, which than potentially results in misrepresentation.

I prefer this line of thinking, and I believe it gives us an improved understanding of the sub-personal processes involved in the different levels of reflection and “taking stock” we want to characterize. This framework is very suitable for a revised understanding of Schooler’s main distinction. However, Kouider et al. (2010) postulate partial access as an alternative explanation for conscious visual perception,²² not for internal cases like mind-wandering. But I think the analyses might be useful for our purposes as well. According to this framework, accessible contents at each level of representation are seen as resulting from the integration of signals with contextual prior information, processes that are also influenced by other internal factors (for example attentional factors or vigilance); this integration is further assumed to be modulated by the degree of confidence of the subject. The result is a more fine-grained perspective on conscious experience; instead of simply conscious or unconscious, we can talk about different dimensions of experience. And this is done at the sub-personal level by a specification of access. This also avoids another problem. As I pointed out, Schooler’s account seems very close in spirit to modern versions of workspace accounts. However, these accounts typically assume all-or-nothing mechanisms for access. This is no prob-

lem for Schooler, who proposes his core distinction as a dichotomy. However, it is a potential problem for the revised view I suggest. But I think this can in fact be an advantage. We can indeed grant that representations *within* each level might be accessed in an all-or-nothing manner (as is assumed in workspace models), but none the less insist that the full set of all the representations associated with this process do not have to be conscious.

Different terminologies aside, I think this fits nicely with the spirit of Schooler’s general distinction, and his distinction between experience and meta-awareness. I admit that these are just first steps towards a better conceptual understanding. But interpreted this way, there is not just conscious experience of mind-wandering versus meta-awareness. The situation is more complex. Reflection comes in many forms and involves representations at many levels, as well as access at all these levels of representation. In addition, whether, and to what degree, self-awareness and a self-model is involved makes a difference as well.

6 Perceptual perspective shifting. The Analogy and the mind-body problem

Let me take stock. I have been through the claims made in Schooler’s main underlying argument (see p. 3) So far, I have discussed claim (1), the initial conceptual distinction between experiential consciousness and meta-awareness, a distinction Schooler sets up as a dichotomy. I then discussed his second claim that there is empirical evidence that this conceptual distinction is something we find in cognitive abilities in cases of dissociations, especially in temporal dissociations like mind-wandering and in emotional transitional dissociations. I then argued that his empirical criteria developed in claim (3) are useful for cognitive accounts in general, independently of the worries one might have about claims (1) and (2). Finally I suggested a finer-grained conceptual distinction between different levels of awareness, different kinds of reflection, and “taking stock”. I will turn now to the last issue we shall examine, which is Schooler’s last and main claim (see p. 3):

²² Like most authors, they focus for the most part on the discussion of conscious perception, and especially Sperling (Block this collection; Fink this collection) and Stroop’s paradigms (see Mroczko-Wąsowicz this collection) and what we can learn from them for consciousness. For a more detailed discussion of the pros and cons or an understanding of consciousness as graded within conscious perception see the debate between Cleeremans (2008), Sergent & Dehaene (2004), Seth et al. (2008), and Overgaard et al. 2006).

Schooler claims that this can be used for a new theoretical and ontological framework for studying consciousness, and this is the declared goal of the target paper. He claims that his perceptual perspective-shifting analogy, together with insights from the sections before, gives us a new ontological perspective on the mind–body problem, not just a new methodological strategy. I found this section of the paper surprising. In my opinion, it is relatively independent of the main project he undertakes. Schooler starts by describing the main thought experiments in the philosophical literature used to challenge reductive physicalism.²³ He concludes that the main problem with the reductive positions is that it needs to “reject” those aspects of first person experience “that are not readily handled by a third-person account” (Schooler [this collection](#), p. 25).

