**Introspection, Anton’s Syndrome, and Human Echolocation**

INTRODUCTION

It is widely thought that introspection confers privileged access to one’s own mind, at least when it comes to current conscious experience. Of course, many are willing to grant that we often lack self-knowledge in various ways in light of unconscious causes of our judgments, and hidden factors that can influence attitudes, preferences and behavior (Wilson, 2002). People are deluded and either can’t or won’t see themselves realistically. Perhaps there are even benefits attendant to believing oneself nicer, less biased, smarter, more attractive, and competent than one really is (Taylor and Brown 1988, 1994). Despite this pessimistic turn, matters are thought to be different for knowing “what it is like” at any given moment. No hidden biases or self-deceptions can mask my current and ongoing conscious contents from myself—If I am in pain, I know it. If am seeing red, I know it. And so on. Although my self-ignorance might cast a deep shadow, I am still sovereign about my own first-hand phenomenal appearances, or so goes the prevailing orthodoxy. However, some philosophers have been turning against this near consensus (Bramble 2013; Churchland 2002; Haybron 2008; Lloyd 1989; Schwitzgebel 2008; Smuts 2010).[[1]](#footnote-1)

Introspection and epistemic privilege can be understood in different ways, though my focus is on judgments about what it is like at any given moment, that is judgments about phenomenal consciousness. Views on the epistemic privilege of introspection can range from perfection and incapacity of error, all the way down to being highly or even completely unreliable. For convenience I will draw on Schwitzgebel’s (2008) nomenclature in order to locate some useful points on the spectrum of philosophical possibilities.

One tradition, *Infallibilism*, takes first-person epistemic privilege to mean we are incapable of error as to how things seem when it comes to current conscious contents. Though once associated with dualistic theories, it continues to attract defenders, and recent incarnations are typically compatible with physicalism. Rather than attributing nonnatural characteristics to mind, physicalist Infalliblists emphasize the logical or conceptual containment of phenomenal contents within introspective judgment (Gertler 2001; Horgan *et al*. 2006; Jackson 1973; Tye 2009). Meanwhile, *Fallibilism* denies Infallibilism—Fallibilism is attractive to those who think that the linkage between conscious contents and introspective judgment is contingent, and therefore susceptible to error, though failure may be unusual and infrequent. Now let *Reliabilism* be the variety of Fallibilism maintaining that although we can be mistaken about our current states of consciousness, this is only when conditions are unfavorable. When conditions are favorable, then, Reliabilism contends, conscious introspection is either Infallible, or at least highly unlikely to produce error (Armstrong 1963; Davidson 1984; Goldman 2006; Hill 1993). Unfavorable conditions may include “when we are distracted, or passionate, or inattentive, or self-deceived, pathologically deluded, or when we’re reflecting about minor matters, or about the past, or only for a moment, or where fine discrimination is required” (Schwitzgebel 2008: 247). Reliablism is probably the dominant view in light of the influence of mechanistic thinking about mental processes. Mechanisms are always susceptible to breakdown, at least in principle. Perhaps so it goes for the contingent, causal, relationships between states of consciousness and introspective judgment (Hill, 1993).

Next call *Skepticism* about conscious introspection the view denying both Fallibilism and Reliabilism, that is, the view that “We have no reliable means of learning about our own ongoing conscious experience, our current imagery, our inward sensation—we are as in the dark about that as about anything else, perhaps even more in the dark” (Schwitzgebel 2008: 246). Skepticism comes in varying degrees, from denying that introspection is reliable at all to a somewhat milder variety claiming that it often results in error. Schwitzgebel defends the latter view, namely that introspection is “highly untrustworthy” (2008: 246) as “[w]e are both ignorant and prone to error…and we make gross, enduring mistakes about even the most basic features of our currently ongoing conscious experience” (2008: 247). Others contending (in varying degrees) that we mistakenly think we experience more than we do include Blackmore (2002), Churchland, P.M. (1988), Churchland, P.S. (2002), Clark (2002), Dennett (1991, 2002), and Kornblith (1998).

The manifest image—the framework by which we interpret other people as rational, conscious, and free is under attack on multiple fronts. Work in philosophy complements ongoing research in psychology on introspective error, the unconscious mind, and self-deception. Philosophers show an increasing and vigorous interest in such topics as positive illusions, implicit bias, epistemic injustice, and Alief and Belief. Related to these projects is experimental philosophy’s critique of philosophical intuition. Skepticism about conscious introspection is part of a broader assault on the manifest image.

While some arguments about introspection are *a priori* or turn on intuitions (either folk or expert), this paper responds to a skepticism drawing on two examples from empirical psychology, one pathological, the other non-pathological. The pathological case, Anton’s syndrome, involves confabulatory denial of blindness, and is used by some to argue that detailed and ongoing introspective report can be completely dissociated from conscious experience. There seem to be people who are blind, but don’t know it. Meanwhile, there is the non-pathological case of people who echolocate, but don’t know it. A related phenomenon, known as “facial vision,” seems to indicate that people can also confuse one sensory modality (audition) for another (haptic experience). These odd examples have been used to argue that profound introspective error can occur even in the considered judgments of healthy and attentive individuals.

My reason for reexamining these particular examples in depth is because they present especially interesting and unusual challenges to introspective privilege. Other examples of alleged introspective failure are fairly easy to dismiss, even for Infallibilists. Churchland, for example, mentions sexual repression, phantom limbs, confusing heat and cold, thinking you heard a sound, not knowing if you need to use the restroom, and confusions between taste and smell (2002: 119ff.). While each of these undoubtedly involves malfunctioning self-diagnosis in some sense, none strongly suggest that we can be mistaken about what Churchland calls “discriminable simples,” such as seeing a color, or the mere fact that one’s experience is visual rather than auditory. In all of these cases, it seems plausible that either introspection is totally accurate about discriminable simples, or, the error is about a complex attitude (or both). For example, misinterpreting one’s romantic feelings might be best explained in terms of a conflict between attraction and repulsion, rather than error about perceptual consciousness (Churchland, grudgingly, seems to agree, 2002: 120).

Anton’s syndrome is a much more striking example. It is also seldom discussed. As for human echolocation, philosophers have generally paid less attention to senses other than vision. Utilizing these examples to reappraise widely held views on the well-worn topic of introspection feels intriguing and fresh. Despite the seriousness of the challenge they pose, they have largely escaped the notice of philosophical work on introspection, save for those who have used them to advance a skeptical agenda. This paper aims to correct that imbalance. Certainly it is worthwhile to push ourselves, interrogating a possible dogma. But I will argue that neither example should trouble the Reliabilist, or even the Infallibilist.

Before continuing, a remark about my broader outlook is in order. While I share enthusiasm for philosophy that is empirically informed, I worry that the skeptical turn against self-knowledge has been somewhat overplayed and may even have pernicious social and ethical consequences. A notorious precedent is the paralytic curare, once mistaken for an anesthetic; this was despite the protests of the patients who claimed to be fully aware and in agony during surgery (Dennett 1978: 209). Sometimes, though perhaps not often enough, conventional opinion is right. In the least, the burden for overturning the default assumption that persons possess authoritative self-knowledge should be set very high indeed.

The next two sections describe and assess the significance of Anton’s syndrome, and later, facial vision, to conscious introspection. Following that comes a brief conclusion.

