All in the Family:
The History and Philosophy of Experimental Philosophy

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Abstract: Experimental philosophy (or "x-phi") is a way of doing philosophy. It is "traditional" philosophy, but with a little something extra: In addition to the expected philosophical arguments and engagement, x-phi involves the use of empirical methods to test the empirical claims that arise. This extra bit strikes some as a new, perhaps radical, addition to philosophical practice. We don't think so. As this chapter will show, empirical claims have been common across the history of Western philosophy, as have appeals to empirical observation in attempting to support or subvert these claims. While conceptions of philosophy have changed over time, across these changes we find philosophers employing empirical methods in pursuing their philosophical questions. Our primary aim in this chapter is to illustrate this fact. We begin by discussing the relevance of history to experimental philosophy (Section 2), then offer a necessarily condensed and highly selective history of empirical work in Western philosophy, ranging from the ancients (Section 3), to the early moderns (Section 4), to the late moderns (Section 5), and on to the present (Section 6).

Keywords: history of philosophy; experimental philosophy; philosophy of psychology; metaphilosophy; history and philosophy of science; philosophical methods

1. Introduction

Experimental philosophy is philosophy *with a little something extra*. Work in experimental

philosophy (or "x-phi") addresses philosophical issues or questions, just like other work in

philosophy. It puts forward philosophical arguments and offers reasons to believe key premises

in those arguments, just like other work in philosophy. And it often appeals to empirical

evidence in laying out these reasons, just like *much* other work in contemporary philosophy.

The twist—the *something extra*—is that experimental philosophers do not merely call on the

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empirical work of others, mining the scientific literature for their evidence, but report the results of their own studies. That is, experimental philosophers *do* empirical science as part of *doing* philosophy.[2]

As we understand it, experimental philosophy involves the use of scientific methods for the purpose of casting light on philosophical issues or helping to answer philosophical questions. This is a *broad* definition. It does not specify what these scientific methods are, nor does it prescribe what the philosophical target of these investigations must be. As such, it does not restrict x-phi to the use of questionnaires (or surveys), nor does it restrict it to the study of people's intuitions, let alone people's intuitions about philosophical thought experiments.

Many have interpreted experimental philosophy more *narrowly*, however, including both critics and proponents. This was especially notable in the early days of twenty-first century x-phi, where metaphilosophical debates generally focused on the use of questionnaire methods to study people's judgments about philosophical cases, often specifically targeting non-philosophers ("the folk") and interpreting the judgments elicited in terms of "intuitions". In our opinion this was never the sole extent of experimental philosophy, though, as is evidenced by early works within x-phi like Nichols' (2002) and Schwitzgebel's (2009), which we discuss briefly in the next section. And over the past ten years, a broad conception of x-phi has become increasingly prevalent, even if some critics continue to assume a narrow focus.[3]

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[2] Thus, we disagree with overly simplistic readings of Knobe's (2016) "Experimental Philosophy is Cognitive Science". It is tempting to interpret the title as claiming that all of experimental philosophy belongs to the area of research or inquiry categorized as "cognitive science". But that interpretation fails to capture experimental philosophical work that doesn't have much to do with cognitive scientific matters (cf. Barnard et al. 2021). And when combined with the common picture of cognitive science as an interdisciplinary area of research that somehow goes over and beyond its contributing disciplines (e.g., Bechtel 1986), the overly simplistic interpretation leads to the conclusion that x-phi isn't philosophy at all. But it is. As Gonnerman writes, "The 'experimental' in 'experimental philosophy' is not like the 'fake' in 'fake diamonds'. It's more like the 'good' in 'good ideas'. It modifies a noun to identify a subset" (2018, p. 465).

[3] For an explanation of the diversity of projects in x-phi, see Barnard et al. (2021), and to understand this diversity as an exemplification of intellectual humility, see Ulatowski (forthcoming). For some examples of experimental

It is particularly tough to maintain a narrow conception of experimental philosophy today if you pay attention to the recent literature. The diversity of methods employed by experimental philosophers (as illustrated by Fischer and Sytsma in Chapter 2), and the range of targets that they explore (as illustrated by the chapters in Parts 2 and 3),[4] are simply too large, far outstripping the use of questionnaires to probe intuitions about philosophical cases. Nonetheless, it remains true that a good deal of work employs questionnaire methods and targets case intuitions, as detailed by Horvath in Chapter 4. But we contend that it includes much, much more besides.[5]

Recognizing this, we might ask, "What unites the various research being done in experimental philosophy today?" This is the potential downside to diversity. A bigger tent often means a less clear agenda. On a particularly narrow conception, x-phi is quite focused: it is the scientific study of intuitions about philosophical cases. On a broad conception, however, x-phi is not so readily encapsulated. In fact, we believe that it is not best thought of as an area of study at all. Rather, experimental philosophy is an approach to philosophy—*a way of doing philosophy*— whatever the topic or area. Thought of in this way, we believe that, at a minimum, what unites experimental philosophers is simply a basic methodological commitment—that empirical claims

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philosophers explicitly adopting a broad definition, see Sytsma and Machery (2013), Rose and Danks (2013), O'Neill and Machery (2014), Sytsma and Livengood (2015), Schupbach (2016), Buckwalter and Sytsma (2016), Stich and Tobia (2016), Weinberg (2016), and Cova et al. (2021).

[4] For surveys of an even wider array of topics, see Sytsma and Buckwalter (2016).

[5] For instance, recent papers have focused on qualitative interview methods (Thompson forthcoming) and computer simulations (Sytsma et al. forthcoming). Another clear illustration is the increasing body of work calling on methods from corpus linguistics—the branch of linguistics that aims to collect and analyse pre-existing "real world" data on the use of words (McEnery and Wilson 2002, McCarthy and O'Keefe 2010). Philosophers have increasingly called on such methods, ranging from simple web searches, to more balanced corpora, to sophisticated computational approaches. See the discussion by Fischer and Sytsma in Chapter 2 for an illustration, and Bluhm (2016), Sytsma et al. (2019), Caton (2020), and Ulatowski et al. (2020) for further examples and discussion. See Sytsma (forthcoming) for an extended bibliography for English-language work employing corpus methods. Below we'll argue that contemporary experimental philosophy is a continuation of a much longer tradition of employing empirical methods for philosophical purposes, and this includes the use of corpus methods such as in Patrick (1888), McKinnon (1970), and Meiuner et al. (1976). Perhaps a paper or chapter not too much unlike this one would argue that present-day corpus analysis is an extension of such work.

call for empirical support (Sytsma 2017, Ulatowski 2017)—along with a certain DIY attitude, a kind of self-initiative where the experimentalist is willing to deploy empirical methods where needed to fill in the gaps of the existing empirical record, especially when the extant evidence fails to adequately speak to empirical claims that matter for philosophical purposes.

As we will see, this methodological commitment and DIY attitude is neither new nor radical. Empirical claims have been common across the history of Western philosophy, as have appeals to empirical observation in attempting to support or subvert these claims. And while conceptions of philosophy have changed over time, in most, if not all, stages we find philosophers employing empirical methods in their philosophical explorations. Our primary aim in this chapter is to illustrate this fact. We begin by discussing the relevance of history to experimental philosophy (Section 2), then offer a necessarily condensed and highly selective history of empirical work in Western philosophy,[6] ranging from the ancients (Section 3), to the early moderns (Section 4), to the late moderns (Section 5), and on to the present (Section 6).