I am not convinced that this is correct. It seems a viable alternative solution to me to just subscribe to the traditional reply, and point to some kind of epistemic gap between the third-person approach and the first-person approach instead of an ontological one. One can admit that there is a gap, but it is an explanatory gap between physical processes and conscious experience. One could even state that the gap may be uncloseable in principle, but that consciousness is nonetheless physical (Levine 1983). That is, there is an epistemological gap, but no ontological gap. That we intuitively see a gap might be true; it does not follow that there actually *is* a gap in what exists. All one can conclude is that, epistemologically, there is gap. In addition, our intuitions might simply be wrong: we might be “innate dualists” and that this is the reason why to so frequently slip back in dualist talk (despite knowing better; Papineau 2011). That is the real reason why commonsense intuition pumping thought experiments work so

well. According to this view, the feeling that some part of reality is “left out”, i.e., the “explanatory gap”, arises only because we simply cannot stop ourselves thinking about the mind–brain relation in a dualist way, though this is actually the wrong thing to do. One can be a reductive physicalist without having to reject the phenomenon of conscious experience, despite the fact that we cannot (yet) reduce it or have proper explanations available as to why we experience certain phenomena the way we do. We can experience a gap, have the intuition that something is “left out”, and nonetheless that very intuition might very well be wrong. I simply do not see the need for Schooler’s solution, the postulation of a new realm, that gives rise to both the physical and subjective reality.

I am also not sure about the meaning of the perceptual perspective-shifting analogy itself. Because it rests on a purely metaphorical use of “perspective”, the analogy does not go through. Perceptual perspective-shifting happens at a personal level, moreover, shifting *experience* at the personal level. The supposedly analogous case occurs at the level of theories or accounts, which emphasize either the first- or third-person perspective. But individual experiences differ in principle from the focus certain theories have. Schooler suggests that the resolution of the conflicting perspectives lies in a meta-perspective that acknowledges the existence and irreducibility of both, even though both are somehow equally valid, such that the solution to this tension is a new realm, a meta-perspective which gives us a “higher-order outlook” (Schooler [this collection](#), p. 26). However, Schooler agrees “that [i]t is easier to recognize the need for a meta-perspective than to identify precisely what such a view might be” (Schooler [this collection](#), p. 26). He admits the character of the introduced meta-perspective is “speculative and highly underspecified” (Schooler [this collection](#), p. 28) but thinks that it has intuitive appeal. He also concedes that this is the most speculative part of the paper. I must admit that I struggle with the concept. I fail to see the intuitive appeal. Mostly because it eludes my understanding what the proposed meta-perspective might be and how it is help-

²³ However, this section of the target paper goes beyond the discussion of the well-known traditional arguments from the philosophical debate, including the explanatory gap argument, the Mary argument, and others. Schooler adds a section on the phenomenon of time experience and reductive accounts that explain time. I found the last example very inspiring, because in contrast to the other arguments it is not just based on thought experiments. However, the implications of this for my purposes here do not matter; they are used as a intuition pump to appeal to the necessity of a meta-level, so I cannot cover this aspect in this commentary.

ful despite acknowledging our commonsense intuition, not at an epistemological but an ontological level. As a result, I do not find it explanatory. Moreover, it does not follow from the analogy. For an argument by analogy one needs properties shared by both parts of the analogy. Even if we admit that in perceptual perspective-shifting both personal-level interpretations of an ambiguous figure are equally valid, it does not seem to follow that the first-person perspective and the third-person perspective in *strategies to study consciousness* require a meta-perspective not identical with either of these perspectives. Both the cases seem to have only one thing in common, “perspective shifting”. But “perspective” is used purely metaphorical in the second case. Moreover, bridging the first- and third-person perspectives seems to be an epistemic challenge. But from an epistemic observation or claim an ontological claim does not follow. Even if we admit an epistemic gap and agree that we cannot help but see an explanatory gap in all these cases, the postulation of an independent higher-order meta-level, an ontological claim, is not well supported. In addition, both of these issues, the ontological as well as the epistemological claim, differ from the methodological approach defended by Schooler. To summarize, in my opinion this section, and the preferences regarding solutions of the mind–body problem, are conceptually relatively independent from the main project, which I take to be the development of a useful strategy to study consciousness and mind-wandering. Schooler’s strategy might be helpfully independently of whether one is a reductive or non-reductive physicalist. I think that such a methodological reading of his approach strengthens the project, because it disassociates it from a completely different issue.