ANTON’S SYNDROME

Pathological failures of conscious introspection might be thought to be relatively uninteresting since they are compatible with the dominant view, Reliabilism. Pathologies are paradigm instances of a breach in normal conditions. However, I think it is a mistake for the Reliabilist to make concessions without dispute. If it turns out that a supposedly pathological case of introspective failure is not so obvious, this helps shift the burden of proof back onto the “firebrand” skeptic (Schwitzgebel 2008: 248) who wishes to pursue epistemic privilege into its “last refuge” (245). If the easy cases are not so easy, then more controversial cases will demand higher standards of argumentation. No ground should be conceded to the Skeptic without contest. Another reason to dispute examples of pathological failure is on behalf of the Infallibilist. So my task in the present section is to offer grounds for thinking that Anton’s syndrome is no worry for either Reliabilism or Infallibilism.

 Anton’s syndrome was first utilized in recent philosophy of mind, along with several other “denormalizing” facts, by Patricia S. Churchland (1988) in order to undermine folk conceptions of consciousness. Churchland gives it a central role in arguing against the assumption that there is special introspective access. In effect, she argues that Infallibilism is mistaken since we are not always aware of our own visual experiences. Patients suffering from Anton’s syndrome (also known as “blindness denial”), though (cortically) blind, will nevertheless insist that they can see, offering fictitious descriptions of their surroundings. If people can be blind, but not know it, then perhaps introspection is not so reliable and is certainly not infallible, even when it comes to perceptual simples, such as colors and shapes. Though pathological, such a profound failure of introspective knowledge is also a nuisance to the Reliabilist, for perhaps there are other, non-pathological, failures to be accounted for. Anton’s might set a worrying precedent (Metzinger 2003: 234ff) and yet there is scant mention of it in the philosophical literature, including that critical of Churchland.[[2]](#footnote-2)

One response, offered by Goldman (1998: 115), is that Churchland provides no evidence ordinary people are committed to Infallibilism. He would say that folk opinion is only committed to Reliabilism in that one “usually” and “normally” has “privileged access” to one’s own states of mind, though this is not “perfectly reliable” (119). In short, although Goldman concludes Churchland’s perspective lacks empirical support, he would appear to agree that introspective authority fails under certain pathological circumstances.[[3]](#footnote-3)

Although it may appear Anton’s syndrome serves as strong evidence against, in the least, Infallibilism, my contention is that this is not so. This is because the apparent dissociation between what a patient believes and what she experiences may be merely apparent. There are two plausible options open for the anti-Skeptic. Perhaps the verbal reports are not sincere expressions of what it is like. There is, in fact, good reason to suspect at least some reports should not be taken at face value. Alternatively, perhaps there is no dissociation, since the reports are sincere and correct expressions of hallucinations that have been mistaken for perceptual experiences. These explanations probably best account for the patients’ reports.

To sort this out we need to take a closer, more careful, look at the putative destabilizing fact. Can the reports of visual experience be distanced from what the patient introspectively knows she is experiencing? In other words, might a patient not really believe it when says she sees a book with a brown cover (when there is no book)? Since her claim to possess sight persists in the face of strong evidence, such as collisions with furniture and walls, perhaps this seems unlikely.

Might she then be hallucinating? Philosophers have occasionally suggested this must be what is going on (e.g. “no one claims patients are not having a visual experience of some sort,” Hardcastle, 1997: 394). Churchland (2002: 122), however, thinks not on the grounds that the brain damage responsible for the blindness also destroys the areas responsible for visual imagery. Macpherson (2010) adds several further reasons for doubting such patients undergo hallucinations. Other blind persons are aware they are only hallucinating, such as those with Charles Bonnet syndrome. They undergo especially vivid experiences, and yet these are not confused with perceptions. The Charles Bonnet patients cannot control their experiences, so this is not why they know they are only imaginary. Meanwhile an Anton’s patient cannot provide the kinds of details one would expect from a person having a visual experience, such as whether somebody is wearing glasses or not. Finally, the reports change from moment to moment and are influenced by external factors (such as when hearing metallic snipping suddenly provokes a report about seeing scissors). Macpherson (2010: 17) notes how bizarre it would be if a questioner intentionally provoked contradictory imagery, such as commenting on his baldness one moment, and his desire for a dye-job the next. That such dramatic changes would pass unnoticed suggests to Macpherson that they are not hallucinating. Rather, she sides with Churchland in concluding that they are judging themselves as being in conscious states that are, in fact, non-existent.

My view differs. Visual imagery and hallucinations can be unstable, unwilled, influenced by endogenous factors, indistinct, fleeting, and difficult to manipulate and describe. Further, Macpherson may be overestimating the degree of instability patients will tolerate. Her example about the baldness/dye job is a philosopher’s fiction. There’s nothing in the published interviews indicating that an Anton’s patient would go along with fantastic or contradictory suggestions. Also, some reports may be less bizarre than they first seem, such as the one about the sudden appearance of the scissors. The patient in question repeatedly characterized her vision as very poor (Goldenberg 1995: 1377, 1379). So, rather than appearing out of thin air, why couldn’t their removal from a pocket have simply gone unnoticed? Perhaps Anton’s syndrome exacerbates the change and inattentional blindness that confers a degree of instability and inconsistency on normal vision.[[4]](#footnote-4)

 Supposing there were some cases in which she is willing to offer blatantly incoherent testimony, does a failure to notice this indicate that the patient is not hallucinating? I do not see why. What is odd is that she does not notice her *testimony* is irrational and unstable. Shouldn’t she notice this whether or not she is having conscious experiences? Macpherson (2010: 17) offers that the confabulation is not under the patient’s control. While this is plausible, it undercuts her view. Whatever prevents the patient from noticing instability in her self-reports could be the very same thing causing her not to notice instability in her hallucinating—such as, short-term memory loss, which often accompanies Anton’s syndrome (Brazis *et al.* 2007:483; Forde and Wallesch 2003: 211).

Many researchers, contra Churchland, support the hypothesis that there can be sufficient activity in residual cortical neurons to support visual imagery; indeed, several patients are known to have no difficulties with imagery related tasks (Goldenberg 1995: 1380; Forde and Wallesch 2003: 215). But while to assume all Anton’s patients are consciously experiencing what they report would save the Reliabilist from embarrassment (and the Infallibilist from defeat), this is not clinching, since at least some do have imagery-related deficits. Counterexamples can be rare, after all. The hallucination hypothesis is not wholly satisfying for another reason, namely that it fails to explain why patients resist compelling evidence that they are blind—such mulishness is not typical of persons undergoing hallucination.

Therefore, turn to consider whether their reports are always trustworthy guides to what they believe about their experiences. In her review of Hirstein’s (2005) work on confabulation, Langdon (2009) mentions patients may indicate some awareness since they often disown their judgments in response to probing questions. Langdon explains:

If they are wrong, and they are challenged on their mistake, they will also typically accept that they have made a mistake, which, in itself, is quite intriguing and might indicate a degree of implicit knowledge, and will confabulate some excuse—e.g. they might blame the poor lighting in their room or their need for a new pair of glasses. They will not, however, readily give up the idea that they are not blind (Langton 2009: 786).