2. Appeals to History

There are many ways in which the history of philosophy can be relevant to present-day experimental philosophy. One is that history can serve as a kind of breeding ground for hypotheses that the experimentalist might explore. Eric Schwitzgebel and Joshua Rust's work on the moral behaviour of ethicists illustrates this kind of relationship (for an overview see Schwitzgebel and Rust 2016). For example, to motivate his examination of rates at which

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[6] Further, restricting ourselves to just Western philosophy leaves out many examples of fruitful empirical work in other traditions, such as work in Igbo metaphysics on the theory of being that rarely, if ever, gets noticed (Edeh 1985). We hope that future work will be able to rectify this limitation by giving a global history of the role of empirical work in philosophical explorations.

philosophy books go missing from academic libraries, Schwitzgebel (2009) notes that prominent historical figures such as Aristotle, Kant, and Mill were committed to the idea that philosophical reflection on the moral domain will tend to improve moral behavior. Whether this idea is correct or not, however, is an empirical issue. And, as far as library holdings go, the claim generates the prediction that books more likely to appeal to professional ethicists will be stolen or left unreturned due to negligence at lower rates than books more likely to attract the attention of philosophers who are not ethicists. This prediction is not borne out by Schwitzgebel's data, however. Indeed, he found that relatively obscure books in ethics were more likely to be missing from library holdings than obscure books from other areas of philosophy.

Another way in which the history of philosophy may be relevant to experimental philosophy is nearly the opposite of the preceding relationship. Rather than serving as a source of hypotheses worthy of empirical assessment, philosophy's history can also function as a kind of data stream for evaluating philosophical claims. Consider Shaun Nichols' (2002) work on the genealogy of norms. He considers the question of how norms come to be accepted and maintained in a culture, putting forward the hypothesis that emotional response is an important factor in the process. To test this, he focuses on norms related to core disgust (i.e., disgust elicited by body by-products, spoiled food, and the like), deriving a list of prohibitive manner norms from the first known book on manners in the Western tradition, categorizing these based on their relation to core disgust, and then having a set of independent coders judge whether they are part of contemporary Western manners. Nichols found that while 92% of the norms related to core disgust remained part of contemporary manners, only 27% of those not related to core disgust were still in force, supporting his hypothesis.

The history of philosophy can also help inform our metaphilosophical considerations, as it does in this chapter. And we are hardly alone in turning to the history of philosophy to help situate experimental philosophy within the larger discipline. Here are but three examples. First, Joshua Knobe (2007a, 2007b; see also Knobe and Nichols 2008) points to earlier philosophers in his argument that modern-day experimental philosophy is a return to a vision of philosophy centered on human nature, especially how the human mind operates, as we find for Hume in Section 4. Second, Guy Longworth (2018) reflects on the ordinary language philosophy of John Cook Wilson and J. L. Austin, in part, in order to highlight a form of experimental philosophy closer to experimental mathematics than the form he believes to be common in experimental philosophy these days. We'll return to ordinary language philosophy briefly in Section 5 (see also Chapter 2). And, third, Tom Sorrell (2018) portrays some experimental philosophers, such as Sytsma and Livengood (2015), as calling on philosophy's history with the goal of defending the claim that experimental philosophy is in fact philosophy and not merely psychology or some other social science. Sytsma and Livengood (2019) deny that their aim was to defend x-phi from this charge (which they don't take seriously in the first place); rather, they called on the history of philosophy to show how x-phi fits into the wider practice of philosophy as understood by practitioners at the time. We expand on this here, suggesting that experimental philosophy has a long, nearly uninterrupted, connection to the way that philosophy has gotten done over at least the last four centuries, if not the last two millennia.

To a large extent, what sets our historical appeals in this chapter apart from the three examples above, then, is our argumentative goal. It is our claim that appeals to empirical evidence have long figured in philosophy's past. And often it has been (self-proclaimed) philosophers collecting this evidence. As such, we suggest that far from representing a radical

departure from philosophy's past, as some suggest, experimental philosophy is in fact continuous with many of its traditions (Sytsma and Livengood 2015, 2019; Barnard and Ulatowski 2016, Ulatowski 2016).

In the remainder of this chapter we aim to illustrate this point by reporting a few of the many examples from the history of Western philosophy in which philosophers have employed empirical methods in their philosophical inquiries. However, this aim raises an issue immediately: How are we to identify which inquirers were *philosophers* and which of their inquiries were *philosophical*? This is not an easy question to answer. How to draw disciplinary boundaries today is a contentious issue, and it only gets thornier as we shift our view further back in time. We find that many thinkers who considered themselves to be philosophers are now most often classified in another way. And even among those considered canonical philosophers, we find that many of the inquiries that they considered philosophical concerned questions that would not be deemed so today. Accepting this, we see two basic choices: at one extreme we could defer to the thinkers themselves, accepting their identification as philosophers and their judgments about their inquiries; at the other, we could hold fast to our contemporary judgments, imposing one or another modern conception of philosophy on historical figures.

It is well beyond the scope of the present chapter to attempt to settle this issue, although we have trouble imagining what could reasonably justify the claim that some current conception of philosophy best delineates its true and immutable boundaries, let alone what would justify the claim that philosophy has such true and immutable boundaries in the first place.[7] As such, in

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[7] This perhaps comes into focus when thinking about the future of philosophy. Given that conceptions of philosophy have changed over time, it is quite plausible they will continue to do so. But, then, why think that we're currently occupying the crucial moment in which we're getting it right? Furthermore, we strongly suspect that any such delineation of philosophy's boundaries would not only eject many historical "philosophers" from the tradition but would exclude many present-day "philosophers" as well—many folks with all the trappings of academic philosophers (PhD's in the subject, appointments in philosophy departments, publishing in philosophy journals). See Sytsma and Livengood (2015, Chapter 2) for discussion. We personally find such practices rather distasteful. One

what follows we will largely focus on thinkers' self-conceptions with regard to philosophers and philosophical enquiry, although we'll highlight some places where this plausibly diverges from contemporary impressions of the canon or the extent of philosophical inquiry. Regardless, we believe that you are likely to find *many* examples of philosophers employing empirical methods in philosophical inquiries in the brief survey we turn to now, even if you discard other examples as not being *true* philosophers or *true* philosophical inquiries. And, insofar as the central argument of this paper is concerned, that should be enough.

3. Ancient Philosophy

Reflection on ancient philosophy helps to reveal that, where we find philosophers, we rarely have to search long to find empirical evidence being deployed towards philosophical ends. Consider Thales of Miletus. In addition to the remarkably parsimonious picture of the universe he is most known for, Thales is reported to have asserted that lodestones have souls (Aristotle [1984], 1.2, 405a19–405a21), distinguishing them from inanimate things (Lorenz 2009). It is hard to see what would have undergirded Thales' assertion about magnets if not experience with them. They do, after all, display something like "contingent interactive behavior," as when they attract certain other objects (on the importance of such behavior in triggering mental state attributions, see, e.g., Arico et al. 2011). Sure, Thales' assertion is likely to strike many as rather

cause for concern is that the development and deployment of such restrictive conceptions is often insufficiently attentive to the ways in which they contribute to what Kristie Dotson (2012) calls a "culture of justification" in philosophy, wherein a premium is placed on "legitimation narratives". Importantly, these narratives are not aimed at, say, the central and supporting claims of a piece of research; rather, they endeavor to establish the research's status as philosophy in the first place. One common exemplification of philosophy's culture of justification is a question often heard by Dotson, which experimental philosophers will be quite familiar with: "How is this paper philosophy?" As Dotson argues, one problem with philosophy's culture of justification is that the burden of legitimation falls on philosophy's diverse and would-be diverse practitioners, which, in turn, helps to contribute to philosophy's underrepresentation problems, including along racial, ethnic, gender, sexual, and ability lines but also in connection to diverse approaches to and topics in philosophy.

silly today. But the merits or demerits of the assertion are largely beside the point. What matters for current purposes is that we have a recognizably philosophical claim, by either contemporary or historical standards, being put forward on the basis of empirical observation. And as we will see, this is hardly an anomaly.