7 Conclusion

Having noted the initial plausibility of the general outline of Schooler’s account, I pointed out some problems and expressed some general reservations about its scope. First, I argued that the postulation of a third kind of

conscious but not accessed or reflected state is not justified. As a result, the account is too narrow, because one of the underlying general assumptions is not justified. This assumption causes a number of problems and a few misunderstandings. However, the assumption seems conceptually independent of the main project, which is to allow us to bridge the gap between first- and third-person criteria for consciousness. I suggested that the main distinction is underspecified and needs further clarifications of the elements involved: access, reportability, and levels of awareness.

Second, although it is tempting to attribute a first-order account to Schooler, a more convincing alliance would actually be certain functional accounts, especially higher-order accounts and global workspace accounts. And I argued that we should replace the introduced dichotomy by a finer-grained distinction of different kinds of meta-cognitive processes and meta-reflections in several dimensions.

In discussing support for the underlying conceptual framework, I then argued that the evidence offered is actually about complex cases. As exciting as the empirical results are, they seem not to be about individual states, but rather about the connection between many states or even the stream of consciousness. The project is about creature consciousness, not state consciousness—though the initial distinction suggests otherwise. This is the first result of my commentary.

I would suggest giving up the idea that the account offers a new meta-perspective, which for Schooler is a preferable alternative to reductive physicalist accounts. I do not think there is a need for this ontological element in his account, and it does not seem to fit with the rest of the methodological project. In addition, the claim seems independent of the rest of the project and there are reductive accounts available that fit very nicely with his project. This is the second result.

In essence I suggested a few conclusions and recommendations, mostly based on conceptual considerations, which clarify and strengthen the main project, with which I sympathize.

1. We keep many main insights of the paper:
 - a) The account is still be a cognitive account, and we allow that cognitive factors help to get a grasp on consciousness; the project is still to bridge the gap between the first- and third-person perspective.
 - b) We also keep the insight that further processing and certain kinds of further processes might either change the state itself and/or the state's content. But we acknowledge that we need to consider the embeddedness of the state to determine the experience. In other words, we focus on processes and phenomena, instead of individual states. This allows Schooler to associate his project with either a hybrid account or a version of a functional account, more specifically a workspace account or higher-order account. Which in turn helps to specify the dimensions of meta-processing in more detail and get a better grasp of the necessary conceptual clarifications. Nonetheless, we still see meta-awareness and consciousness as distinct phenomena. I take this to be the driving idea in his initial distinction.
 - c) The proposed list of potential criteria is still extremely useful, since it helps to determine these very reflective dimensions and factors, which determine both experience and the activities of the mind. For example, the behavioral criteria²⁴ will be caused by these very meta-processes, which we try to identify in more detail.
 - d) Finally, we keep the insight that factors accessible through the third-person perspective can give us insight into what is going on in the mind, as well as in conscious processes.
2. The remaining task, then, is to specify the aspects and dimensions that are relevant, and the kinds of meta-processes, access, or reflection in question. I suggested building blocks for an improved taxonomy of different kinds of reflections and "taking stock". I suggested that awareness itself might come in degrees and at different levels of representation. By

distinguishing dissociable levels of access differentiated at hierarchical representational levels, we allow for partial awareness. In effect, this allows for a fine-grained perspective on conscious experience. Instead of just unconscious, conscious, and a meta-reflective level of awareness, we have different dimensions of experience. And this is done at the sub-personal level by a specification of the term "access". But we should restrain from simply postulating a third category, namely a state that is unaccessed (or un-accessible) but conscious, thereby avoiding the problems associated with the postulation of this third category. The resulting finer-grained taxonomy allows an improved understanding of how exactly meta-awareness and conscious experience differ. Of course there is a price to pay if we accept this change of focus. While we can still claim that the criteria give an insight into what is going on *in the mind*, "the mind" includes unconscious states, conscious states, and several levels of re-representational processes.