Does this mean they do not fully accept their own statements about how things seem? Perhaps this is not obvious. Certainly, it could be reasonable for a person experiencing low quality hallucinations to revise her judgment when challenged. The patient in Macpherson’s example (HS) who said she could see “little, only contours” and “very weakly” may have been only indicating a lack of confidence, rather than insincerity. When asked to explain, she said her imagery was “vague…somehow farther away, blurred” (Goldenberg 1995: 1377, 1378). Nevertheless, HS insisted she was really seeing and not just imagining. Goldenberg points out it is implausible that someone would draw attention to abnormalities in her visual experience if she was only trying to conceal her blindness.

However, other patients do not fit this characterization, such as the one who “adamantly denied any visual problems,” instead offering irrational excuses (Benson 1994: 87). While stubborn over-confidence is logically consistent with vivid hallucination, given that this kind of patient will nevertheless also readily make concessions, it seems plausible that they have some awareness of their blindness. This account also has the virtue of making up for the weaknesses of the hallucination hypothesis.

Actually, there are doubts as to whether “Anton’s” describes a single condition, and so either hypothesis could be called on depending on the specific nature of the deficit. Lacking awareness of one’s blindness seems to occur somewhat independently of an indifference to one’s blindness (Forde and Wallesch 2003: 217). So, out of a group characterized as sufferers of “Anton’s,” it seems that while some are confused about the internal source of genuine visual imagery, others may lack imagery of any sort. Whether there are any cases of confabulatory denial in which *both* imagery and implicit awareness can be confidently ruled out remains to be seen (Forde and Wallesch 2003: 217).

 This result, though somewhat inconclusive, is consilient with the present state of empirical inquiry, and provides comfort to both the Reliabilist and even the Infallibilist. If some Anton’s syndrome patients insincerely make their confabulatory reports while others misidentify imagery produced by remnants of visual cortex, then these pathologies maynot provide a *single* instanceof introspective error. This is obviously not to claim there are no examples of introspective failure anywhere, but the Reliabilist can be forgiven for feeling confident.

FACIAL VISION

Next I consider whether “facial vision” motivates skepticism about the special epistemic status of conscious introspection. This was probably first suggested by Lloyd (1989: 183) although I will focus on the detailed case argued by Schwitzgebel (2011) and Schwitzgebel and Gordon (2000). They contend it shows “normal people in normal circumstances can be grossly and systematically mistaken about their own current conscious experience” (2000: 235). Schwitzgebel and Gordon begin by observing that typical examples of introspective failure are “marginal or pathological” (2000: 240). Elsewhere, Schwitzgebel adds that the challenges are typically “far-fetched scenarios, pathological cases, or very minor or very brief mistakes” (Schwitzgebel 2010). Schwitzgebel and Gordon find this line of argumentation underwhelming since it is open to the reply that conscious introspection is nevertheless highly reliable, or perhaps even infallible, when conditions are “normal,” that is, most of the time in everyday life, for an ordinary person who is attentive and unhurried. Against this, they claim that everyday people “are seriously mistaken” when it comes to “a significant aspect of our daily experience,” namely, human echolocation regarding which our awareness is “very poor” and “pervasively mistaken” (Schwitzgebel and Gordon 2000: 244).

Though unfamiliar to many, they claim we echolocate frequently and often confuse it with fictitious haptic experiences, sometimes referred to as “facial vision.” These errors are so serious that, when considered alongside the standard arguments against Reliabilism, Schwitzgebel and Gordon are led to provocatively conclude: “we hardly even know what it is like to be ourselves” (2000: 244). This would appear to be a stunning failure of first-person epistemic authority. But let us not embrace this conclusion with undue haste.

 After explaining Schwitzgebel and Gordon’s case for skepticism, I will turn to examine the empirical details and consider the philosophical implications. My assessment is that Schwitzgebel and Gordon’s argument commits errors of reasoning, overlooks crucial empirical results, and fails to consider the best explanation. On the contrary, echolocation and facial vision pose no threat to the epistemic privilege of conscious introspection.

Despite my critique, I find the ingenuity and boldness of their challenge to be worth engaging. Comfortable orthodoxy needs to be shaken up once in a while, and even if it perseveres, it can be reassuring to know that it is not mere dogma. But before continuing, a little background is provided.

In the 18th Century it was noticed that some blind people appeared to have an uncanny awareness of objects at a distance. Sensitivity to minute changes in air pressure was widely believed to account for this ability, with Levy dubbing the phenomenon *perceptio facialis* (Weiner *et al.* 2010: 128). Others, however, such as Villey, himself blind since an early age, maintained that obstacle perception by the blind was “simply the sense of hearing” (1914: 111). In 1893 Dressler found that by covering subjects’ faces and stopping up their ears blind navigators were actually relying on sound (Griffin 1958: 302; Weiner *et al*. 2010: 129). Notwithstanding these early efforts, the matter remained unsettled and the next fifty years witnessed much speculation, until the issue was put to rest in the 1940s and 50s by Dallenbach, and his students. They conclusively demonstrated that blind object detection depended on the availability of echoes (Supa *et al*. 1944, Worchel and Dallenbach 1947, Ammons *et al*. 1953). Subsequent experiments corroborated and expanded on their findings (Strelow and Brabyn 1982, Ashmead *et al*. 1989, Stoffregen and Pittenger 1995). Humans have an impressive capacityto echolocate and can even make determinations about the physical characteristics of targets, “e.g. size, shape, texture, distance” (Schwitzgebel and Gordon 2000: 239), though, for most, these abilities are (at best) crude and require special training (Supa *et al.* 1944, Ammons *et al.* 1953).

With this background in place, consider Schwitzgebel and Gordon’s argument:

Premise 1: Humans echolocate under normal conditions.

Premise 2: There is something that it is like to echolocate.

Premise 3: Both experts and ordinary persons under normal conditions are often grossly mistaken, insofar as they do not realize that they are echolocating.

Premise 4: here-and-now conscious introspection is unreliable if people can be grossly mistaken about what it is like under normal conditions.

Conclusion: So, here-and-now conscious introspection under normal conditions is not reliable.

For brevity and to maximize impact, my analysis will focus on the second and third premises. However, a few words about the others are called for.

The first premise is somewhat plausible, though more could be said, such as what is meant by “normal conditions.” The premise also rests on the definition of echolocation, for which we should adopt Schwitzgebel’s revision offered in his (2011: 58).[[5]](#footnote-5) Note that high-precision echolocating is rare. Some researchers even forego talk of echolocation, instead adopting phrases like “spatial hearing” and “auditory space perception” to describe sensitivity to subtle changes in the ambient sound field (Ashmead *et al.* 1998). Many settings contain usable acoustic information in the form of low-frequency sound that accumulates near walls, though there is no comparison made between emitted and reflected sound. Despite the fact that the sense in which most humans echolocate in their daily lives is impoverished (perhaps severely given spatial hearing) there is probably some truth to the claim that human echolocation is normal.

Meanwhile, the fourth premise claims that being “grossly” mistaken about one’s conscious states implies introspection is unreliable in everyday life. Though “gross and pervasive error” (Schwitzgebel and Gordon 2000: 239) about “the experience itself” (2000: 242) is not explicitly defined, they appear to have in mind instances in which one fails to notice an experience (confusion between sound and touch is another type of error). One can quibble with this premise—perhaps errors are uncommon and introspection on the whole is highly reliable.[[6]](#footnote-6) However, as I believe that we are not grossly mistaken about echolocation, I grant the fourth premise for the sake of argument in order to focus my energies elsewhere.