Then again, one might worry that this example from Thales does not quite serve the argumentative ends of the present chapter, even if you accept it as an example of a philosopher conducting a philosophical enquiry. While Thales' evidence must have been at least partially empirical, it might be urged that in distinguishing between empirical and non-empirical (or "armchair") philosophy, we need to allow that *some* empirical observation can be called on while remaining firmly in the armchair. Exactly which tools in the philosopher's toolkit qualify as armchair implements is not perfectly clear, however. Mortensen and Nagel (2016, p. 56) provide some suggestions, registering the likes of Plato's dialectical method, Descartes' introspective examinations in the *Meditations*, Locke's method of relying on his observations about how knowledge is acquired and how words are used, as well as more formal methods such as the use of logic, decision theory, and semantics. In Section 3, we show how it could be a mistake to maintain that these armchair methods were the only ones deployed by early modern philosophers. Descartes, for example, was far more experimental than many care to admit.

This list is likely to strike some as possibly missing an important item. To get at this, consider direct realism, which we might characterize as the view that perceptual experience is individuated in terms of relations that the perceiver bears to external-world objects, relations that are unmediated by, or perhaps unanalyzable by appeal to, inner states of the perceiver (Lyons 2016, Section 2.3.3). One kind of argument often given against direct realism is a perceptual relativity argument. Berkeley's *Three Dialogues Between Hylas and Philonous* provides an

example. There, through his mouthpiece Philonous, Berkeley argues against the view by noting that a bowl of water may feel hot to one hand while cold to another and that what tastes sweet to one person may strike another as bitter (Berkeley [1713] 1901, 476). What we have is an argument that appeals to an empirical discovery, namely, the fact that perception can (and indeed often does) vary across presentations and perceivers. But the argument will strike many, if not all, as a bit of armchair philosophy, perhaps because of the now commonplace nature of the empirical evidence called on. Indeed, to capture arguments like Berkeley's, Fumerton suggests that armchair philosophers can appeal to "'familiar' facts" (Fumerton 1999, p. 22), or "the kind of empirical data that one can't help getting by simply living one's life" (Fumerton 1999, p. 23). Assuming that the behavior of magnets could be treated as familiar facts for the ancients, then Thales and his ensouled lodestone might be better characterized as an instance of armchair philosophy. And there is certainly something compelling about this suggestion. At the very least, we have no reason to think that the empirical basis for Thales's assertion was arrived at through anything like the systematic empirical investigations characteristic of the sciences today.

Even adopting a suitably broad conception of armchair philosophy and suitably strict expectations about the sophistication of ancient science, however, will only push our origin story forward at most a few hundred years. Aristotle provides some rather clear examples of an ancient philosopher making empirical claims in their philosophical investigations on the basis of less readily accessible empirical evidence, perhaps even evidence of the sort that we might associate with the sciences properly speaking.

In an 1882 letter to his friend William Ogle, Charles Darwin wrote, "Linnaeus and Cuvier have been my two gods […] but they were mere schoolboys to old Aristotle" (Darwin

Correspondence Project 1882).[8] This quote helps to remind us of Aristotle's immense accomplishments in biology (among a wide range of scientific topics). Indeed, about 20% of his extant writings were biological, and in these he put forward an impressive body of information about the physiology, behaviour, and classification of over 500 species (Mason 1962, p. 412–434). It is clear that systematic empirical research and inquiry helped to inform Aristotle's biological writings. True, he obviously didn't leave us with any detailed descriptions of his studies, as in the form of lab notes, but it appears that Aristotle did rely on dissections that he performed or directed as well as on the testimony of people working closely with animals including beekeepers, fisherman, and sponge divers (Lennox 2021, Section 3). And, of course, it seems fairly undeniable that Aristotle was a philosopher. Indeed, he is generally considered one of the greatest ever.

In Aristotle, then, we have a rather clear example of a philosopher who engaged in systematic empirical research and inquiry. At first blush, what is perhaps a bit less clear is how to characterize the relationship between his biological research and philosophical inquiries. It is perhaps tempting to say that Aristotle was simply a polymath—sometimes he wore the hat of a biologist and at others he donned the hat of a philosopher (among many others). The problem with this story is that it fails to capture the ways in which Aristotle's biological research interacted with his philosophical thinking, even drawing such a whiggish distinction. The idea that these two were deeply intertwined is well captured in the historical scholarship on Aristotle. For example, Grene and Depew (2004, p. 1) write that "[o]ne cannot read him for any length of time without seeing that his central philosophical concerns were closely related to his biological interests". Further, Tipton (2014, p. 9) refers to both "Aristotle's philosophical biology" and his

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[8] It is sometimes suggested that Darwin's praise of Aristotle was insincere. Gotthelf (1999) argues that a close examination of Darwin's writings shows that the praise was genuine.

"biological philosophy", two phrases that hint at deep interconnections between Aristotle's biology and his philosophy. And Lennox notes that

> there are important connections between the theoretical approach to the relationship between body and soul defended in [*De Anima*] and the distinctive way that Aristotle approaches the investigations of animals. (Lennox 2021, Section 1)

What the historical scholarship suggests, then, is that Aristotle engaged in and relied on systematic biological research in order to draw philosophical conclusions, even when we operate with today's standards of what qualifies as philosophy.

4. Early Modern Philosophy

We've just seen that the use of empirical observation in philosophy has a long history. And while we've focused on just a pair of examples, more could be given (e.g., Theophrastus' biological observations and his claims about animal minds and prohibitions against animal sacrifices; see Ierodiakonou 2020), and similar examples could be highlighted among the Romans and Medievals (e.g., Buridan's theory of impetus and its role in explaining the behavior of virtuous people and in distinguishing occurrent from dispositional thought; see Zupko 2018). But it is in the early modern period, especially in the late 1650s and early 1660s, that the use of empirical methods really began to flourish in Western philosophy. What may be called "early modern experimental philosophy", like contemporary x-phi, was a broad movement that eschewed speculative philosophical inquiry, especially within the realm of natural philosophy (Anstey and Vanzo 2016). Dmitri Levitin gives a terse description of the distinction between speculative and experimental philosophy in early modern philosophy:

> At its simplest level, the distinction was a polemical one, emphasising that any natural philosophy not founded on observation and experiment was invalid, and especially that "hypotheses" formed without recourse to experience were to be avoided, and lay at the historical origins of natural philosophical error. (Levitin 2019, p. 230)

Such investigations held a powerful grip on philosophy and eventually spread to medicine, moral philosophy, and aesthetics (cf. Anstey 2005, 2012).

Early modern experimental philosophers were finished with speculations and theories about the world that were based on empirical claims in the absence of sufficient empirical evidence. And similar points hold for contemporary experimental philosophers, with one driving force behind the rise of x-phi in the twentieth century being dissatisfaction with speculative appeals to philosophers' own intuitions, which were often assumed to be widely shared and supposed to be highly reliable. Despite the similarities, however, there are also important differences between early modern and contemporary experimental philosophy. These include that early modern experimental philosophy was notably broader in ambition than x-phi today, likely in part reflecting the relatively early stages of systematic scientific inquiry and specialization found during the early modern period.

While early modern experimental philosophy can be seen as a general approach to the study of nature, contemporary x-phi is more modest in its aspirations, reflecting a narrowing of our sense of what reflects distinctly philosophical issues or questions. The flip side of this is that both our understanding of science and the sophistication of scientific methods has dramatically increased since the early modern period, resulting in a steep increase in specialization. Alongside this progression, early modern experimental philosophy went through various incarnations as key methodological notions (hypothesis, experiment, confirmation, and so forth) were elucidated. For example, for its first four decades it was generally held that experimental philosophy should be done using the method of Baconian natural history. The success of Newton's *Principia* changed all that, however. By contrast, contemporary x-phi has a sophisticated, robust, and tested set of

methodological practices and principles it can draw on, borrowing from the expertise of various established sciences.

