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# Moderate Scientism in Philosophy\*

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Abstract: Moderate scientism is the view that empirical science can help answer questions in nonscientific disciplines. In this paper, we evaluate moderate scientism in philosophy. We review several ways that science has contributed to research in epistemology, action theory, ethics, philosophy of language, and philosophy of mind. We also review several ways that science has contributed to our understanding of how philosophers make judgments and decisions. Based on this research, we conclude that the case for moderate philosophical scientism is strong: scientific practice has promoted significant progress in philosophy and its further development should be welcomed and encouraged.

Keywords: scientism; experimentation; methodology; philosophical inquiry

## 1. Introduction

Scientism comes in many varieties (Stenmark 1997; Peels, this volume). One radical version of scientism is the view that science is the only way to acquire knowledge about

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reality (cf. Trigg 1993, p. 90; Rosenberg, this volume). Although radical scientism is a coherent view, it is either clearly false or trivial. On the one hand, many organisms gain knowledge about reality but are *incapable* of practicing science, in any recognizable sense of that phrase, in which case radical scientism is false. The list includes human infants, dolphins, snakes, frogs, sharks, octopi, spiders, and many others. On the other hand, suppose that “(practicing) science” is understood so loosely as to count these organisms as scientific practitioners. In that case, any way of knowing counts, by stipulation, as “science,” and radical scientism becomes trivial and uninteresting.

A less radical version of scientism is the view that science is a good way of answering any evaluable question (see also Radnitzky 1978, p 1008; Atkins 1995). The plausibility of this view depends mainly on what counts as practicing science and what makes for a good way to answer a question. For example, suppose your friend asks whether you heard what he just said. This is an evaluable — and in some contexts important — question. You immediately say, “Yes,” because it is fresh in your memory. Given the relative efficiency of simply relying on memory, it would be bad to instead respond by practicing science. To take another example, suppose your partner asks whether you still love them. It would be bad to begin evaluating the hypothesis “I still love you” via the scientific method. Of course, if simply relying on memory or attending to one’s feelings counts as practicing science, then this version of scientism also becomes trivial and uninteresting.

In this chapter, we will defend a more moderate claim concerning science: *moderate scientism*. Moderate scientism is the view that science can help answer questions in disciplines typically thought to fall outside of science. (This is very similar

to what Stenmark (2004) calls “scientific expansionism,” according to which “the boundaries of science can and should be expanded in such a way that something that has not been understood as science can now become a part of science” (Stenmark 2004, pp. xi–xii). Stenmark also calls this view “scientism” (Stenmark 2004, p. xii; see also Stenmark 2000.) As a proof of concept for moderate scientism, we will examine the role that empirical science has played in a discipline often perceived as far removed from empirical science: philosophy.

When practicing their trade, philosophers often appeal to ordinary usage of words and patterns of judgment or behavior. The basic assumption behind this approach is that patterns in ordinary thought and talk — at least about categories central to social cognition, such as knowledge, morality, belief, assertion, or freedom — can be used as evidence for philosophical theories of important categories. This approach is common throughout the history of philosophy. Aristotle, for instance, defended this approach when he wrote that one way to gather evidence in philosophy was to find a balance between different views about a philosophical topic “in the light not only of our conclusion and our premises, but also of what is commonly said about it” (Aristotle 350 BCE/1941, 1098b, 9-11). Thomas Reid thought, “Philosophy has no other root but the principles of Common Sense,” and that “severed from this root, its honours wither, its sap is dried up, it dies and rots” (Reid 1764/1997, p. 19). The approach remains popular today. For example, J.L. Austin advised that “ordinary language” should get “the first word” in philosophical theorizing (Austin 1956, p. 11). Wilfrid Sellars argued that identifying the defining features of ordinary thought — “the manifest image” — is “a task of the first importance” for philosophers (Sellars 1963, ch. 1). And David Lewis

warned, “When common sense delivers a firm and uncontroversial answer about a not-too-far-fetched case, theory had better agree” (Lewis 1986, p. 194).

