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Is Epistemological Reductionism Defensible?

Introduction

Can we trust testimony? Much of what we know comes from testimony, making it a seemingly essential source of knowledge (Leonard, 2023). Some leading thinkers have embraced testimony as a legitimate source of knowledge—with some obvious caveats—a position known as *credulism* or *non-reductionism* (Pritchard, 2023). Thomas Reid argued that we have a natural disposition to believe the testimony of others (principle of credulity) and that people have a natural inclination to tell the truth (principle of veracity; Cleve, 2006). On the other extreme is *testimonial scepticism*, which rejects testimony as a legitimate source of knowledge or, in a less extreme form, argues for a high degree of scepticism towards testimony (Keren, 2024). *Reductionism* suggests that justification for a testimonial-based belief must rest on non-testimonial evidence (Pritchard, 2023). This essay will critically examine the reductionist view, especially asking whether this is a defensible position. I will argue that added scrutiny is warranted but that strict reductionism is difficult to defend.

The Positivist Side of Reductionism

Although the ideas date back much further, the term *reductionism* was coined by Coady in 1973 (see also Green, n.d.). Reductionism does not reject testimony outright but requires positive reasons for accepting testimony as reliable (Leonard, 2023). This position is clear and logically coherent. Given that testimony at times, but not always, generates true beliefs, it seems reasonable to demand some added scrutiny. Even credulists are unlikely to accept the testimony of a clearly unreliable person, like a criminal defendant proclaiming to be innocent when other evidence shows the opposite. Similarly, most testimonial sceptics are likely to act on testimonial evidence in their everyday lives, especially when other evidence is difficult or impossible to obtain (for example, asking for directions when lost in an unfamiliar city without a mobile phone or other navigation device). While both credulists and sceptics may insist that this does not change their view on the epistemic justification of testimony, their actions in these examples indicate that this *positivist* aspect of reductionism is useful in daily life. This does not imply that such a positivist view is true or superior to other views—poignant arguments for and against all three main views can be made—but the specific question addressed here is whether it is a defensible position. These examples show that this positivism is often the default position when acting in the world, making it a reasonable and practical position to hold.

The Reductionist Side of Reductionism

As the name implies, reductionism is more than just a demand for positive reasons to accept testimony: It seeks to *reduce* epistemic justification to non-testimonial sources (Leonard, 2023; Pritchard, 2023). Given the inherent problem with reliability, this seems to be a reasonable position to hold at first glance, especially since unreliability can compound when testimonial beliefs rest on other testimonial beliefs. A simple mathematical illustration occurs when we assign a numerical value (or *certainty factor*, *CF*) between 0 and 1 to account for the uncertainty of a testimony (where 1 is absolute certainty and 0 is certain falsehood). For example, just three layers of

testimony (i.e. a testimony-based belief that relies on two other testimony-based beliefs) dramatically reduces the overall certainty and reason for accepting the final belief even when assigning a very high certainty (such as 0.8) to each individual layer.

$$\frac{1}{CF_1} \times \frac{1}{CF_2} \times \frac{1}{CF_3} = \frac{1}{0.8} \times \frac{1}{0.8} \times \frac{1}{0.8} = 0.512$$

Thus, reductionism may seem like a reasonable approach. However, digging deeper will show that this may not be the case. Reductionism is only logically coherent if the other sources used as a replacement for justification have a higher certainty of being correct (i.e. they have a higher *CF* in the mathematical example given above). As such, defending reductionism requires strong arguments for the notion that other sources of knowledge are more reliable or have a higher certainty of being true. It is not sufficient to argue that some sources may, at times, be more reliable as that would only allow the conclusion that not all testimony should be trusted (which is already entailed in the positivist position outlined above). Reductionists must show that testimony is *categorically* less reliable than other sources of knowledge, which is why justification cannot be based on testimony. However, other sources of knowledge are also fallible. Sensory perception, for example, is far from infallible and can be influenced by biochemical factors like being alcoholised (Bartholow et al., 2003). More extreme examples include drug-induced hallucinations (Niebrzydowska & Grabowski, 2022). Even sober perception is not a perfect representation of the world around us; it is simply our brain's interpretation of it (Pang, 2023). Other sources of knowledge, like intuition and memory, are also inherently unreliable (Huemer, 1999, 2002; Pritchard, 2023). Empirical knowledge is not infallible either, as it is based on several assumptions that are not themselves empirical and relies on experience, which, given the fallibility of perception, makes it equally fallible (Markie & Folescu, 2021; Pritchard, 2023). *A priori* knowledge may be immune to some of these problems but only offers a very limited scope of knowledge (and even that is still being debated; see Russell, 2020). As such, most testimonial knowledge cannot invoke an *a priori* justification.

Given the fallibility of other sources of knowledge and that *a priori* sources cannot be used as a justification for most testimonial beliefs, reductionists must make a case for why testimony, but not other sources of knowledge, is disqualified from epistemic justification. While other sources may offer better justification than testimony in some cases, and while some testimony should clearly not be used as a justification for knowledge, reductionists must explain why this should *always* be the case. Imagine a solar eclipse taking place in a faraway country like Australia. Why should reporting from credible news outlets based on the testimony of reporters (approved by the editors) and the potential testimony of millions of witnesses be disqualified from epistemic judgment? Surely, the combination of these testimonies offers higher reliability than many cases of sensory perception or other sources of knowledge. If we conclude that epistemic justification of testimony needs to be evaluated on a case-by-case basis, then reductionism has failed. While arguments can be made that testimony does not offer sufficient justification in *any* case, similar arguments can be made for other sources of knowledge, which would result in adopting a sceptical rather than a reductionist position.

Practical Problems and Pragmatism

The motto of the Royal Society (n.d.) '*nullius in verba*' ('on nobody's word') indicates a reductionist outlook. However, the Royal Society was not conceived as an

experimental laboratory but aimed to “gather information by correspondence” (Royal Society, n.d.), thus relying very much on people’s words. Most scientific breakthroughs would be impossible if every scientist tried to replicate every relevant experiment in their field from scratch rather than accepting the testimonial evidence of other scientists and building on their work. Einstein’s famous theory of special relativity rested on the experimental work of Michelson and Morley (Holton, 1969), which Einstein neither observed nor repeated but accepted based on their testimony. While it can be argued that justification for accepting these experimental results could be non-testimonial, this becomes a complex undertaking in the case of Einstein, who read and thought a lot but conducted very few experiments himself (Minkel, 2006). From a practical point of view, it is extremely difficult to find non-testimonial justification for all the beliefs we accept. Even if fallible, a similar argument to Reichenbach’s pragmatic approach to induction (Glymour & Eberhardt, 2022) can be made for accepting testimonial justification. As humans, we are social creatures and much of our knowledge comes from social interactions, often in the form of testimony (Audi, 2013). It is unclear how reductionism can account for the complex interactions of social, cultural, and cognitive factors in gaining knowledge, and it seems incongruent with what we know about the psychology of learning in some areas (Ormrod, 2012). As such, reductionism suffers from practical problems as well as the more abstract ones outlined above.

Conclusion

Testimony is not always reliable. Thus, demanding positive reasons to accept testimony is a reasonable and defensible position to hold. However, reductionism goes one step further by suggesting that these positive reasons include the fact that justification for acceptance must be based on non-testimonial sources. This position is difficult to defend because it is unclear why other sources are prioritised over testimony when they, too, are fallible and may even be more unreliable in some cases. Finally, reductionism is not easy to put into practice in everyday situations. Overall, it seems more reasonable to hold either a positivist or a sceptical view unless these issues are convincingly addressed, making it difficult to defend reductionism.

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