Not surprisingly, there are ample examples of self-proclaimed philosophers employing empirical methods during the early modern period. For instance, Gottfried Wilhelm Leibniz made careful observations of fossils collected from mountaintops and Blaise Pascal famously followed up on experiments by Galileo and Torricelli, carrying a barometer up a mountain to show that the air had weight. As these two examples help to hint at, many of the people calling themselves experimental philosophers, however, were primarily working on problems in what we might now call science, especially physics or chemistry. For instance, much of Robert Boyle's experimental work was directed at questions about the nature of matter, including the so-called spring of the air (see Shapin 1994, Shapin and Schaffer 1995). In one ingenious experiment, he hung a watch by a thread within a bell jar, which was then connected to an air pump. Boyle then listened carefully to the sound of the watch as the pump was used to remove the air, noting that it steadily decreased in volume as the air was removed. Thus, Boyle convincingly demonstrated that sound is transmitted through air and could not be transmitted in a vacuum.

Early modern experimental philosophy was not a short-lived trend. For instance, a search of the *Eighteenth Century Collections Online* database turns up more than 100 entries with "experimental philosophy" in the title alone (and 2,750 with the phrase in the document).[9] Even removing repetitions and irrelevant entries, we're still left with more than 30 distinct works on experimental philosophy. And authors continued to publish on experimental philosophy well into the nineteenth century. For example, corrected editions of Parker's 1852 *School Compendium of*

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[9] https://www.gale.com/primary-sources/eighteenth-century-collections-online

Natural and Experimental Philosophy, written for use by Boston school children, were published as late as 1870. While much of this work would be described as part of the physical sciences today, and not philosophy proper, it is important to note that through much of this period, researchers considered their empirical explorations of the natural world to be philosophical investigations. To give but one example, in Michael Faraday's public lectures on *The Chemical History of a Candle*, he remarks that "we come here to be philosophers" (Faraday [1861] 2008, p. 9).

In line with the issue raised above, it might be objected that while experimental philosophers of the period described themselves as philosophers, what we mean by "philosophy" has shifted over time and that their empirical research is philosophy in name only by today's standards. Indeed, many prominent experimental philosophers are no longer typically thought of as philosophers. For instance, Newton is most often described as a physicist today, despite the first known use of this term coming over 100 years after his death. We find this to be unfortunate and misleading, as a historical survey of the work of figures like Boyle, Newton, and Faraday reveal much that strikes us as straightforwardly philosophical.

Even if you are inclined to exclude figures like these from the philosophical canon, however, the point remains that many *self-described* philosophers have traditionally employed empirical methods in trying to answer questions that *they* considered philosophical. And contemporary experimental philosophers do the same. Further, even if we set aside figures like Boyle, Newton, and Faraday, many philosophers of the early modern period that are considered canonical today employed empirical methods. One example that stands out is Rene Descartes. Descartes is often portrayed as an armchair philosopher, perhaps the quintessential armchair philosopher, but he was also an experimentalist. Focusing just on the *Meditations* and the method

of doubt, one might well think of Descartes as being anti-empirical, with the primary aim of his method being to rid us of our mistaken empirical beliefs. Skeptical scenarios involving evil demons are said to have cleansed us of our sinful dependence upon experience, heading us off from the mistaken belief that anything to do with experience could be the foundation of knowledge (Newman 1994, 2006). This, however, hardly tells the whole story. Indeed, in our opinion, Descartes' experimental and scientific work is as much a part of his philosophical legacy as are his more speculative arguments.[10]

To offer but one of many examples, in the *Optics*, Descartes gives an account of visual perception, calling on a number of empirical observations in doing so. For instance, Descartes argues that while images in the mind need not resemble the things perceived, they nonetheless "do imprint very perfect images on the back of our eyes" (Descartes [1637] 2001, p. 91). To demonstrate this he then describes the process of dissecting "the eye of a newly deceased man, or, for want of that, of an ox or some other large animal" as follows:

> carefully cut through to the back the three membranes which enclose it, in such a manner that a large part of the humor *M* […] which is there remains exposed without any of it spilling out because of this. Then, having covered it over with some white body thin enough to let the daylight pass through it, as for example with a piece of paper or with an eggshell, *RST*, place this eye in the hole of a specially made window such as *Z*, in such a manner so that it has its front, *BCD*, turned toward some location where there are various objects, such as *V*, *X*, *Y*, illuminated by the sun; and the back of it, where the white body *RST* is located, toward the inside of the chamber *P* (where you will be), into which no other light is allowed to enter except that which will be able to penetrate through this eye, all of whose parts, from *C* to *S*, you know to be transparent. For when this has been done, if you look at that white body *RST*, you will see there, not perhaps without admiration and pleasure, a picture which will represent in natural perspective all the objects which will be outside of it toward *VXY*. (Descartes [1637] 2001, p. 93)

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[10] Also, it is notable that Gassendi, one of Descartes' interlocutors who had an overwhelming influence upon the formation of *Meditations on First Philosophy*, offered in his work a defense of experiment very different from Bacon's, which had largely won favor amongst their contemporaries. Instead of following Bacon's eliminative induction with the goal of establishing an experimental science based on solid principles, Gassendi formulated a probabilistic logic that worked within a semiotics, which moved the experimentalists beyond what was evident to the senses (see Cassan 2012 on Gassendi 1658).

This was not simply an empirical aside for Descartes. Rather, the experiment played a key role in elucidating his account of vision, which was part of his philosophical treatment of perception. Thus, Descartes states that by explaining at length how the picture is formed in this experiment, he "can enable you to understand several things which pertain to vision" ([1637] 2001, p. 93; for an account of how Descartes' optics figure in his theory of visual spatial perception, see Wolf-Devine 2000).

Further, other philosophers focused on the use of empirical methods in the study of human nature. For instance, in *A Treatise of Human Nature*, David Hume wrote that "we can hope for success in our philosophical researches" by studying "all those sciences, which more intimately concern human life" (Hume [1739] 1975, I.4). Hume's thought was that we could begin to understand philosophical phenomena like morality, perception, or causation by first studying our own minds. Indeed, when it comes to studying the human mind, Hume ([1739] 1975, I.6–8) claimed that it was "impossible to form any notion of its powers and qualities otherwise than from careful and exact experiments". This is an attitude that resonates clearly with experimental philosophers today, as noted above.

5. Late Modern Philosophy

By the end of the nineteenth century, the label "experimental philosophy" which was so prominently used in the early modern period, had largely fallen into disuse. And one may suspect that the use of empirical methods in philosophy largely died with the label as philosophy increasingly came to be distinguished from the sciences. Indeed, this is the standard story. Looking across the history of philosophy since the early modern period, we find a process of specialization as the sciences steadily break away from the mother discipline of philosophy. As

this process of specialization continued, theoretical speculation increasingly came to overshadow empirical investigation. Despite this, it is important to recognize that empirical work never disappeared from Western philosophy, as we detail in some length in this section. As we will see, regardless of the standard story about early analytic philosophy, a clear lineage can be found between nineteenth and twentieth century philosophy and contemporary x-phi.

The standard story is that the rise of analytic philosophy pushed any remaining vestiges of empirical work from mainstream philosophy around the time of Gottlob Frege and Bertrand Russell. Despite the impact that some philosophers had in the emerging scientific psychology, and despite inroads being made using empirical methods by philosophers, their overwhelming influence turned many philosophers' gaze toward language, ontology, and the foundations of mathematics. Accordingly, the view that predominated analytic philosophy from the 1880s through the early part of the twentieth century was that formal and speculative approaches, in contrast to empirical or experimental approaches, form the basis of resolving philosophical problems (cf. Dummett 1993, Soames 2003a, 2003b, 2014, 2018, 2019, Stroll 2001).