To characterize ordinary thought and talk, philosophers often draw on their own experiences, social observation, and reflections about what we would say about certain situations (Ducasse 1941, ch. 10; Fodor 1964; Jackson 1998, ch. 2). Seminal philosophical work has relied on this kind of introspection and social observation, which is a natural place to start (e.g. Locke 1690/1975, bk. 4.11.3-8; MacIver 1938; Wittgenstein 1975). Indeed, we find it such a natural place to start that we ourselves have written papers contributing such observations to the literature (e.g. Buckwalter and Turri 2014). However, this method of gathering evidence is limited and in some cases has mischaracterized ordinary thought and talk (for recent reviews see Blouw, Buckwalter, and Turri Forthcoming; Turri Forthcoming-a, Forthcoming-b).

In the remainder of this paper, we review several ways that empirical science has helped philosophers accurately represent ordinary thought and talk. Experimental, observational and statistical techniques have significantly contributed to research in epistemology, action theory, ethics, philosophy of language, and philosophy of mind. We also review several ways that empirical science has contributed to our understanding of the judgments and decisions of professional philosophers themselves. Based on this research, we conclude that the case for moderate philosophical scientism is very strong: science has promoted significant progress in philosophy and its further development should be welcomed and encouraged.

## **2. Epistemology: Direct and Indirect effects**

A major debate in contemporary epistemology involves the influence that stakes have on knowledge attribution (DeRose 1992, 1995; Cohen 1999; Fantl and McGrath 2002; Hawthorne 2004; Stanley 2005; Fantl and McGrath 2007; DeRose 2009; Buckwalter 2010; May, Sinnott-Armstrong, Hull, and Zimmerman 2010; Pinillos 2012; Sripada and Stanley 2012; Cohen 2013; Buckwalter and Schaffer 2015). Many philosophers claim that ordinarily whether we attribute knowledge depends on how much is at stake or the consequences of error. In support of this claim, philosophers ask us to consider our intuitive reactions to pairs of cases that vary the stakes while stipulating that (something like) a “justified true belief” is held fixed. If knowledge attribution seems to vary along with stakes, then this is interpreted as important data to be accounted for by epistemological theory. For instance, some philosophers interpret this as “evidence of the very best type” that “knows” is a semantically context-sensitive expression (DeRose 2009, p. 81), while others interpret this as evidence that how much is at stake is part of what “makes true belief into knowledge” (Stanley 2005, p. 2).

One limitation of this research is that it often proceeds by explicitly stipulating some crucial details of the scenarios. But this does not correspond to the way people ordinarily make such attributions. Ordinarily people must decide these things for themselves in the context of a knowledge judgment. This raises questions about the ecological validity of judgments about the cases, and whether findings from them generalize to situations in which knowledge judgments naturally occur. Moreover, researchers stipulate crucial details without taking sufficient precautions to prevent other details of the case from interfering with the stipulations. This is potentially important

because recent research shows that many social evaluations, including the attribution of mental states like belief and knowledge, can occur implicitly and automatically (Bargh, Schwader, Hailey, Dyer, and Boothby 2012).

Another limitation of this research is that it features cases containing too many variables for introspection or social observation to reasonably track. For instance, in one influential exposition, readers are asked to sequentially consider five permutations on a single case, varying between approximately 100-150 words each (Stanley 2005, pp. 3-5). An optimal approach would not only keep track of all the variables but also estimate their interactions with each other and the cumulative impact that this has on knowledge attribution. Social and cognitive scientists have developed tools that can accomplish this. Combined with randomized assignment in a properly controlled experiment, statistical techniques ranging from basic regression to causal path analysis can be used to discern complex and unexpected relationships among variables (Chickering 2003; Iacobucci, Saldanha, and Deng 2007; Hayes 2013). For instance, such techniques can be used to evaluate whether varying stakes affects knowledge attribution and, if so, whether the affect is direct or indirect (i.e. mediated by other variables). These tools can also evaluate the relative strength of these effects and the overall contribution that they make in predicting knowledge attribution.

For precisely these reasons, researchers recently used these tools to study knowledge attributions (Turri, Buckwalter, and Rose 2015; Turri and Buckwalter 2015). They randomly assigned participants to consider one of two minimally-matched scenarios that varied the stakes. The construction of these scenarios was guided by prior empirical work from the judgment and decision-making literature, which identified several factors

that influence the perception of stakes (Beach and Mitchell 1978; McAllister, Mitchell, and Beach 1979). And instead of stipulating matters typically considered obvious or crucial for knowledge, researchers had the participants judge those matters for themselves, alongside judging whether the agent had knowledge.

