

Galileo's Real Error

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Abstract: *Goff argues that Galileo erred in denying that sensory qualities are present in the physical world and that we should correct his error by supposing that all matter has an intrinsic conscious aspect. This reply argues that we should be open to another theoretical option. Galileo's real error, I argue, was not about the location of sensory qualities, but about their very existence. Like most people, Galileo assumed that sensory qualities are instantiated somewhere. I argue that this is a theoretical assumption which can and should be questioned. If we drop it, we can give a natural account of the function of sensory quality talk and explain how our puzzlement about consciousness arises.*

Galileo's error, according to Philip Goff, concerned the location of sensory qualities, such as colours, sounds, smells, and tastes. The new science Galileo championed could not describe such properties, and he concluded that they were not present in the physical world, but existed only in our minds, produced there by the impact of physical stimuli on our sense organs.

Error or not, Galileo's move was a natural one in the early modern period. Where we encounter a world richly arrayed with sensory qualities, science finds only physical structures and processes, describable in mathematical terms. The mind, which was widely agreed to be an immaterial soul, provided a convenient repository for these qualities, along with other features recalcitrant to mechanistic explanation, such as intellectual thought and free will. The fact that sensory qualities varied with observers made this move even more natural.

The move looked less attractive in the mid-20th century, when mind-body dualism was widely rejected in favour of some form of mind-brain identity. If the mind is the brain, then it is a far less hospitable home for sensory qualities. Science does not find qualitative properties inside the brain any more than it does outside it. So the scene was set for the contemporary debate about consciousness.

In response, philosophers divided into two broad camps. The first retreated to a qualified form of dualism, holding that the brain has a soul-like *aspect*, composed of non-physical sensory qualities, which reveal themselves to us in a primitive way. The second camp maintained a materialist line, insisting that, despite appearances, sensory qualities are brain properties, which are known

to us through mechanisms of introspection. As Goff explains, both camps face serious problems—the dualists that of explaining the relation between the brain's physical and non-physical properties, the materialists that of persuading us that sensory qualities are nothing more than states of soggy pink-grey brain tissue.

Goff proposes an alternative, which involves returning qualities to the physical world. He doesn't return them straightforwardly, however, by locating colours on the surfaces of objects, tastes in food, sounds in the air, and so on. He takes it as a datum that the sensory qualities with which we are acquainted are mental ones—they are forms of conscious experience, which constitute our subjective life and are known to us with more certainty than anything else (Goff, 2019, pp. 3–5). Rather, he proposes a form of panpsychism, according to which conscious experience is the intrinsic nature of all matter and the qualities we experience are constructed from the primitive qualities of the particles that constitute our brains. In effect, Goff keeps qualities in the mind but distributes minds throughout the world.

It's an ingenious idea, and Goff argues for it clearly and powerfully. The view faces its own problems, however, particularly in explaining how primitive sensory qualities combine to form complex ones. Moreover, as I've argued elsewhere, it cannot explain why sensory qualities have psychological and ethical significance (Frankish, 2021). Still, I agree with Goff that it is a mistake to treat sensory qualities as either identical with, or emergent from, neural ones.

Is there another way of resisting the Galilean relocation? Let us begin by imagining an alternative history in which Galileo responded differently to the problem of sensory qualities. In this alternative timeline, people have long believed in a form of panpsychism, though one different from Goff's. They believe that all objects, including the various parts of their own bodies, have immaterial souls, whose nature they can sense intuitively. However, they do not believe that *they themselves* have a soul—a personal soul, distinct from the souls of their organs and limbs. They believe that they are complex machines composed of soul-possessing parts. So, it does not occur to alt-Galileo to locate sensory qualities in his own soul. Instead, he locates them in the souls of the objects to which they appear to belong—redness in the tomato soul, blueness in the sky soul, pain in the toe soul, and so on. The fact that it is intuitively obvious that sensory qualities are located in the objects around us makes this move even more natural for him. Having consigned sensory properties to the souls of objects, alt-timeline scientists get on with the business of explaining the behaviour of objects and our reactions to them in purely physical terms.

Of course, this view faces problems, such as explaining why objects appear differently to different observers and finding a location for the qualities

experienced in dreams. Alt-timeline philosophers come up with ingenious answers, suggesting, for example, that souls change their properties depending on the observer and that there are disembodied souls visible only to dreamers.

Science develops, and by the mid-20th century alt-timeline philosophers have ceased to believe in souls and have to decide what to say about sensory qualities now. As in our timeline, there are two camps. The first say that, though objects lack souls, they still have a soul-like aspect, whose character we intuit in an immediate way. The second say that, despite appearances, sensory qualities are physical features of objects—reflectance properties of surfaces, and so on. Both camps face similar problems to those facing their counterparts in our timeline. (Then a brilliant philosopher writes a book called *Galileo's Error*, which argues the sensory qualities of objects are compounded from the primitive sensory qualities of their physical elements ...)