This is not the whole story of early analytic philosophy's relationship with empirical work, however. One part of the larger story is the role that philosophers played working at the intersection with psychology. This includes philosophers who both conducted experiments and made careful observations in order to advance their philosophical (and psychological) theses, such as Charles Sanders Peirce and William James. While they often published in philosophy journals, some of their most prominent work was published in early issues of *Psychological Review* and *The American Journal of Psychology*. Similarly, Henri Bergson's first scholarly publication (1886) was based on his observations of hypnosis sessions, and he was elected president of the Society for Psychical Research in 1913. Moreover, John Dewey and Josiah

Royce, in addition to William James—people that we typically categorize as American philosophers—each served as President of the American Psychological Association around the turn of the century. The end of the nineteenth and beginning of the twentieth century was rife with philosophical activity in psychology labs, as we illustrate over the next several paragraphs.

Even a cursory glance at philosophy journals such as *The Philosophical Review* or *Mind* and psychology journals such as *Psychological Review* or *The American Journal of Psychology* published in the 1880s and 1890s illustrates just how much overlap there was between the two disciplines, and makes clear that empirical investigations were still being pursued by philosophers despite the standard story.[11] Philosophical topics were under experimental investigation by philosophers, psychologists, and medical practitioners, and included aesthetics (Calkins et al. 1900, Martin 1905), belief and knowledge (Sumner 1898), corpus analysis of Heraclitus (Patrick 1888), foreknowledge and free will (Jastrow 1891), epistemological implications of optical illusions (Jastrow 1891, 1892), happiness (Brinton 1893), logic (Howison 1896, Lloyd 1896, Stratton 1896), memory (Burnham 1889, Kennedy 1898), and the longitudinal effect of teaching moral arguments to students (Street 1897). In fact, we believe that so many empirical studies exist from this period, which have largely gone unnoticed in recent times, that it is critical that we return to them if we hope to truly understand what is "traditional" in Western philosophy.

Many philosophers—especially those working at the boundary with psychology— pursued projects that look quite different from the supposed tradition. Some were reporting the results of experiments that they had run on their own, sometimes with the help of colleagues at

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[11] We should mention that studies undertaken to explore the history of philosophical topics in peer-reviewed journals will tend to return skewed, and perhaps idiosyncratic, results if they fail to take up corpora from psychology and sociology journals. For one prominent example of such a study, see Weatherson (2020).

other institutions. One study in particular stands out. Alexander Fraser reports finding individual

differences in some data on the nature of perception. He writes:

> Thought has often been designated, by prominent philosophical critics, a kind of natural language; but that, like language, it varies with different classes of individuals, and to what extent this fact may be regarded as the source from which arises the great variety of philosophical theory which exists in the world, has as yet been barely noticed. Just as men of different nationalities speak in different verbal languages, so do different types of individuals think in different thought-languages and, just as in the case of verbal languages, each thought-language is made up from various different sources, but has one dominant, characteristic foundation. (Fraser 1891, p. 230)

Fraser's experiments were meant to undermine a popular view that thought was a "kind of

natural language" that has as its source the data of the five senses. This was called

"sensationalism". Fraser argued that the predominant source of thought, especially for those

philosophers working in the early modern period such as Hobbes, Locke, Berkeley, and Hume,

was vision. He performed experiments testing whether people relied more upon their vision for

thought, and he completed a corpus analysis of the works of Hobbes, Locke, Berkeley, and

Hume. In addition, he cited famous studies by Galton and Huxley in which it was shown, e.g.,

that from childhood to adulthood people "accustomed to hard abstract thinking" relied more and

more upon "verbal images" as they grew older. Through these different methods, Fraser argued

that the natural language of thought arises from visualization alone, thus undermining the vastly

more popular view of sensationalism.

Fraser's study of "visualization" was not the last time that he defended the use of

psychological methods and data to discover something interesting about philosophy. In 1892,

relying on, e.g., Goldscheider's empirical work on the sensation of touch and a close

examination of the writings of Thomas Reid, Fraser defended the claim that natural realism has

its source in the sense of touch.

Following on from that study, a later study of his traces the origin of Hegel's systemic philosophy to the discovery of galvanism. According to Fraser, the value of "Hegelism" may be derived from the very general conclusion that a whole metaphysical system may be founded upon "possible world conception" (the absolute) and, second:

> in his endeavor to make the so-called ultimate principles of reason as exhibited in the science of logic conform to his newly conceived principle, Hegel necessarily freed thought from the fixed and apparently ultimate forms in which it had lain bound for centuries. (Fraser 1893, p. 494)

The famous discoveries of Galvani and Volta concerning the first principle of electricity showed how it was "the most satisfactory explanation possible of the fundamental facts of nearly all departments of knowledge" (Fraser 1893, p. 474). Through a careful analysis of experiments completed in morphology, mineralogy, physiology, and chemistry, Fraser explained how Hegel used results in galvanism to lay out the foundation of his philosophical system. Through his close engagement with early empirical research, Fraser intended to build a "psychology of philosophy", a phrase that he had coined in his meta-philosophical reflections that appeared in print between the two empirical studies (cf. Fraser 1892).

Around the same time that Fraser was exploring the sources of thought, natural realism, and Hegelism in the wild, there was a crisis brewing over the "function of philosophy" in the University (see Dodson 1908) and the role that the study of philosophy played in tertiary education generally (see Brown 1921).[12] Another figure who saw value in philosophy's practical application was Jay William Hudson (1910, 1912), who strikes a chord by noting the clear need for an empirical approach:

> It is a commendable fashion to tell those entering upon the study of metaphysics that, after all, metaphysics is not a thing apart from the ordinary business of life, that even common-sense attitudes involve an unconscious theory of reality. But, supplementing this

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[12] Even William James and Josiah Royce were concerned with philosophy's fate at the hands of the mechanical arts and vocational studies that were becoming popularized by the industrial wing of academic life (cf. Veysey 1965).

statement, little or no explicit reference is made concerning what particular attitudes of common-sense imply what particular metaphysics. [...] [N]obody has attempted an empirical history of the popular judgments of any people concerning the true, the real, and the right, as expressed or implied in what one broadly calls social institutions. Yet nobody can deny the explicit and general use by any civilized society of the epistemological, ontological and moral predicates; nor can any one deny that these predicates are decisively implied in certain classes of social deeds. (Hudson 1910, p. 570)

Such a concern with the empirical history is a precursor to the ordinary language philosophy of the mid-twentieth century, with its concern with how we actually use words. And while ordinary language philosophy was often carried out from the armchair, there are also clear examples of empirical work from the period.

While many philosophers came to embrace methods that have been thought to be independent of empirical investigation, such as conceptual analysis, there was a preoccupation among many empirically minded philosophers that mere speculation would not be sufficient to settle philosophical questions. This is a refrain we see especially in ordinary language philosophy. For example, John Herman Randall (1956) complained that philosophers often do too much talking and not enough looking, a view he had likely inherited from Ludwig Wittgenstein.[13] Likewise, Anthony Douglas Woozley (1953), despite being a critic of ordinary language philosophy, cautioned philosophers against departing too significantly from what has been said in ordinary language. Space does not permit us a more detailed treatment of ordinary language philosophy, but see Hanfling (2000), Hansen (2014), and Laugier (2013), as well as Chapter 2 of this volume for more on its connection to experimental philosophy. Let us close, however, with two clear examples of experimental philosophy in the mid-twentieth century, starting with perhaps the most famous—Arne Næss.