Here is one pair of cases involving a protagonist who must make a decision in a low-stakes context (submitting a provisional report about whether an individual is “jogging” and on “a low-carb diet”) or a high-stakes (submitting a final report about whether the individual is a “threat” and “selling arms to terrorists”):

Jennifer is an intelligence analyst developing a file on Ivan, an elusive foreign operative. Jennifer has a source who tells her that Ivan stopped [his low-carb diet/selling arms to terrorists] and is no longer [jogging regularly/a threat]. Jennifer must submit a [provisional/final] report on Ivan to her supervisor within the hour. She will [definitely/definitely not] have a chance to revise her [provisional/final] report, and she [will not/will] be held accountable for decisions based on her [provisional/final] report.

After seeing either a low-stakes or a high-stakes case, participants judged the important details of the case for themselves. More specifically, they were asked to rate their agreement with these attributions:

1. Jennifer thinks that Ivan no longer [jogs regularly/is a threat].
2. It’s true that Ivan no longer [jogs regularly/is a threat].
3. Jennifer has good evidence that Ivan no longer [jogs regularly/is a threat].
4. Jennifer should write in the report that Ivan no longer [jogs regularly/is a threat].
5. Jennifer knows that Ivan no longer [jogs regularly/is a threat].



When researchers tested these cases on hundreds of participants, they found that stakes affected knowledge attributions (Turri, Buckwalter, and Rose 2015: Experiment 1). People were more likely to attribute knowledge in a low-stakes case than in a high-stakes case. In order to ascertain *how* stakes affected knowledge attribution, researchers used causal path analysis to model the relationships among stakes (the independent variable in this experimental design) and the five dependent variables (the five judgments that participants made about Jennifer's situation). On the best fitting causal model, stakes directly affected judgments about how Jennifer should act, and these judgments in turn directly caused judgments of what she knew. These results provide evidence that powerfully vindicates certain theoretical hypotheses about the connection between knowledge and action (e.g. James 1879/1948; Fantl and McGrath 2009), with a level of detail and precision unattainable without the tools of empirical science.

### **3. Ethics: Ought Implies Can**

A longstanding assumption in moral philosophy is that obligations entail the ability to fulfill them, typically glossed with the slogan "ought implies can." According to this principle, an agent is not morally obligated to act if she is unable to do so. Many contemporary philosophers endorse this principle (Moore 1922; Hare 1963; Van Fraassen 1973; Dahl 1974; Feldman 1986; Flanagan 1991; Zimmerman 1993; Streumer 2003; Howard-Snyder 2006; Vranas 2007; Copp 2008; Littlejohn 2012). Agreement on ought-implies-can is so widespread that direct arguments for it are rarely articulated (as observed by Stocker 1971, p. 303). When arguments do appear for the principle, they often appeal to judgments about particular thought experiments, intuitions about ordinary

usage, and claims to the effect that “ought implies can” is a core principle of commonsense moral cognition (Moore 1922, p. 317).

But not all philosophers endorse ought implies can without reservation. Some claim that the principle is “only partially correct” (Stocker 1971, p. 303) or that “ought” only pragmatically conversationally implicates “can” (Sinnott-Armstrong 1984). A handful of philosophers have even rejected the principle outright (Ryan 2003; Graham 2011). Critics frequently rely on intuitions about thought experiments. For example, they often ask us to imagine agents with various “psychological compulsions” such as kleptomania or addiction. If agents in these cases have an obligation to stop stealing or smoking but are unable to do so, then ought implies can is false (Blum 2000; Ryan 2003). Still others have constructed complex and imaginative thought experiments (Frankfurt 1969; Fischer 2003) or cases hinging on other decisive moral principles (Graham 2011) in an attempt to prime intuitions and arrive at a compelling counterexample. In response, champions of ought implies can have claimed that is “easy to deny” that these scenarios are genuine counterexamples (Graham 2011, p. 342).