The point of this story is not that we should adopt alt-Galileo's view instead of Galileo's. It is that the two views are *parallel*. To claim that sensory qualities belong to a mental arena—a soul, or soul-like aspect of a brain—is to make a theoretical proposal every bit as speculative as that of claiming that they belong to the souls of objects. It is not a datum that we are immediately acquainted with mind-located sensory qualities, but a *theory* (contra Goff; 2019, pp. 10–11). The alt-timeline philosophers don't conceive of themselves as having an inner world populated with sensory qualities. For them, all the qualitative richness is located in the space around and inside their bodies. (No doubt the same goes for many people in our own timeline, but the alt-timeline philosophers hold the conception explicitly and in spite of scientific and philosophical objections.)

The moral, then, is that the starting point for thinking about consciousness is not an introspective datum—the existence of mind-located sensory qualities (or 'phenomenal' properties). Rather it is a *problem*: how to reconcile our everyday image of the world as arrayed with sensory qualities with a scientific image of the world that has no place for them. The idea that sensory qualities are located in our minds, like the alt-timeline claim that they located in object souls, is a theoretical response to this problem, which is shaped by the theorists' intellectual traditions. Each theory has its costs and benefits (the mind version easily explains the observer relativity of sensory qualities but denies their spatial locatedness, while the object-soul theory has the opposite virtues).

Now, since we are in the realm of theory when talking about sensory qualities, maybe we should be open to other theoretical options regarding them. Maybe Galileo's real error—and alt-Galileo's, too—wasn't about the location

of sensory qualities at all, but about their very *existence*.¹

Suppose that instead of puzzling over where sensory qualities are located, Galileo had asked what our *talk* about sensory qualities is doing. This is a much easier question. At a first pass, such talk tracks dispositional features of objects. Each quality concept tracks a worldly feature (often highly disjunctive) which produces a distinctive set of psychological reactions in us—priming effects, beliefs, desires, emotions, behavioural dispositions, etc. Science can describe these features and reactions in complete detail, and evolutionary biology and psychology can explain why we are sensitive to the features and why they evoke the reactions they do.

Things get difficult only if we try to find features within this story, or within some parallel story about nonphysical processes, with which we can identify sensory qualities themselves. Like almost everyone else who has thought about it, Galileo assumed that sensory qualities were instantiated *somewhere*, and so had to invent, or co-opt, a suitable substrate for their instantiation. And maybe that's the big mistake—Galileo's Real Error. Maybe sensory qualities are a sort of illusion (Frankish, 2016).

Maybe what's happening is something like this. As well as tracking features of the world, our brains also track the complex reactive patterns these features evoke in us and *misrepresent* these reactive patterns as simple qualitative aspects of the tracked features. Thus, when we conceptualize an object as having a certain sensory quality—redness, say—we are in effect conceptualizing it as affecting us like *this*—where the demonstrative gestures at the complex reactive pattern triggered by red things. We are representing worldly features as ones that have a certain *significance* for us.

Such a view explains why sensory qualities seem to have a dual nature—located in objects but dependent on us. The reason is that sensory quality concepts track features of objects but represent those features as infused with qualities that express the reactions they produce in us. There is nothing mysterious about this, provided we don't ask where the qualities really are.

Am I serious? Am I really denying that the blue of the sky through my window is not real, that it is not instantiated in all its dazzling blueness? I *am* denying it, though there's a sense in which I still can't help *taking* the blueness to be real. It is part of my subjective 'take' on the world—the huge set of automatic psychological reactions to stimuli constructed by brain systems over which I have no control. This take is a psychological condition, and a thing is part of it if my brain produces reactions indicative of the thing's reality. I cannot bypass

¹ This idea is not new, of course, and it has been defended at length by Daniel Dennett, whose work inspires the sketch that follows (see, e.g., Dennett, 1991).

these reactions and encounter the world raw—though I can, of course, learn to distrust them and reflectively correct my beliefs about what the world is really like. This goes for sensory qualities as much as for any other aspect of the world. They seem undeniably real because our brains produce psychological reactions strongly indicative of their reality, and when we tell ourselves a story about what we are experiencing, they figure in it as peremptory presences.

I should stress that I am not suggesting that it is a *fault* in our brain systems that they construct a quality-suffused take on the world. Far from it. By doing so they enable us to pick out features by their significance for us—to simultaneously express what's happening and what it *means*. Like art, sensory quality reports express important truths through fictional means. It is not a mistake to take such reports seriously; but it is a mistake to take them *literally*. If we ask where sensory qualities are actually located, then the answer is that it's in the same place as Hamlet's indecision and Anna Karenina's intelligence.

This is only a sketch, of course, but I believe it points to a coherent theoretical option, which in turn opens up new lines of scientific inquiry. But if we are to take it seriously, we must stop making Galileo's Real Error.

References

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