Turing to the second premise, it contends that there is something it is like to echolocate. Certainly, echolocation can be consciously experienced, but not always, for like spatial hearing it can also function unconsciously. This is unsurprising given that perception-action abilities often outstrip conscious awareness.Spatial hearing depends on variations in the ambient soundscape in the very low frequency part of the spectrum that are not always accessible to consciousness. Ashmead *et al*. (1998) even propose that this might help explain “facial vision,” insofar as subjects find themselves detecting obstacles, but can’t understand how they do it. Likewise, it has been noted that echolocation often seems to transpire unconsciously (perhaps starting with Juurmaa, 1970). Experimental work suggests subjects can process echoes they are unaware of while making auditory spatial judgments (Dufour, 2005). There is also the “echo suppression” effect, whereby reflected sound cannot be distinguished from direct sound (Litovsky *et al*. 1999; Clifton *et al.* 2002).[[7]](#footnote-7) Perhaps I have no reason to think my footsteps are indicating anything about the spatial environment if their sound is neatly meshing with, and camouflaging, echoes. The auditory system may even be designed to “tune out” echoes to some extent (Clifton and Freyman 1997). Remarkably, echolocating subjects are sensitive to delays between pulses and echoes at least *fifty* times shorter than those accessible in consciousness (Stoffregen and Pittenger 1995: 189). While these phenomena predict people will make various kinds of false judgments about their perceptual abilities, there is no evidence of introspective error about current conscious contents to be found here.

We are “rarely aware” of echos as they are typically faint and brief; “conscious awareness is not a prerequisite” and “we may engage in echolocation on a regular basis without having any conscious awareness that we are doing so” (Stoffregen and Pittenger 1995: 183; see also Rosenblum *et al.* 2000: 202). However, it’s plausible that people could sometimes utilize auditory signals unconsciously to guide action. Of course, I am not saying echolocation is always unconscious. But echoes may often only be accessible with effort. If the sound properties in question often lie near the threshold of consciousness, then this would help explain why there is so much diversity in the self-reports when it comes to echolocation.

Hence, the second premise is true only if it is interpreted to mean that *sometimes* there is something that it is like to echolocate, and sometimes there is not. Yet this is hostile to Schwitzgebel and Gordon’s inference since even if it is *often* or *typically* conscious, failures to report echolocating might occur at just those times when it is transpiring unconsciously.

Perhaps realizing this, Schwitzgebel and Gordon dismiss the suggestion that echolocation occurs unconsciously by appealing to both empirical and philosophical considerations. However, these arguments are completely unpersuasive. Their empirical reply is that to assume echolocation is unconscious commits one to a scientifically implausible model about sensory perception, namely, one committed to “raw” sense data and so incompatible with the loop-like architecture of the brain (2000: 242).[[8]](#footnote-8) The reply to this point is straightforward: unconscious perception and action are compatible with such models. As there is some ambiguity in Schwitzgebel and Gordon’s discussion, however, clarification is in order.

Schwitzgebel and Gordon (2000: 242) appear to take resistance to premise two to assume that sometimes we consciously hear echoes only as “raw noise.” So, they take the objection to be that persons fail to judge that they are echolocating despite knowing what those sounds are like. Their reply is that this suggestion is incompatible with the feedback loops that structure perceptual processing. But two responses can be given. First, and as just argued, perhaps people are not experiencing noises *at all* when they echolocate, since unconscious perceptions are compatible with the required looping architecture. Another possibility is that people are consciously experiencing sound, but as *non-echoic*, perhaps as a footstep(recall the phenomenon of echo suppression).[[9]](#footnote-9) In this case it would not be heard as raw sound either, as there would still be interplay between bottom-up and top-down representations. Regardless of whether the echo is perceived consciously or unconsciously, there need be no consciousness of echolocation as such, nor any confusion between the senses.

The philosophical objection to unconscious echolocation is more interesting. Here they offer a dilemma. Since only some subjects deny an experience of echolocation, somebody must be wrong. So it’s either that those who deny the experience are in error, or, the mistake lies with those who claim to have the experience. Either way, for a large number of people, introspection is not reliable (Schwitzgebel and Gordon 2000: 242).

However, this conclusion is hastily drawn. Why can’t both kinds of subjects be right? Why assume that there is only one kind of fact about introspective awareness and echolocation? Schwitzgebel and Gordon (2000: 243) suggest this could only be so given dramatic neurological variation between subjects. However, small individual differences under differing stimulus conditions could account for a diversity of experiences. Given mild human variability, it is not surprising that similar stimuli might fall above or below consciousness depending on the individual. Still others may be in conditions favorable to experiencing echo suppression, but not everyone. In short, if echolocation comes in conscious and unconscious forms, there is no reason to expect subjects’ reports to be homogenous. It seems more likely that some really do experience sounds, whereas for others there is nothing to notice.

As a final gambit to save the second premise, I suppose Schwitzgebel and Gordon could try to argue that it begs the question to assume a failure to report echolocation indicates an absence of consciousness. If people change their minds, and their experience hasn’t changed, then doesn’t it follow that introspection is not reliable? But why think their experience hasn’t changed? Echolocation is either sometimes unconscious or it never is. If it is, then what would lead one to think there is introspective error when people fail to report it? It is because people can be persuaded that they are echolocating by bringing certain third-person facts about their discriminatory abilities to light. Yet as we have just seen, becoming knowledgeable about third-person discriminatory abilities does not always lead people to revise their first-person phenomenological judgments. The parsimonious explanation of the difference is that perception outstrips conscious awareness, for otherwise we must posit phenomenal qualities where nobody has any inclination to say that it is like something. This is highly implausible for a wide variety of cases (e.g. blindsight, the vomeronasal organ, etc…). It seems hard to avoid the conclusion that an important way we know whether there is something it is like for somebody is because they tell us! So, if we know others are conscious, then verbal report must be somewhat reliable.

To avoid this result they could instead revise their argument by taking up the view that people are rarely or never conscious. In this case verbal report would still be massively unreliable. Schwitzgebel and Gordon even welcome such an outcome because it would prove their “ultimate point” that conscious introspection is often “vastly wrong” (Schwitzgebel and Gordon, 2000: 238). But why believe it? If the alternatives are the view that all perception is conscious, or, eliminativism (and, in both cases, profound introspective error), then why not just stick with the claim that sometimes people echolocate consciously and sometimes unconsciously?

 This brings me to my response to their third premise—if some persons are echolocating (or spatially hearing) unconsciously, and others consciously, then it does not follow that introspective reports are riddled with error just because they do not all agree. Recall their third premise states that both experts and ordinary folks are often “grossly mistaken” (Schwitzgebel and Gordon 2000: 238) in that they fail to realize when they are actively echolocating. Experienced blind echolocators commonly mistake their ability for “facial vision” even after being instructed to attend carefully to their experience. Only after many trials with and without the ability to hear were subjects convinced there was no h­­­­aptic experience. Rosenblum *et al.* (2000) reports similar findings for sighted persons tested while blindfolded. Subjects had “little insight” into their auditive abilities when judging the distance to a wall. Though it will take some explaining, I doubt there is any error in introspective judgments about current consciousness.