Given that there seems to be fundamental disagreement in the field, it is natural to wonder whether ought-implies-can actually is a core principle of our moral cognition. Researchers recently set out to investigate this question experimentally (Buckwalter and Turri 2015). Instead of using complicated or fanciful thought experiments, they administered straightforward cases featuring ordinary agents with uncontroversial moral obligations frequently encountered in everyday life. When several simple and straightforward cases were tested on hundreds of participants, the overwhelming majority of people attributed moral obligations but denied the ability to fulfill them. In other

words, the result was that commonsense moral cognition utterly rejects ought-implies-can.

In one experiment, for instance, researchers presented participants with this basic scenario about an innocent bystander named Michael:

Michael is relaxing in the park when he sees a small girl fall into a nearby pond.

She is drowning and definitely will die unless someone quickly pulls her out. This part of the park is secluded and Michael is the only person around.

After seeing this scenario, participants saw one of two endings to the story that manipulated the protagonist's ability. In the unable condition, the protagonist was physically unable to act:

But Michael is stricken with a sudden paralysis in his legs and cannot swim to save the girl. As a result, Michael is not physically able to save the girl.

While in the able condition, the protagonist was physically able to act:

And Michael is a normal adult male and can swim fast enough to save the girl. As a result, Michael is physically able to save the girl.

After seeing one of these cases, participants were asked to select the best option that applies from the list of options below concerning moral obligation and ability:

1. Michael is morally obligated to save the girl, and Michael is physically able to do so.
2. Michael is morally obligated to save the girl, but Michael is not physically able to do so.
3. Michael is not morally obligated to save the girl, but Michael is physically able to do so.

4. Michael is not morally obligated to save the girl, and Michael is not physically able to do so.

If ought implies can is a central principle of moral cognition, then when people consider which option best applies to Michael, we would expect them to answer very differently depending on whether Michael is able or unable to act. Specifically, participants in the unable condition should strongly disprefer option 2, which says that Michael has an obligation he is unable to fulfill. However, researchers instead found that Michael's inability *made no difference at all* to people's judgments about moral obligation. In both conditions, the overwhelming majority of participants judged that Michael was morally obligated despite being able or unable to act. This same basic pattern of response is robust across a wide variety of narrative contexts, types of inability, and manner of probing for moral obligation.

#### **4. Philosophy of Mind: Mechanisms and Concepts of Belief**

A core question in philosophy of mind concerns whether beliefs can be voluntary. According to doxastic voluntarism, it is possible to have the same kind of willful control over our beliefs as we do over our actions. Doxastic involuntarists deny the possibility of controlling our beliefs this way.

Philosophers have traditionally been split on this issue. Descartes, Augustine, Aquinas, Pascal, James and others have favored doxastic voluntarism. But the dominant view in contemporary philosophy of mind is that beliefs are involuntary (Williams 1973; Alston 1988; Bennett 1990; Scott-Kakures 1994; Pojman 1999). Each side has claimed that their preferred view is obviously correct. For example, Descartes thought that our ability to voluntarily control belief was "so obvious" that "it must be regarded as one of

the first and most common notions that are innate in us” (Descartes 1644/1985, §39). Doxastic involuntarists respond that the notion of voluntary belief-formation is absurd, “chokingly unswallowable” (Bennett 1990, p. 90), or obviously impossible “as a conceptual matter” (Scott-Kakures 1994, p. 96).

Science is relevant to this debate in two important ways. First, cognitive science is best positioned to investigate the human mind’s powers, including whether it is capable of forming beliefs at will. If belief-formation was found to be, say, insensitive to experimental interventions on willpower or volitions, then it would support involuntarism. By contrast, if belief-formation was found to be directly sensitive to such interventions, then it would support voluntarism. Recent evidence suggests that basic physiological processes, such as heart rate, are subject to voluntary control (Lehrer, Sasaki, and Saito 1999), but we are unaware of any related research on belief-formation. Nevertheless, if something as basic as cardiac rhythm is open to some degree of voluntary control, then it would not be surprising if belief-formation was too (compare Naylor 1985)