There are a number of advantages of a view like this. First, it is not in conflict with some of the most promising candidates for philosophical theories of consciousness. Moreover, one can still account for the similarity of an unconscious state and its conscious counterpart. And third, one can keep the initial idea behind Schooler's distinction between the experienced state and a meta-reflective level of awareness of "knowing that one is in this state", but would substitute it with a finer-grained conceptual framework of multiple differences among several dimensions.

²⁴ For example in the the discussion of emotions p. 13.

References

- Baars, B. J. (1988). *A cognitive theory of consciousness*. Cambridge, UK: Cambridge University Press.
- (1996). *In the theater of consciousness: The workspace of the mind*. New York, NY: Oxford University Press.
- Bayne, T. & Montague, M. (Eds.) (2011). *Cognitive phenomenology*. New York, NY: Oxford University Press.
- Block, N. (2005). Bodily sensations as an obstacle for representationalism. In M. Aydede (Ed.) *Pain. New essays on its nature and the methodology of its study* (pp. 137-142). Cambridge, MA: MIT Press.
- (2011). Perceptual consciousness overflows cognitive access. *Trends in Cognitive Sciences*, 15 (12), 567-575. [10.1016/j.tics.2011.11.001](https://doi.org/10.1016/j.tics.2011.11.001)
- (2015). The puzzle of perceptual precision. In T. Metzinger & J. M. Windt (Eds.) *Open MIND*. Frankfurt a. M., GER: MIND Group.
- Boyd, R. (1999). Kinds, complexity and multiple realization. *Philosophical Studies*, 95 (1/2), 67-98.
- Braddon-Mitchell, D. & Jackson, F. (2007). *Philosophy of mind and cognition*. Oxford, UK: Blackwell.
- Byrne, A. (2001). Intentionalism defended. *Philosophical Review*, 110 (2), 199-240. [10.1215/00318108-110-2-199](https://doi.org/10.1215/00318108-110-2-199)
- Carruthers, P. (1998). Natural theories of consciousness. *European Journal of Philosophy*, 6 (2), 203-222. [10.1111/1468-0378.00058](https://doi.org/10.1111/1468-0378.00058)
- (2000). *Phenomenal consciousness*. Cambridge, UK: Cambridge University Press.
- (2005). Conscious experience versus conscious thought. In P. Carruthers (Ed.) *Consciousness: Essays from a higher-order perspective*. Oxford, UK: Oxford University Press.
- Carruthers, P. & Veillet, B. (2011). The case against cognitive phenomenology. In T. Bayne & M. Montague (Eds.) *Cognitive phenomenology* (pp. 35-56). New York, NY: Oxford University Press.
- Cleeremans, A. (2008). Consciousness: The radical plasticity thesis. *Frontiers in Psychology*, 168, 19-33. [10.1016/S0079-6123\(07\)68003-0](https://doi.org/10.1016/S0079-6123(07)68003-0)