Schwitzgebel and Gordon (2000: 243) consider whether it could it really be that some experience nothing, others pressure on the face, others sounds, with some hearing echoes, but others not, and everybody is right. They find this to be unlikely for it would mean that echolocation often, but only sometimes, results in a form of synesthesia. If auditory stimuli sometimes produce haptic experiences, then this is the replacement of one experiential modality for another in otherwise ordinary persons (along the lines suggested by O’Regan and Noë 2001: 958-9). Schwitzgebel and Gordon find this to be a strange and extravagant suggestion just to save Reliablism. Synesthesia is thought to be quite rare. Moreover, synesthesias tend to persist throughout one’s life and are presumed to have a basis in significant neurophysiological differences, such as unusually dense connectivity between synesthetically related regions of sensory cortex (Maurer 1993). This seems at odds with the fact that subjects will change their minds as a result of their brief participation in echolocation experiments. It is unheard of for synesthetic modality switching (not to say massive changes in neural connectivity) to rapidly occur just because somebody walked around with a blindfold for a few hours. Besides that, there is the fact that some subjects retroactively judge that they had been mistaken about facial vision. All of this makes it doubtful synesthesia plays any explanatory role.

However, the Reliablist has no need for exotic remedies such as synesthesia. Subjects who “changed their minds” were probably confused about what they were being asked about. The teams in the 1940s and 50s did not appear to clearly distinguish between asking participants about their obstacle detection abilities versus their phenomenology absent object detection. Only the latter concerns the reliability of conscious introspection. (Besides, if people are not reliable introspectors, then they can be more easily prompted or buffaloed by researchers.) Perhaps they were echolocating unconsciously and gradually accepted third-person evidence about the auditory basis of their ability. This is despite the absence of phenomenological grounds for believing this (perhaps they later begin to consciously notice the echoes). Hence, this subject changes her mind, but there is no phenomenological error.

Participant confusion might explain other examples of supposed introspective failure, such as when subjects are allegedly mistaken about the extremely narrow region of high-acuity vision (Schwitzgebel 2008). Perhaps when asked “How much detail is available in your field of view?” people correctly report on the phenomenology that comes from the *combination* of high acuity foveal vision with rapid saccades and short term memory (or perhaps their *access* to details in the world as O’Regan and Noë 2001, Noë 2002 would put it).[[10]](#footnote-10)

Although these remarks on behalf of the Reliabilist help account for variations in the phenomenological reports, there is a puzzle remaining. Schwitzgebel and Gordon’s proposal is that subjects are simply in error as concerns their true experiential status. But even if heterogeneous experience failed to explain heterogeneity in the subjects’ reports, why should “error” be any more illuminating? How would error explain the specific manner in which the reports are heterogeneous? Schwitzgebel and Gordon do not have much to say on this, save for connecting their argument to general worries about the “vast and frequent mistakes” (2000: 244) people make in their self-assessments. But this is not satisfying. If people are just *guessing* then we should not expect such *consistency* in their errors. What I mean is, why should people exhibit a pattern for mistaking sound specifically for *facial pressure*, as opposed to some other type of experience? This curious aspect of human echolocation cuts across the issue of introspective error. For even if there is no error, there is still the question as to why these odd haptic experiences occur.

Could expectations—another example of top-down processes “infecting” perception—play a role, as when anticipating seeing a friend can lead you to misidentify a stranger? Schwitzgebel and Gordon think not, as there is little reason to believe expectations can transform auditory stimuli into haptic experiences. Yet we need only assume that auditory perceptions *causally trigger* haptic experiences (non-synesthetically) much as hearing somebody shout, “Look out!” might cause people to flinch and undergo haptic experiences. But is it plausible that many echolocators are forming intense expectations about pressure on the face? It’s not altogether far-fetched. Juurmaa and Soili (1965) reasoned that since your head is likely to be injured, a certain amount of tension might be generated in anticipation of hitting a wall. This is similar to Dolanski’s theory (see Supa *et al* 1944: 138) that any sensory cue signifying an obstacle would result in slight contractions of the facial muscles, with the crucial difference that whereas Dolanski thought he had explained the basis of genuine haptic perception, Juurmaa only proposed that muscle spasms accounted for subjective feeling. Kohler (1964) also found echolocators experienced facial pressure (contralaterally to the source of sound) even when the face was anesthesized. There doesn’t seem to be a lot of recent work on this, but unlike synesthesia it is not an extravagant hypothesis. Perhaps associative learning could provide a basis for some individuals to noticeably tense up once they have perceived (either consciously or unconsciously) that they are about to impact something big and solid. This may help explain why the reports do not randomly attribute sensory modalities, but show a bias towards the haptic.

On the other hand, this conjecture is inconsistent with other findings. A remarkable drop in reports of facial vision seems to coincide with the better controlled experiments conducted in the mid-20th century. One of Supa *et al.*’s subjects (ES) changed his mind about facial vision only after he was put under a veil that eliminated air currents (Supa *et al*: 164)—one would think this would *raise* a subject’s expectation of collision. Making sense of these points might require positing other sources of genuine haptic experience.

Why a “confabulation of something new” caused by “stimulation of the cochlea” (Schwitzgebel and Gordon 2000: 241, also 242, 243) should so often take the form of a particular type of haptic experience is suspicious and peculiar. Perhaps we ought to take people’s reports at face value, and surrender our loyalty to first person epistemic privilege only as a last resort. If so, then the fact that blind experimental participants get upset when told of the studies debunking facial vision (Ono *et al.* 1986: 61) should be taken very seriously. One possible source of facial sensation is lateral head movement blind subjects are known to make while echolocating (Stoffregen and Pittenger 1995:185). These improve the quality of the signal, and might help explain differences in conscious accessibility. Whether this is accompanied by further involuntary movements, such as orienting the eyes, or twitching facial muscles, is unknown. However, the most obvious cause of reports of facial pressure is…air pressure.

At first, this might seem hard to reconcile with the collapse of facial vision as an explanatory hypothesis. Supa’s team had participants wear headphones and sit in a room while listening to audio transmissions of somebody walking down a hallway (Supa *et al.* 1944). Subjects performed well under this condition, but were rendered helpless while walking with their ears stopped up. This pretty much ruled out the air pressure theory of obstacle avoidance (1944: 129). Despite this, there are reasons to think there can be both haptic subjective experience and even spatial perception.

The poorly regulated observing conditions of pre-20th century science did not account for interference from wind and air currents. Many observations seem to have taken place outdoors where changes in air pressure are stronger and harder to control. This played a role in shaping hypotheses, as in Diderot’s description of a capable blind man who “is so sensitive to the least atmospheric change, that he can distinguish between a street and a closed alley” (Diderot 1749: 78). It is not hard to believe that unconscious echolocation (or spatial hearing) could be *accompanied* by subjective feelings of fluctuating air pressure—the face, in particular, is most likely to be uncovered when outdoors, after all. Supa *et al.*’s later finding that using a veil to eliminate air currents coincided with the disappearance of facial vision is perplexing, but not if subtle vortices contributed to genuine, but misinterpreted, haptic experiences. Supa *et al.*, though skeptical, seem to acknowledge that “air wave stimulation” (1944:166) could account for some haptic feeling (though not spatial perceptions). If so, then many more subjects’ reports are accurate and compatible with heterogeneous causes and situations.