Second, science can help evaluate whether the ordinary concept of belief rules out voluntarism. Initially, this would involve a simple experiment randomly assigning people to assess one of two minimally-matched scenarios. Minimally matched scenarios differ from one in another only with respect to the variable of interest their comparison is intended to test. One group reads a scenario in which an agent professes to choose to form a certain belief, and the other group reads a scenario in which the agent does not do this. Then participants rate whether the agent believes the relevant proposition. If voluntary belief-formation is conceptually impossible, then we would expect no

difference in belief-attribution across the two conditions. As it turns out, this experiment has already been done (Turri, Rose, and Buckwalter 2015). The agent's professed choice to believe (or disbelieve) the proposition had an extremely large effect on whether participants attributed belief to him. When the agent professed to choose to believe the proposition, participants attributed the belief to him. When the agent professed to refuse to believe the proposition, participants did not attribute the belief to him. Follow-up studies revealed that this same basic pattern persists across different narrative contexts and ways of probing for belief-attribution, that belief-attribution was affected by interventions on the agent's perceived willpower, and that the agent's professed volitions can be a much stronger cue to belief-attribution than even the agent's evidence is.

In one follow-up study, for instance, participants were divided into six groups. They each read a story about Malcolm receiving a weather report that indicated there was either a 5%, 50%, or 90% chance that it would rain the next day. Then participants were told either that Malcolm is optimistic and says, "I refuse to believe it will rain," or that he is pessimistic and says, "I choose to believe it will rain." Participants overwhelmingly denied belief in the optimistic condition and attributed belief in the pessimistic condition. By contrast, the strength of Malcolm's probabilistic evidence (5%, 50%, or 90%) had only a small effect on belief-attributions. These results suggest that the ordinary concept of belief fully countenances the possibility of voluntary belief. Indeed, ordinary belief-attributions can be more sensitive to the agent's volitions than his evidence.

## **5. Action Theory: Representation of Thought Experiments**

Philosophers frequently use thought experiments to generate evidence for or against theories. Thought experiments often feature highly fanciful situations involving complex

events, underspecified details, and unrealistic outcomes. For example, the following thought experiment was designed to test whether people intuitively judge that *acting freely* is compatible with a deterministic scenario in which *perfect prediction* of human choices is possible:

Recent brain scanning studies have shown that specific patterns of brain activity can be used to predict simple decisions several seconds before people are consciously aware of those decisions. Imagine that in the future brain scanning technology becomes much more advanced. Neuroscientists can use brain scanners to detect all the activity in a person's brain and use that information to predict with 100% accuracy every single decision a person will make before the person is consciously aware of their decision. The neuroscientists cannot, however, do anything to change brain activity and hence they cannot directly influence thoughts and actions. Suppose that in the future a woman named Jill agrees, as part of a neuroscience experiment, to wear this brain scanner for a month (it is a lightweight cap). The neuroscientists are able to use real-time information about her brain activity to predict everything that Jill will think or decide, even before she is aware of these thoughts or decisions. However, they cannot alter her brain activity to change what she thinks and does. On election day, Jill is considering how she will vote for President and for Governor. Before she is aware of making any decisions, the neuroscientists can see, based on her brain activity, that she is about to decide to vote for Smith for President and Green for Governor. Just as the neuroscientists predicted, Jill votes for Smith for President and Green for Governor. As with her decisions to vote for Smith for President and Green for

Governor, the neuroscientists are able to predict every decision Jill ends up making with 100% accuracy while she is wearing the scanner. Occasionally, Jill tries to trick the neuroscientists by changing her mind at the last second or by stopping herself from doing something that she just decided to do, but the neuroscientists predict these events as well. Indeed, these experiments confirm that all human mental activity is entirely based on brain activity such that everything that any human thinks or does could be predicted ahead of time based on their earlier brain activity. (Nahmias, Shepard, and Reuter 2014, p. 514)

Some researchers found that people overwhelmingly agreed that Jill voted of her own free will (Nahmias et al. 2014, Experiment 1). Since it was stipulated in the thought experiment that “neuroscientists are able to predict every decision Jill ends up making with 100% accuracy,” they concluded that our concept of free will is not threatened by and is compatible with the future possibility of perfect neuro-predictability of human behavior. However, one potential worry is that people’s judgments might be due to misunderstood, ignored, or unspecified details that they systematically “fill in” by relying on background assumptions. This might be especially likely to happen when participants are asked to consider highly contrived and unfamiliar scenarios.