- Cohen, M. A. & Dennett, D. C. (2011). Consciousness cannot be separated from function. *Trends in Cognitive Sciences*, 15 (8), 358-364. [10.1016/j.tics.2011.06.008](https://doi.org/10.1016/j.tics.2011.06.008)
- (2012). Response to Fahrenfort and Lamme: Defining reportability, accessibility and sufficiency in conscious awareness. *Trends in Cognitive Sciences*, 16 (3), 139-140. [10.1016/j.tics.2012.01.002](https://doi.org/10.1016/j.tics.2012.01.002)
- Dehaene, S., Changeux, J.-P., Nacchache, L., Sackur, J. & Sergent, C. (2006). Conscious, preconscious, and subliminal processing: A testable taxonomy. *Trends in Cognitive Sciences*, 10 (5), 204-211. [10.1016/j.tics.2006.03.007](https://doi.org/10.1016/j.tics.2006.03.007)
- Dretske, F. (1993). Conscious experience. *Mind*, 102 (406), 263-283.
- Fahrenfort, J. J. & Lamme, V. A. F. (2012). A true science of consciousness explains phenomenology. Comment on Cohen and Dennett. *Trends in Cognitive Sciences*, 16 (3), 138-139. [10.1016/j.tics.2012.01.004](https://doi.org/10.1016/j.tics.2012.01.004)
- Fink, S. B. (2015). Phenomenal precision and its possible pitfalls: A commentary on Ned Block. In T. Metzinger & J. M. Windt (Eds.) *Open MIND*. Frankfurt a. M., GER: MIND Group.
- Gennaro, R. J. (1996). *Consciousness and self-consciousness: A defense of the higher-order thought theory of consciousness*. Amsterdam, NL: John Benjamins.
- Grush, R., Jaswal, L., Knoepfler, J. & Brovold, A. (2015). Visual Adaptation to a Remapped Spectrum. In T. Metzinger & J. M. Windt (Eds.) *Open MIND* (pp. 1-16). Frankfurt a. M., GER: MIND Group.
- (2015). Visual adaptation to a remapped spectrum: Lessons for enactive theories of color perception and constancy, the effect of color on aesthetic judgments, and the memory color effect. In T. Metzinger & J. M. Windt (Eds.) *Open MIND*. Frankfurt a. M., GER: MIND Group.
- Jackendoff, R. S. (1987). *Consciousness and computational mind*. Cambridge, MA: MIT Press.
- Kouider, S., de Gardelle, V., Sackur, J. & Dupoux, E. (2010). How rich is consciousness? The partial awareness hypothesis. *Trends in Cognitive Sciences*, 14 (7), 301-307. [10.1016/j.tics.2010.04.006](https://doi.org/10.1016/j.tics.2010.04.006)
- Kouider, S., Sackur, J. & de Gardelle, V. (2012). Do we still need phenomenal consciousness? Comment on Block. *Trends in Cognitive Sciences*, 16 (3), 140-141. [10.1016/j.tics.2012.01.003](https://doi.org/10.1016/j.tics.2012.01.003)
- Kriegel, U. (2009). *Subjective consciousness: A self-representational theory*. Oxford, UK: Oxford University Press.
- Lamme, V. (2003). Why visual attention and awareness are different. *Trends in Cognitive Sciences*, 7 (1), 12-18.
- Levine, J. (1983). Materialism and qualia: The explanatory gap. *Pacific Philosophical Quarterly*, 64, 354-361.
- Lycan, W. (1996). *Consciousness and experience*. Cambridge, MA: MIT Press.