But we can go further. There clearly is such a thing as facial vision, in the sense that haptic perceptions of air pressure help us cope with the spatial environment. Though a normal part of experience, sensitivity is low and depends on favorable conditions. When outdoors, for instance, one can more easily receive cues about the location of obstacles from gusts of wind and fluctuating air currents. Inhabitants of big cities are familiar with the strong winds that often blow within “condo canyons.” Of course, days with dead air nullify this advantage. Likewise, although indoor atmospheres are generally too stable, changes in air pressure are detectable and spatially informative in certain environs. Everyday examples illustrate. Experienced subway riders know their train is approaching by sensing changes in air pressure, amplified by the compressed confines of the tunnel. Clearly, we experience changes in air pressure as part of everyday life, and often these are correlated with interesting features of the physical environment. The serious question then, is not whether there is “facial vision,” but how sensitive it is and how it is used. Whatever the answer may be, indoor environments are generally unsuitable.

 In addition to intuitive argument and folk observation, there is also support to be had in the experimental literature. Researchers found that the study of blind echolocation outdoors was complicated by the tendency of subjects to grasp at cues picked up from sun and wind. Echolocating outdoors is more difficult owing to interference from uncontrolled ambient noise, such as traffic or construction activity (Stoffregen and Pittenger 1995: 185).However, Ammons and her colleagues reported that “On occasion when there was a wind and *S* walked with or against it, he was made aware of the obstacle by changes in pressure against his face” (Ammons *et al.* 1953: 528). If the wind died down, performance diminished. Hence given suitably *strong* changes in air pressure “facial vision” in this sense is a genuine mode of spatial perception.

The balance of evidence, rather than undermining the presumption of introspective privilege, supports it. Echolocation is often unconscious, nevertheless subjects could be reporting on the experiences they undergo accurately. Since the experiences are highly variable, this accounts for the diversity of the self-reports. There are several explanations on the menu that may be true of a given subject in different combinations and degrees: echolocation versus spatial hearing, conscious versus unconscious awareness, anticipatory “tensing up,” feeling the wind, and air currents, especially outdoors, sometimes just as a feeling, other times as a way to detect features of the spatial environment. No wonder people seem confused!

These points can also help fashion a hypothesis about how “facial vision” gets mixed up with echolocation. Blind persons who found themselves echolocating unconsciously in everyday life would be taken aback by their mysterious ability and search for an explanation. Especially while moving about outdoors, some of them would have noticed strong sensations on the face from air currents and surmised that this was somehow guiding them. This would seem reasonable in the absence of any other noticeable sensation that could conceivably be responsible. While this line of thinking is erroneous, conscious introspection need not be at fault, rather, the mistake lies in judging a causal explanatory relation to obtain between obstacle detection and haptic phenomenology. Again, this error is compatible with correctly judging there to be haptic experience. I have argued that this makes for a more attractive picture than one postulating confabulatory reports mysteriously biased towards the haptic.

Might Schwitzgebel and Gordon reform their interpretation by adopting this idea? For instance, might people confabulate haptic phenomenology because they have learned to associate it with times when they are echolocating? However, this seems overly complicated. Since we know air pressure changes cause haptic experiences, there is no explanatory gain in positing a special mechanism that results in introspective error and confabulation. The suggestion also fails because we have been given no reason to think people commonly confuse different sense modalities. For example, since subway riders probably associate certain haptic experiences with the sound of a train, shouldn’t air pressure alone occasionally cause them to judge they are undergoing fictitious auditory experiences? But this seems very unlikely.

CONCLUSION

Recent empirically informed philosophy of mind trumpets bold new refutations of the manifest image:

All this is evidence enough, I think, for a generalization: The introspection of current conscious experience, far from being secure, nearly infallible, is faulty, untrustworthy and misleading—not just *possibly* mistaken, but massively and pervasively (Schwitzgebel, 2008: 259).

Meanwhile commonsensical perspectives suffer from two weaknesses, one epistemological, the other pertaining to the sociology of academic research. The first problem is that they have a poor reputation, admittedly deserved, in light of the many examples of scientific revolutionaries turning folk opinion on its head. The second problem, like the journalist’s dictum about bites and dogs, is that you don’t get attention by pointing out things we take for granted. This is how things should be, to some extent, though we should be vigilant of overreaching in our efforts to compensate for everyday delusions.

Consider, for a moment, the remarkable discovery, just announced, that almost ninety percent of homicides are committed by post-menopausal females. *Ninety percent*! Of course, I am kidding. The reality is more along the lines of Shakespeare’s wry wish:

I would there were no age between sixteen and

three-and-twenty, or that youth would sleep out the

rest; for there is nothing in the between but

getting wenches with child, wronging the ancientry,

stealing, fighting…[[11]](#footnote-11)

Some claims are so far outside conventional understanding that they provoke our immediate disbelief. To insist *most everything we think we know about ourselves is wrong* is a catastrophe of Shakespearean proportions.

This is to make a point about where the argumentative burden lies, how weighty it is, and what background assumptions should figure into our theorizing as defaults. One need not be Descartes to have noticed that people seem to enjoy special access to their own mental states: we seem to know directly and non-inferentially and in a way that doesn’t require knowledge of one’s inner or outer physical states (qua physical). It is also hard to see how what knowledge is obtained could be represented physically; physicalism is the worst theory of mind, except for all the others. As Goldman notes, the “behaviorist joke” is funny because[[12]](#footnote-12) it is a platitude that verbal report is a reliable indicator when it comes to first-person knowledge (1998: 119).

Certainly the skeptics about introspection aren’t just voicing counterintuitive claims—they are offering arguments and reasoned interpretations. In reply, while I am not urging total Cartesian infallibility, when it comes to discriminable simples in current consciousness it is near enough. More modestly, it is concluded that Anton’s syndrome and facial vision are not examples where people make mistakes. What to say about introspective reliability when it comes to other judgments and attitudes, and it’s a long list, is another matter.

**References**

Ammons, C. H., Worchel, P., and Dallenbach, K. M. (1953). “‘Facial Vision’: The perception of obstacles out of doors by blindfolded and blindfolded-deafened subjects,” *The American Journal of Psychology* 66(4): 519-53.

Armstrong, D. (1963). “Is Introspective Knowledge Incorrigible?” *Philosophical Review* 72: 417-32.

Ashmead, D. H., Hill, E. W., and Taylor, C. R. (1989). “Obstacle Perception By Congenitally Blind Children,” *Perception and Psychophysics* 46: 425-33.

Benson, D. F. (1994). *The Neurology of Thinking*. Oxford University Press.

Blackmore, S. (2002). “There Is No Stream of Consciousness,” *Journal of Consciousness Studies* 9(5–6): 17–28.

Bramble, B. (2013). “The Distinctive Feeling Theory of Pleasure,” *Philosophical Studies* 162: 201-17.

Brazis, P. W., Masdeu, J. C., and Biller, J. (2007). *Localization in Clinical Neurology* (5th). Philadelphia: Lippincott Williams & Wilkins.

Churchland, P. M. (1985). “Reduction, Qualia, and the Direct Introspection of Brain States,” *The Journal of Philosophy* 82(1): 8-28.

Churchland, P. M. (1988). *Matter and Consciousness: A contemporary introduction to the philosophy of mind*. The MIT Press.