A properly conducted experiment can address this worry and thereby help philosophers discover how we would ordinarily think about or categorize Jill’s behavior in this scenario. For example, another group of researchers recently tested whether key details of the thought experiment just described were being represented when people agreed that Jill acted freely (Rose, Buckwalter, and Nichols 2015). They administered the same thought experiment verbatim but also included a series of follow-up questions.



Crucially, one question measured whether participants accepted that Jill's action was determined. It turns out that they did not. Instead, they judged that Jill could have voted for a different candidate, despite the occurrence of a perfectly predictive pattern of brain activity to the contrary. In fact, mediation analysis suggested that ascribing free will actually *caused* people to interpret the case in a way that is inconsistent with determinism. These results cast doubt on the claim that such cases demonstrate that people are "intuitive compatibilists." For although people attributed free will, they did not view the agent's actions as determined. This result also serves as another demonstration of how scientific tools can be used to aid philosophical inquiry. When philosophers engage in thought experiments, these tools can help to estimate whether the key variable of interest is accompanied and informed by other philosophically relevant variables.

## **6. Philosophy of Language: Assertion**

Assertion is the main way in which human beings communicate information to each other. An important question at the intersection of philosophy of language and epistemology involves the standards for assertion. What rules or norms govern when an assertion should be made? Some philosophers defend *factive accounts* of the norm. A factive account entails that only true assertions should be made. The most popular factive account is *the knowledge account*, which says that you should assert a proposition only if you know that it is true (MacIver 1938; Moore 1962; Unger 1975; Williamson 2000; Hawthorne 2004; Schaffer 2008; Turri 2011, 2013a; for a review, see Benton 2014).

Many critics reject factive accounts on the charge that they do not reflect ordinary thought and talk associated with the social practice of assertion (e.g. Douven 2006; Hill and Schechter 2007; Lackey 2007; Kvanvig 2009). In place of the knowledge norm,

critics have defended a range of non-factive accounts that base the standard for assertion on belief (Bach and Harnish 1979; Bach 2008) or justified belief (Douven 2006; Lackey 2007), which do not demand that an assertion be true. These philosophers argue that non-factive accounts better “explain” or “accommodate” “our intuitions” about assertions (Douven 2006; Lackey 2007).

There is a straightforward way to test these claims about what is intuitive or accommodating: study how ordinary language-users evaluate assertions. When researchers studied this in controlled experiments, they found that truth had a profound effect on whether people thought an assertion should be made (Turri 2013a). In one study, for example, participants read a simple story about a watch collector, Maria, who maintains a detailed inventory of the thousands of watches she owns. Someone asks her whether she owns a 1990 Rolex Submariner, so she consults the inventory, which she knows is imperfect but extremely accurate. One group of participants saw the story continue in a way that made Maria’s belief about the watch true:

And this is just another case where the inventory is exactly right: she does have one.

Another group of participants saw the story continue in a way that made Maria’s belief false:

But this is one of those rare cases where the inventory is wrong: she does not have one.

When Maria’s belief was true, nearly all participants (97%) judged that she *should* tell her guests that she has a 1990 Rolex Submariner. But when Maria’s belief was false, the vast majority of participants (80%) judged that Maria *should not* make the

assertion. In other words, holding fixed the assertion's evidential basis and changing only its truth-value caused an enormous shift in how people evaluated the assertion. This same basic pattern persisted across different narrative contexts and ways of probing for evaluations across several experiments. The results demonstrate that most people do not find factive accounts of assertion counterintuitive. Science revealed that non-factive accounts do not cohere well with our ordinary social practice.

## **7. Methodology: Philosophical Judgments, Decision Making, and Behavior**

Science has recently begun shedding light on how professional philosophers make decisions about important questions. One group of studies pertains to whether philosophers are susceptible to well-known cognitive biases (Jones and Nisbett 1971; Tversky and Kahneman 1974) when reasoning about philosophical matters. The main finding here is that professional philosophers are equally susceptible to these biases as other people. For example, professional philosophers are susceptible to order effects when making philosophical judgments about cases (Swain, Alexander, and Weinberg 2008; Liao, Wiegmann, Alexander, and Vong 2012; Schwitzgebel and Cushman 2012, Forthcoming). Professional philosophers also exhibit framing effects, such as whether a scenario is considered from the perspective of an actor or an observer (Tobia, Chapman, and Stich 2013; Tobia, Buckwalter, and Stich 2013), or whether salient features are described in terms of a gain or a loss (Schwitzgebel and Cushman Forthcoming).