- Metzinger, T. (1995). Faster than thought: Holism, homogeneity and temporal coding. In T. Metzinger (Ed.) (pp. 425-461). Imprint Academics.
- (2003). *The self-model theory of subjectivity*. Cambridge, MA: MIT Press.
- (2013). The myth of cognitive agency: subpersonal thinking as a cyclically recurring loss of mental autonomy. *Frontiers in Psychology*, 4 (931), 1-19. [10.3389/fpsyg.2013.00931](https://doi.org/10.3389/fpsyg.2013.00931)
- Mroczko-Wąsowicz, A. (2015). What can sensorimotor enactivism learn from studies on phenomenal adaptation in atypical perceptual conditions? A commentary on Rick Grush and colleagues. In T. Metzinger & J. M. Wiandt (Eds.) *Open MIND*. Frankfurt a. M., GER: MIND Group.
- Nelkin, N. (1989). Propositional attitudes and consciousness. *Philosophy and Phenomenological Research*, 49 (3), 413-430.
- Northoff, G. (2014). *Unlocking the brain. Vol II: Consciousness*. New York, NY: Oxford University Press.
- Overgaard, M., Rote, J., Mouridsen, K. & Ramsøy, T. Z. (2006). Is conscious perception gradual or dichotomous? A comparison of report methodologies during a visual task. *Conscious Cognition*, 15 (4), 700-708.
- Overgaard, M. & Grünbaum, T. (2011). Cognitive and non-cognitive conceptions of consciousness. *Trends in Cognitive Sciences*, 16 (3), 137-137. [10.1016/j.tics.2011.12.006](https://doi.org/10.1016/j.tics.2011.12.006)
- Papineau, D. (2002). *Thinking about consciousness*. Oxford, UK: Oxford University Press.
- (2011). What exactly is the explanatory gap? *Philosophia*, 39 (1), 5-19. [10.1007/s11406-010-9273-6](https://doi.org/10.1007/s11406-010-9273-6)
- Pitt, D. (2004). The phenomenology of cognition. Or what is it like to think that P? *Philosophy and Phenomenological Research*, 69 (1), 1-36. [10.1111/j.1933-1592.2004.tb00382.x](https://doi.org/10.1111/j.1933-1592.2004.tb00382.x)
- Prinz, J. J. (2004). The fractionation of introspection. *Journal of Consciousness Studies*, 11, 40-57.
- (2012). *The conscious brain*. New York, NY: Oxford University Press.
- Robinson, W. S. (2005). Thoughts without distinctive non-imagistic phenomenology. *Philosophy and Phenomenological Research*, 70 (3), 534-561.
- Rosenthal, D. (1986). Two concepts of consciousness. *Philosophical Studies*, 49, 329-359.
- (2002). How many kinds of consciousness? *Consciousness and Cognition*, 11 (4), 653-665. [10.1016/S1053-8100\(02\)00017-X](https://doi.org/10.1016/S1053-8100(02)00017-X)
- (2005). *Consciousness and mind*. Oxford, UK: Oxford University Press.
- (2012). Higher-order awareness, misrepresentation, and function. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 367 (1594), 1424-1438. [10.1098/rstb.2011.0353](https://doi.org/10.1098/rstb.2011.0353)
- Schooler, J. W. (2002). Re-representing consciousness: Dissociations between experience and meta-consciousness. *Trends in Cognitive Sciences*, 6 (8), 339-344. [10.1016/S1364-6613\(02\)01949-6](https://doi.org/10.1016/S1364-6613(02)01949-6)
- (2013). The costs and benefits of mind-wandering: A review. *Canadian Journal of Experimental Psychology*, 67 (1), 11-18. [10.1037/a0031569](https://doi.org/10.1037/a0031569)
- (2015). Bridging the objective/subjective divide: Towards a meta-perspective of science and experience. In T. Metzinger & J. M. Windt (Eds.) *Open MIND*. Frankfurt a. M., GER: MIND Group.
- Schooler, J. W., Smallwood, J., Christoff, K., Handy, T. C., Reichle, E. D. & Sayette, M. A. (2011). Meta-awareness, perceptual decoupling and the wandering mind. *Trends in Cognitive Sciences*, 7 (15), 319-326.
- Sergent, C. & Dehaene, S. (2004). Is consciousness a gradual phenomenon? Evidence for an all-or-none bifurcation during the attentional blink. *Psychological Science*, 15 (11), 720-728. [10.1111/j.0956-7976.2004.00748.x](https://doi.org/10.1111/j.0956-7976.2004.00748.x)
- Seth, A. K., Baars, B. J. & Edelman, D. B. (2005). Criteria for consciousness in humans and other mammals. *Consciousness and Cognition*, 14 (1), 119-139. [10.1016/j.concog.2004.08.006](https://doi.org/10.1016/j.concog.2004.08.006)
- Seth, A. K., Dienes, Z., Cleeremans, A., Overgaard, M. & Pessoa, L. (2008). Measuring consciousness: Relating behavioural and neurophysiological approaches. *Trends in Cognitive Sciences*, 12 (8), 314-321. [10.1016/j.tics.2008.04.008](https://doi.org/10.1016/j.tics.2008.04.008)
- Siegel, S. (2005). Which properties are represented in perception? In T. Gendler & J. Hawthorne (Eds.) *Perceptual Experience* (pp. 481-503). Oxford, UK: Oxford University Press.
- Siewert, C. (1998). *The significance of consciousness*. Princeton, NJ: Princeton University Press.
- Tye, M. (1995). *Ten problems of consciousness*. Cambridge, MA: MIT Press.
- Tye, M. & Wright, B. (2011). Is there a phenomenology of thought? In T. Bayne & M. Montague (Eds.) *Cognitive Phenomenology* (pp. 326-344). New York, NY: Oxford University Press.
- Van Gulick, R. (2000). Inward and upward: Reflection, introspection, and self-awareness. *Philosophical Topics*, 28 (2), 275-305.