Churchland, P. S. (2002). *Brain-wise: Studies in neurophilosophy*. The MIT Press.

Churchland, P. S. (1988). “Reduction and the Neurobiological Basis of Consciousness,” in A. J. Marcel and E. Bisiach (eds.) *Consciousness in Contemporary Science* (pp.273-304). Oxford: Oxford University Press.

Clark, A. (2002). “Is Seeing All It Seems? Action, reason and the grand illusion,” *Journal of Consciousness Studies* 9(5-6): 181-202.

Clifton, R. K. and Freyman, R. L. (1997). “The Precedence Effect: Beyond echo suppression,” in R. H. Gilkey, and T. R. Anderson (eds.) *Binaural and Spatial Hearing in Real and Virtual Environments* (pp.233-56). Lawrence Erlbaum.

Clifton, R. K., Freyman, R. L., and Meo, J. (2002). “What the Precedence Effect Tells Us About Room Acoustics,” *Attention, Perception, and Psychophysics* 64(2): 180-8.

Daly, M. and Wilson, M. (1990). “Killing the Competition,” *Human Nature* 1(1): 81-107.

Daly, M. and Wilson, M. (1999). “Darwinism and the Roots of Machismo,” *Scientific American Presents* 10(2): 8-14.

Davidson, D. (1984). “First-Person Authority,” *Dialectica* 38: 101-11.

Dennett, D. (1978). *Brainstorms*. Montgomery, Vermont: Bradford Books.

Dennett, D. (1991). *Consciousness Explained*. Boston: Little, Brown and Company.

Dennett, D. (2002). How Could I Be Wrong? How wrong could I be? *Journal of Consciousness Studies* 9(5-6): 13-6.

Diderot, D. (1749/1916). *Diderot’s Early Philosophical Works* (trans. Margaret Jourdain). Chicago: The Open Court Publishing Company.

Dufour, A., Després, O., and Candas, V. (2005). “Enhanced Sensitivity to Echo Cues in Blind Subjects,” *Experimental Brain Research* 165(4): 515-9.

Edelman, G. and Tononi, G. (2000). “Rentry and the Dynamic Core: Neural correlates of conscious experience,” in T. Metzinger (ed.). *Neural Correlates of Consciousness* (pp.139-51). Cambridge: The MIT Press.

Forde, E. M. E. and Wallesch, C. W. (2003). “A Psychological Review of Anton’s Syndrome,” in C. Code, C. W. Wallesch, E. Joanette, and A.R. Lecours (eds.). *Classic Cases in Neuropsychology, Volume 2* (pp.199-222). Psychology Press.

Goldenberg, G., Müllbacher, W., and Nowak, A. (1995). “Imagery Without Perception—

A case study of anosognosia for cortical blindness,” *Neuropsychologia* 33: 1373-82.

Gertler, B. (2001). “Introspecting Phenomenal States,” *Philosophy and Phenomenological Research* 63: 305-28.

Goldman, A. (1998). “Consciousness, Folk-Psychology, and Cognitive Science,” in N. Block, O.J. Flanagan, and G. Güzeldere (eds.). *The Nature of Consciousness: Philosophical debates* (pp.111-25). Cambridge: The MIT Press.

Goldman, A. (2006). *Simulating Minds*. New York: Oxford University Press.

Griffin, D. (1958). *Listening in the Dark: The acoustic orientation of bats and men*. New Haven: Yale University Press.

Hardcastle, V. (1997). “When a Pain is Not,” *The Journal of Philosophy* 94(8): 381-409.

Haybron, D. (2008). *The Pursuit of Unhappiness*. New York: Oxford University Press.

Hill, C. (1993). *Sensations: A Defense of type materialism*. Cambridge: Cambridge University Press.

Hirstein, W. (2005). *Confabulation: Views from neuroscience, psychiatry, psychology and philosophy*. New York: Oxford University Press.

Horgan, T, Tienson, J. L., and Graham, G. (2006). “Internal-World Skepticism and Mental Self-presentation,” in U. Kriegel and K. Williford (eds.) *Self-representational approaches to consciousness* (pp.191-207). Cambridge: The MIT Press.

Jackson, F. (1973). “Is There a Good Argument Against the Incorrigibility Thesis?” *Australasian Journal of Philosophy* 51: 51-62.

Juurmaa, J. and Soili, J. (1965). “On the Obstacle Sense of the Blind,” *Helsinki Institute Occupational Health Monograph*, 28.

Juurmaa, J. (1970). “On the Accuracy of Obstacle Detection By the Blind, Part 1,” *New Outlook for the Blind* 64 (3): 65-72.

Kohler, I. (1964). “Orientation By Aural Cues,” *American Foundation for the Blind Research Bulletin* 4: 14-53.

Kornblith, H. (1998). “What Is it Like to Be Me?” *Australasian Journal of Philosophy*, 76: 48-60.

Lane, S. M. and Zaragoza, M. S. (1995). “The Recollective Experience of Cross-modality Confusion Errors,” *Memory & Cognition* 23(5): 607-10.

Langton, R. (2009). “Confabulation and Delusion: A review of Hirstein’s *Brain Fiction*,” *Philosophical Psychology* 22(6): 785-802.

Litovsky, R. Y., Colburn, H. S., Yost, W. A., and Guzman, S. J. (1999). “The Precedence Effect,” *The Journal of the Acoustical Society of America* 106(4): 1633-54.

Lloyd, D. (1989). *Simple Minds*. Cambridge: The MIT Press.

Macpherson, F. (2010). “A Disjunctive Theory of Introspection: Reflection on zombies and Anton’s syndrome,” [*Noûs-Supplement: Philosophical Issues*](http://search.proquest.com.ezproxy.fiu.edu/philosophersindex/pubidlinkhandler/sng/pubtitle/Nous-Supplement%3A%2BPhilosophical%2BIssues/%24N?accountid=10901) [20](http://search.proquest.com.ezproxy.fiu.edu/philosophersindex/indexingvolumeissuelinkhandler/23487/Nous-Supplement%3A%2BPhilosophical%2BIssues/02010Y01Y01%24232010%243b%2B%2BVol.%2B20/20/%24N?accountid=10901): 226-65.

Maurer, D. (1993). “Neonatal Synesthesia: Implications for the processing of speech and faces,” in B. de Boysson-Bardies, S. de Schonen, P. Jusczyk, P. Mcneilage, and J. Morton (eds.). *Developmental Neurocognition: Speech and face processing in the first year of life* (pp.109-24). Dordrecht: Kluwer.

Metzinger, T. (2003). *Being No One: The self-model theory of subjectivity*. Cambridge: The MIT Press.

Nagel, T. (1974/1998). “What Is It Like to Be a Bat?,” in N. Block, O.J. Flanagan, and G. Güzeldere (eds.). *The Nature of Consciousness: Philosophical debates* (pp.519-27). Cambridge: The MIT Press.

Noë, A. (2002). “Is the Visual World a Grand Illusion?” *Journal of Consciousness Studies*, 9(5-6): 1-12.

Ono, H., Fay, A., and Tarbell, S. E. (1986). “A “Visual” Explanation of Facial Vision,” *Psychological Research* 48(2): 57-62.

O'Regan, J. K. and Noë, A. (2001). “A Sensorimotor Account of Vision and Visual Consciousness,” *Behavioral and Brain Sciences* 24(5): 939-72.