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[13] As you might expect, a similar sentiment is found among many experimental philosophers today, including that some have taken Wittgenstein's ([1953] 2009, Section 66) slogan—"don't think, but look!"—as a motivation for their empirical pursuits (e.g., Sytsma and Livengood 2015, p. 43; Zahorec et al. forthcoming).

In much of his early philosophical work, Næss promoted an empirical approach to resolving philosophical problems. Although at the time of its publication, Næss's work was often derided (cf. Hempel 1950, Moore 1939, Nagel 1939), it later garnered respect (cf. Carnap 1955, p. 46; a letter from Carnap to Quine published in Creath 1991), including from contemporary experimental philosophers. Næss focused especially on how non-philosophers use ordinary terms of philosophical interest, such as "truth", holding that philosophers can come to a more thorough understanding of a term's usage by engaging ordinary people. In this he recognized that philosophers had been ignoring a valuable research tool.

Næss advocated for taking a more empirical stance in developing an account of truth (cf. Næss 1953a, 1953b). Toward this he describes how a philosopher might start by reviewing dictionary definitions, or operational definitions of truth from specific sciences, or by constructing "a formal definition suited to logical purposes" (Næss 1938, p. 13). But, when this process leads to "various types of theories which deal with the non-philosopher's opinion on the notion of truth"—with the "opinion of the man in the street" (Næss 1938, p. 14)—Næss questions how one can come to such conclusions without rising from the armchair. In line with the motivation we suggested above for contemporary x-phi, his view is that these are clearly empirical questions and since philosophers have not done the empirical research—have not asked non-philosophers for their views—the value of the work is dubious.

In this context, Næss points out an array of common phrases that philosophers of the period employed, each of which suggested a body of empirical knowledge that they were not in a position to opine on. These include many of the types of appeals to ordinary or common-sense judgments that contemporary experimental philosophers have frequently targeted, such as "the opinion of the man in the street on the truth-notion is", "to naive people truth means", "[i]f

common-sense had been asked to formulate what is meant by the truth of a belief, this is probably what it would have written", and so on (Næss 1938, p. 14–15). In regard to such appeals, Næss rightly asks, "how do philosophers *know* these things?" Indeed, he notes that "even superficial questioning of non-philosophers makes it hard for anyone to believe that the philosopher has got his 'knowledge' about peasant's and other's use of the word 'true'—or about the views of non-philosophers of truth—by asking any other person than himself" (1938, p. 40).

In light of this, Næss took an experimental turn, using questionnaires to investigate the accuracy of such claims about the ordinary use of terms like "truth". In these questionnaires Næss asked people a range of open-ended questions, including:

> What is to be understood by the expression "something is true"? Define the expression. (Næss 1938, p. 24)

> What is the c.c. [common characteristics] of that which is wrong? (Næss 1938, p. 23)

> Give me an example of something that is true. (Næss 1938, p. 23)

> Do you employ the expression "the truth"? (If answered positively:) On which occasions? (Næss 1938, p. 26)

Subjects' responses to these questions were recorded by an assistant, and the data were then analyzed. Even as Næss conducted this work, however, he laments the fact that it was necessary in the first place, noting that much of the work Næss and his lab assistants performed could have been prevented if philosophers had told us of how they came to know what the non-philosopher thinks. Næss writes:

> [T]he fact remains: [Philosophers'] writings contain almost nothing of [how they arrived at the conception of truth among non-philosophers]. Perhaps some of them have asked their wives or assistants for their opinions on the truth-notion, but there is very little to prove that they actually employed such a method. […] Even very superficial questioning of non-philosophers would make it almost impossible for anyone to believe that the philosophers writing about the opinions of ordinary people actually ask others than themselves. (1938, p. 15)

Since philosophers failed to support their views of the non-philosopher with anything more than mere speculation, Næss believed that a more systematic accounting was needed.

It seems that Næss was conflicted with regard to the ordinary notion. The questionnaire method, though fruitful, did not lead Næss to a uniform view. For instance, he writes that "we have gathered more than 1000 examples from non-philosophers and a great many from philosophic literature, but it is by no means plain how we from this collection should be able to infer any *general* statement resembling definitions" (Næss 1938, p. 71). Given the wide variety of ordinary notions of truth he had collected using the questionnaire method, none of them stand alone as *the* ordinary notion or commonsense view—a conclusion that prefigures the pluralistic conclusions many contemporary experimental philosophers have arrived at in studying ordinary beliefs (see, e.g., Gonnerman et al. 2018, 2021 on knowledge-how, Tierney et al. 2014 on personal identity, Goldberg et al. forthcoming on pain, and Ulatowski 2017 on truth).

We close by noting one further episode from the largely forgotten empirical history of philosophy. A bit later in the mid-twentieth century, over a two-year span Haskell Fain and Eugene Francis Kaelin (1960) conducted a longitudinal study of the philosophical beliefs of students in beginning philosophy classes. Their aim was two-fold: "to find out what some of the philosophical beliefs of students beginning philosophy actually are and to examine opinion shifts that occur during the semester" (Fain and Kaelin 1960, p. 138).[14] Interestingly, Fain and Kaelin found that some views remained the same across the term, despite being taught material that might alter their opinions, while others showed notable changes. We'll detail two examples.

First, Fain and Kaelin asked students the following question about explanation:

> Suppose one were asked why the ducks flew south this year. Which of the following statements would you consider the best explanation?

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[14] A notable comparison of their second aim is recent work completed by Schwitzgebel et al. (2021) and Buckland et al. (2021).

a. Ducks always fly south in the winter.
b. Ducks desire a warmer climate.
c. Ducks have an instinct to fly south.
d. No explanation is possible.
e. Cold produced a change in the pineal gland which is located near the duck's brain. (Fain and Kaelin 1960, p. 140)

Fain and Kaelin report that at the start of the semester, the majority of respondents favored either (b)—the teleological explanation—or (c)—an explanation by instinct. And when the same test was administered at the end of the semester, they found that there was no notable change in respondents' answers, despite having been introduced to Hume's analysis of causation in the meantime, which could have given rise to a shift towards answer (a).

A second example showed a notable change, however. Fain and Kaelin asked students the following question about the relativity of truth:

All truths are relative. What is true for one person could be false for another. What do you think?

a. I think all truths are relative.
b. I think most truths are relative.
c. I think most truths are not relative.
d. I think no truths are relative. (Fain and Kaelin 1960, p. 141)

The distribution of responses at the beginning and at the end of the semester is shown in Figure 1. Fain and Kaelin (1960, p. 142) conclude that since 56% of the students "still held that all or most truths are relative" at the end of the term, they must be relativists about truth. Unfortunately, they did not perform statistical tests on the data, relying instead on the descriptive data, and their conclusion is in fact not well-supported by their data, given the significant shift over the course of the term and the fact that the 56% figure was not significantly different from chance.[15]