Rosenblum, L. D., Gordon, M. S., and Jarquin, L. (2000). “Echolocating Distance by Moving and Stationary Listeners,” *Ecological Psychology* 12(3): 181-206.

Schwitzgebel, E. (2008). “The Unreliability of Naïve Introspection,” *Philosophical*

*Review* 117: 245-73.

Schwitzgebel, E. (2010). “Introspection,” *The Stanford Encyclopedia of Philosophy*.

<http://plato.stanford.edu/archives/win2012/entries/introspection/>

Schwitzgebel, E. (2011). *Perplexities of consciousness*. Cambridge: The MIT Press.

Schwitzgebel, E. and Gordon, M. S. (2000). “How Well do We Know Our Own Conscious Experience? The case of human echolocation,” *Philosophical Topics* 28: 235-46.

Smuts, A. (2010). “The Feels Good Theory of Pleasure,” *Philosophical Studies* 155(2): 241-65.

Stroffregen, T. A. and Pittenger, J. B. (1995). “Human Echolocation as a Basic Form of Perception and Action,” *Ecological Psychology* 7(3): 181-216.

Strelow, E. R. and Brabyn, J. A. (1982). “Locomotion of the Blind Controlled by Natural Sound Cues,” *Perception* 11: 635-40.

Supa, M., Cotzin, M., and Dallenbach, K.M. (1944). “‘Facial Vision’: The perception of obstacles by the blind,” *American Journal of Psychology* 57: 133-83.

Taylor, S. E. and Brown, J. (1988). “Illusion and Well-Being: A social psychological perspective on mental health,” *Psychological Bulletin* 103(2): 193-210.

Taylor, S. E. and Brown, J. (1994). “Positive Illusions and Well-Being Revisited: Separating fact from fiction,” *Psychological Bulletin* 116(1): 21-7.

Thaler, L., Arnott, S. R., and Goodale, M. A. (2011). “Neural Correlates of Natural Human Echolocation in Early and Late Blind Echolocation Experts,” *PLoS ONE*, 6(5): e20162. doi:10.1371/journal.pone.0020162.

Tye, M. (2009). *Consciousness Revisited*. Cambridge, MA: The MIT Press.

Villey, P. (1914/1930). *Le Monde des Aveugles*. (English). Duckworth.

Weiner, W. R., Welsh R. L., and Blasch, B. B. (2010). *Foundations of Orientation and Mobility, Volume One:* *History and theory* (3rd). New York: AFB Press.

Wilson, T. (2002). *Strangers to Ourselves: Discovering the adaptive unconscious*.

Cambridge: Harvard University Press.

Worchel, P. and Dallenbach, K. M. (1947). “Facial Vision”: Perception of obstacles by the deaf-blind,” *The American Journal of Psychology* 60(4): 502-53.

1. Schwitzgebel (2008: 246) notes that skepticism about the reliability of conscious introspection has ancient roots in Eastern meditative traditions, and can also be found in 19th century criticisms of “scientific phenomenology.” [↑](#footnote-ref-1)
2. A search of the *Philosopher’s Index* for “Anton’s Syndrome” only turns up one article: Macpherson (2010). [↑](#footnote-ref-2)
3. Her other examples are blindsight, somnambulism, and commissurotomy. Churchland is targeting various supposed platitudes including the ideas that control and conscious awareness are conceptually linked, that the mind is a unity, and that introspection is infallible. [↑](#footnote-ref-3)
4. I thank an anonymous referee for this last suggestion. [↑](#footnote-ref-4)
5. “[E]cholocation is the ability to detect features of the environment, especially features of objects that generally do not themselves produce sound, using the acoustic changes in sounds from other sources as they reflect off or are otherwise mediated by those environmental features or objects.” [↑](#footnote-ref-5)
6. Although commonplace when it comes to remembering (Lane and Zaragoza, 1995), cross-modal error seems to be uncommon with respect to current states of consciousness. Confusion between smell and taste might be one exception, though this raises special issues given their unusual intermingling in experience. [↑](#footnote-ref-6)
7. Also known as the “precedence effect” and the “Haas effect.” [↑](#footnote-ref-7)
8. An influential view maintains that “re-entrant pathways” or “back projections” link and dynamically alter higher and lower representations, thus providing a neurological outlook on the idea that “seeing is seeing-as,” in other words, that conceptualization and perception are inextricably entangled (Edelman and Tononi 2000). [↑](#footnote-ref-8)
9. This reply differs from their “error in words” possibility (Schwitzgebel and Gordon, p.241) and the example of somebody who is consciously hearing timbre, but unable to recognize it either by name or description. Such a person is not in error about his phenomenology. Against this, Schwitzgebel and Gordon contend that in the case of echolocation it is not that subjects don’t recognize it for what it is, but rather they altogether fail to notice they are having the experience. Meanwhile, I am not just saying they don’t know what to call it; the phenomenology itself could be distinctly non-echoic. If so, then failing to report echoes does not imply either a reporting error, or an error about the phenomenology. [↑](#footnote-ref-9)
10. Some confusion lies on the other side of the interviewing table. Schwitzgebel and Gordon (2011: 64) mention a paper by Ono *et al.* (1986) and the context suggests they think it provides evidence that hearing echoes causes subjects to report feeling facial pressure. However, this is not what the study tried to show. Although Ono *et al*. called their project an investigation into “facial vision,” their experiments had nothing at all to do with audition. Instead they found that shining a light through the eyelids of sighted participants produced reports of “facial vision” – that is, some subjects reported vague “impressions” and “feelings” that light was shining on their face (it’s hardly surprising seeing light through one’s eyelids would lead someone to infer that a light is shining on them).

Somewhat more interestingly a smaller group (about a third of participants) said they felt “warmth, pressure, or wind” only when viewing the light (though note at least 10% of the reports seemed untrustworthy, e.g. such as those who reported feeling pressure even when there was no light). The reports from this smaller number of more trustworthy informants are somewhat curious. Perhaps the light source emitted enough heat to be felt by some (or was confused with such—my face is often a little warm). More likely the visual representation of light is also represented spatially in that the subject knows which parts of her body are exposed to the light source; this knowledge could be difficult to express clearly. However, note that a much larger proportion of sighted individuals in the study responded negatively when asked if they experienced facial vision.

While the researchers also found that belief in “facial vision” was prevalent in the blind community, this must be qualified to the point of irrelevance, as they found “there was nothing phenomenologically auditory or cutaneous about their descriptions” (Ono *et al*. 1986: 58). Instead, interviewees “most often” used visual metaphors, such as that something was “blocking their view.” Nearly every participant in the study who claimed to experience “facial vision” in this odd, visual, sense were only partially blind, and of the eight totally blind interviewees only one claimed to have it. It therefore seems more likely that most subjects were confused and reporting partial visual experiences. Whether the Ono *et al*. study has anything to do with facial vision in the sense implicating echolocation is doubtful. [↑](#footnote-ref-10)
11. *The Winter’s Tale*: act 3 scene 3. The reality is just as to be expected: Males comprise the vast majority of murderers, with those who are unattached and in their early 20s being the most dangerous (Daly and Wilson, 1990, 1999). [↑](#footnote-ref-11)
12. “That was good for you, how was it for me?” [↑](#footnote-ref-12)