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[15] Fain and Kaelin performed a follow-on study asking members of the same class how much they agree with statements such as: "If someone believes that there are men on Mars, then the statement 'There are men on Mars' is true for him". From the data collected on these statements, they recommend that when someone says that x is true
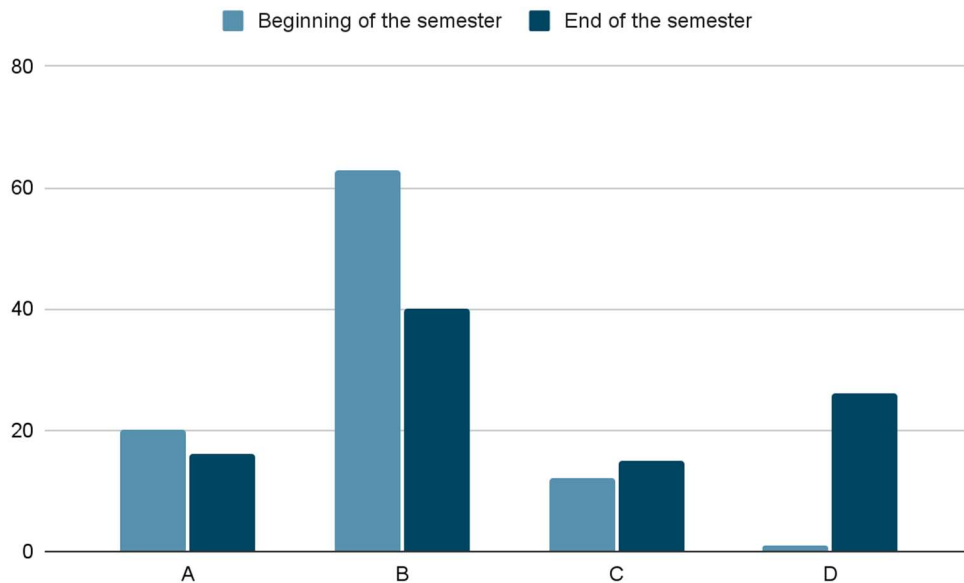
Figure 1. Longitudinal study of students' views on the objectivity of truth (from Fain and Kaelin 1960, p. 141)

One often hears that analytic philosophy pushed empirically oriented work out of the discipline, starting around the time of Frege and Russell. But, as we've seen, the use of empirical methods and data remained in some circles of analytic philosophy, perhaps percolating beneath the surface due to concerns with the "educational crisis" and the value of philosophy outside narrow academic confines. Nonetheless, many philosophers who had become hypnotized by the linguistic turn ignored the experimental work of the late nineteenth and twentieth century, much to the detriment of philosophy, in our opinion. Only recently has experimental philosophy emerged from the shadow cast upon it by mainstream analytic philosophy.

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for them, what the person actually means is that "the same proposition can be believed and disbelieved by different people at the same time" (Fain and Kaelin, p. 142). Some of this work may be contrasted with recent work on the objectivity of truth (see Barnard and Ulatowski 2021).

6. Contemporary Philosophy

While the label "experimental philosophy" had fallen out of use by the end of the nineteenth century, and was all but forgotten by the end of the twentieth century, a new group of researchers picked up the phrase in the early years of the twenty-first century—seemingly with little knowledge of its previous use and the tradition it tied them to. The *new* experimental philosophy, as Sytsma and Livengood (2015) call it, was kicked off by the "Rutgers Posse": Stephen Stich, Ron Mallon, Shaun Nichols, and Jonathan Weinberg, as well as Joshua Knobe, Edouard Machery, Eddy Nahmias, and Thomas Nadelhoffer, among others, and philosophically-inclined psychologists like Joshua Greene, Tania Lombrozo, and Jennifer Cole Wright. Other contributors to this volume cover the span of work in the new experimental philosophy. As such, we will close by briefly discussing three trends in the new experimental philosophy over its first two decades and what these portend for its future.

We believe that there are five seminal papers from the first half of the aughts that really kicked-off the new experimental philosophy, formed philosophers' initial impressions of the sub-discipline, and contributed to its rapid growth: Weinberg, Nichols, and Stich (2001) on cross-cultural differences in epistemic intuitions (see Chapter 5 of this volume for a general discussion); a pair of papers by Knobe (2003a, 2003b) on intuitions about intentionality that introduced the side-effect effect (also known as the Knobe effect); Machery, Mallon, Nichols, and Stich (2004) on intuitions about reference (see Chapter 6); and Nahmias, Morris, Nadelhoffer, and Turner (2005) on intuitions about free will (see Chapter 11). Topically, these four projects might seem to inhabit rather disparate worlds of philosophical thought,[16] but they

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[16] And, to add to their differences, it may be worth noting that the five publications have not weathered subsequent empirical research equally well. For instance, replication efforts have tended to fail when it comes to the finding from Weinberg et al. (2001) that university students of Western cultural backgrounds were more likely than students of East Asian and South Asian backgrounds to report that the Gettier protagonist in their thought experiments lacks

also share much in common. Each of these papers employs a vignette design, giving lay participants (i.e., non-philosophers) a description of a philosophical case and soliciting their judgments (or "intuitions") about it. As such, these papers suggest a narrow definition of experimental philosophy, as described in Section 1, with x-phi being concerned with the empirical study of intuitions about philosophical cases. While this was never the whole of the empirical work being done by philosophers, it did set the standard impression of what x-phi is all about.

With this standard impression as background, the first trend in the new experimental philosophy we want to highlight is a broadening of approaches. While experimentalists have continued to explore judgments about philosophical cases using vignette methods, they've increasingly done a great deal more besides. They've conducted empirical studies to explore questions that have little directly to do with case intuitions, as illustrated by Nichols (2002) and Schwitzgebel (2009) in Section 2. And they've called on a much wider range of empirical methods, including methods from psycholinguistics and the digital humanities, as discussed in the next chapter. What we think this means is that it is now simply inappropriate to adopt a narrow view of experimental philosophy, and doing so promises to miss much of the most fascinating work being done in x-phi today. Looking toward the future, we only expect things to

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knowledge despite having a justified true belief. Not only have fairly close replication attempts failed to unveil this result (e.g., Kim and Yuan 2015, Nagel et al. 2013, Seyedsayamdost 2015), but also efforts at expanding on the original have not delivered clear successes (e.g., Machery 2017, Machery et al. 2017; but see Gonnerman et al. 2022 for an argument that claims to the effect that the Gettier intuition is universal are premature; see Cova et al. 2021 for a general look at the replicability of x-phi). On the other hand, subsequent research has largely tended to reinforce and deepen the original results for others. For example, Machery et al. (2004) show that East Asian participants are more likely than Western participants to report referential intuitions that track descriptions that speakers associate with the name, and thus to have intuitions that align more closely with the descriptive theory of reference. This finding has been further developed and replicated (e.g., Machery et al. 2009, Sytsma and Livengood 2011, Machery 2012, Machery et al. 2015, Sytsma et al. 2015, Beebe and Undercoffer 2016), although the case is not settled (for a recent meta-analysis, see van Dongen et al. 2021).

accelerate, with new cohorts of experimentalists bringing an even wider array of tools to bear on an ever expanding set of philosophical concerns.

The second trend we want to highlight also concerns acceleration; now not specifically with regard to methods and topics, but the amount of empirical work being done in philosophy. That there has been some such an acceleration is probably pretty clear, although its precise extent is less so. We can go some ways towards developing a more detailed picture, however, by turning to empirical methods—doing a bit of experimental metaphilosophy.

Knobe (2015) is a great example of this approach, and his work helps to establish the acceleration of x-phi as part of a more general trend within philosophy—that there has been an increase in the use of systematic empirical data, whether produced by the philosophers themselves (experimental philosophy) or not (empirical philosophy more generally). What Knobe did was to compare highly cited philosophical publications on the mind from two time periods: 1960 to 1999 and 2009 to 2013. He reports that there was a radical shift in the extent to which these works relied on systematic empirical research. Whereas only a minority (though still fairly substantial) proportion (37.6%) of the papers from 1960 to 1999 turned on empirical research, a majority (61.8%) of the contemporary papers depended on such research, with an additional proportion (26.8%) reporting original experimental results. All told, Knobe's work suggests that, in a span of around 50 years, there has been a substantial drop—from 62.4% to a mere 11.5%—in philosophical publications on the mind that rely on purely armchair methods.

Further evidence that there has been an acceleration in philosophy's reliance on systematic empirical research comes from Ashton and Mizrahi (2018). Applying the tools of data science and text mining to JSTOR (a digital library whose holdings include a wide range of philosophy journals), Ashton and Mizrahi report evidence of a slow but steady increase in the

use of inductive arguments in philosophy. More specifically, they found that, while the percentages of philosophical publications from 1840 to 2012 that contain deductive argument indicators (e.g., 'therefore necessarily') do reliably exceed the percentages of publications that contain inductive argument indicators (e.g., 'therefore probably'), nonetheless these percentages have been narrowing over time. This pattern of results is taken to indicate that the difference in ratios of philosophical publications advancing deductive arguments and those putting forward inductive arguments have been gradually declining over time. What matters for current purposes is that a decrease of just this sort is to be expected if there has been an acceleration in philosophical deployments of systematic empirical inquiry.

These two pieces of research suggest that in recent years philosophy has been swinging back toward serious engagement with empirical research, and provide a bit of evidence for an acceleration in experimental philosophy specifically. We can add to this evidence by turning to PhilPapers, which provides an expansive record of philosophical work broken down by topic or category at multiple taxonomic levels, including experimental philosophy. We exported a record of all publications in this category as of mid-January 2022 and then tallied them by year. Figure 2 shows the results across the first two decades of the twenty-first century. As the figure makes clear, the number of publications has rapidly increased across this span. And, indeed, a simple regression supports this conclusion: A negative binomial model found that publication year is a significant predictor of the number of publications (B=0.15, SEB=0.04, p<0.001, 95% CI [0.07, 0.24]).
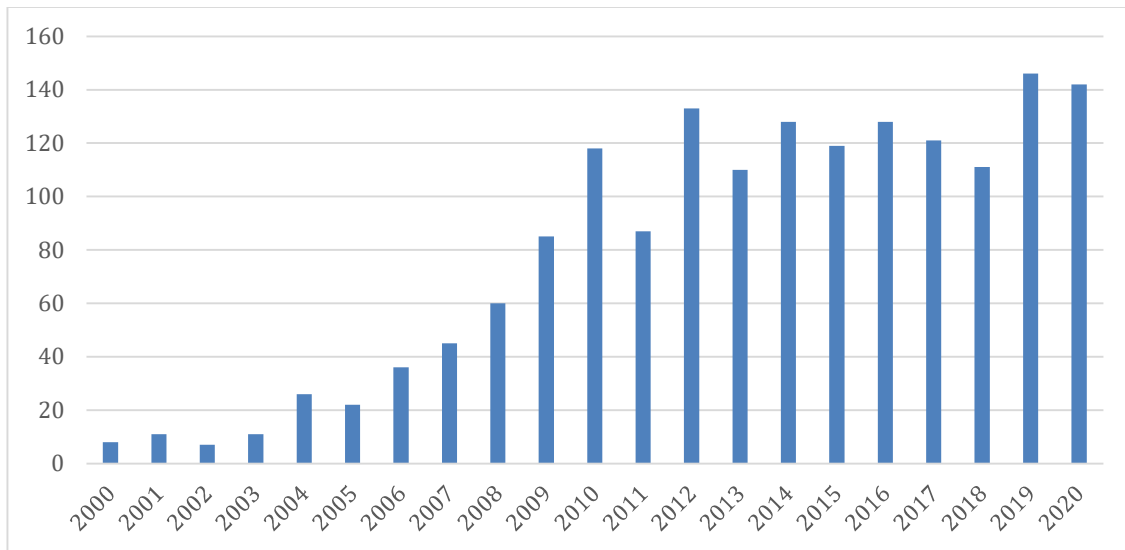
Figure 2. Publication counts for the "Experimental Philosophy" category on PhilPapers for 2000 to 2022

A third trend is drawn out by another piece of experimental metaphilosophy from Joshua Knobe. It is common to divide experimental philosophy into a negative program and a positive program. These programs have been characterized in different ways, but are often distinguished with regard to their attitude toward the evidential value of judgments about philosophical cases ("intuitions"). Knobe (2016) phrases this a bit more broadly, focusing on conceptual analysis (which has prominently featured case judgments). He then takes negative x-phi to involve work that "aims to engage negatively by providing evidence against the methodological assumptions of conceptual analysis itself" while positive x-phi, by contrast, "aims to make a positive contribution to conceptual analysis" (Knobe 2016, p. 38). In line with the first trend noted above, it is worth noting that some have drawn further divisions, including highlighting work that does not target intuitions in the first place, as well as noting experimental work that targets intuitions but isn't focused on their evidential value—what has been termed the neutral program (Sytsma and Machery 2013, Sytsma and Livengood 2015; see Chapter 2 of this volume for further discussion).

Knobe hypothesizes that despite what we might expect focusing on classic projects from the early years of the new experimental philosophy, most work in x-phi is not positive or negative. To test this, Knobe and Ike Silver used the PhilPapers database to generate a dataset of empirical studies from 2009 to 2013. Knobe then classified the studies based on whether they fell within the positive or negative programs. By his characterization, only 10.4% were positive and a mere 1.3% were negative. While one might question this classification, even if the numbers were several times what Knobe found, it would still indicate that a majority of work in x-phi over this period wasn't engaged with either the negative or positive programs. So, what are experimental philosophers doing? According to Knobe (2016, p. 39), "they are revealing surprising new effects and then offering explanations [of] those effects in terms of certain underlying cognitive processes".

There is a great deal to be said about Knobe's findings. The lesson we want to suggest, though, is that they indicate that the new experimental philosophy is maturing as a sub-discipline. While experimental philosophers are, of course, still engaged in classic philosophical debates like those concerning accounts of the reference of proper names and the relationship between free will and determinism, they are also increasingly forging their own paths, generating new topics of debates, often centered around understanding and explaining new insights that their empirical results have brought to light.[17] And this is a key trend we expect to see continue during the new experimental philosophy's third decade and beyond.

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[17] The literature growing out of Knobe's discovery of the side-effect effect is a prime example. Similar effects have been found for other types of judgments besides intentionality, spinning off literatures of their own. For instance, a wide range of studies have found that normative judgments matter for people's causal judgments (e.g., Knobe and Fraser 2008, Hitchcock and Knobe 2009, Sytsma et al. 2012, Kominsky et al. 2015, Icard et al. 2017, Henne et al. 2017, Livengood et al. 2017, Kominsky and Phillips 2019, Livengood and Sytsma 2020), leading to an extended back-and-forth as experimentalists attempt to explain these findings (see the discussions in Chapters 2 and 9 of this volume).

7. Conclusion

As we noted in the introduction, x-phi is philosophy with a little something extra. It does all the basic things we associate with philosophy in the analytic tradition—drawing distinctions, presenting arguments, engaging with the surrounding literature, and so on—but it also adds a further ingredient, presenting empirical results in support of the claims being made. We take this to reflect a base motivation behind contemporary experimental philosophy, with experimentalists being united by the methodological conviction that empirical claims call for empirical support and the attitude that they can do the work to provide this support when needed. This commitment to empirical support is neither new nor radical, however. As we have illustrated throughout this chapter, empirical claims have been common across the history of Western philosophy and appeals to empirical observation to support or subvert these claims have been equally common. While conceptions of philosophy have changed over time, in most, if not all, stages we find philosophers employing empirical methods in their philosophical explorations. From the earliest Greek philosophers to often overlooked projects from the twentieth century, we find the embryonic origins of a range of approaches and methods that we associate with x-phi. Thus, we shouldn't think of experimental philosophy in its current incarnation as an outlier, doing something odd, unique, or completely different; instead, we should think of x-phi as a living descendant that has inherited methods and approaches from the same origin as other philosophical methods and approaches.

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