Another group of studies pertains to how individual differences affect professional philosophers' judgments. For example, researchers have found that heritable personality traits such as extraversion or emotional stability correlate with judgments about free will and moral responsibility in lay populations (Feltz and Cokely 2009; Feltz

2013), and that this may also be true to some extent of professionals (Schultz, Cokely, and Feltz 2011). Researchers in experimental epistemology have argued that intuitions among professional philosophers about knowledge may be influenced by their native language (Vaesen, Peterson, and Van Bezooijen 2013). Research has also suggested that intuitions about the reference of proper names vary according to academic areas of specialization within philosophy and linguistics (Machery 2012) as well as across western and east Asian cultures (Machery, Olivola, and Blanc 2009; Sytsma, Livengood, Sato, and Oguchi 2015). At the same time, researchers have also found evidence that some philosophical intuitions may be shared by individuals across many different cultures, which some have argued is essential for understanding their evidential significance (Turri 2013b; Kim and Yuan 2015; Machery et al. Forthcoming).

A related but distinct line of research investigates how specialization in philosophy impacts the behaviors of professional philosophers in their daily lives. This work has mainly examined whether training in ethics encourages moral and other pro-social behavior such as answering student emails, voting, staying in touch with one's mother, or being considerate to others in various ways at professional conferences (Schwitzgebel 2009; Schwitzgebel and Rust 2009, 2010; Schwitzgebel, Rust, Huang, Moore, and Coates 2011; Rust and Schwitzgebel 2013; Schwitzgebel and Rust 2013). Researchers have found little if any evidence professional training in ethics promotes better behavior. The results of one recent meta-analysis found no difference between ethicists and non-ethicists, despite including over 18,000 individual observations across 18 different measures of behavior (Schwitzgebel and Rust Forthcoming).

## **8. Conclusion**

Moderate scientism is the view that science can help answer questions in disciplines typically thought to fall outside of science. In good scientific spirit, we have approached moderate scientism as a hypothesis to be evaluated in light of existing evidence.

As a case study, we reviewed a range of recent scientific work focused specifically on questions of longstanding philosophical interest, and on the judgments and behavior of professional philosophers themselves. In each case, scientific research deepened our understanding of the underlying issues and advanced the debate. For example, when it comes to assessing the relationship between stakes and knowledge attributions, advanced statistical techniques produced a clear and testable model of a complex set of variables, which even the most astute introspection or observation is helpless to evaluate when unaided by the tools of cognitive and social science. Behavioral experiments showed that commonsense morality implicitly rejects the “ought implies can” principle, that the ordinary concept of belief allows for the possibility of voluntary belief-formation, that subtle misinterpretations can lead us to misunderstand the true meaning of our intuitive reactions to philosophical thought experiments, and that objections to certain theories about assertion are deeply mistaken. A series of recent empirical studies has also revealed the extent to which professional philosophers, just like ordinary people, exhibit a suite of cognitive biases affecting judgments about philosophically important categories.

In light of all this, we conclude that, at least with respect to philosophy, moderate scientism is true. Scientific research has promoted significant progress in philosophy and its further development within the field should be welcomed and encouraged.

Philosophers often appeal to ordinary patterns of judgment and behavior. The methods and techniques of science have helped philosophers to accurately represent how these things work. In some cases, these techniques track complex relationships beyond anything that introspection or social observation could otherwise reasonably track. (The best example of this reviewed here is the work on knowledge attributions and stakes, which used multiple linear regression and causal modeling.) This suggests that sometimes scientific tools are a practical necessity when addressing certain philosophical issues.

There is at least one noteworthy limitation to our conclusion. Nearly all of the research we reviewed focused on concepts central to social cognition and evaluation. Broadly speaking, it focused on judgments pertaining to knowledge, belief, moral obligations, abilities, and actions. But some areas of philosophy are not primarily concerned with these categories. For example, some logicians focus on the relationship of logical consequence and some metaphysicians focus on the ultimate basis of attribute agreement. It might be claimed that commonsense categories and even the entirety of empirical science are completely irrelevant to philosophical inquiry in these areas. We acknowledge that nothing we have said here casts doubt on this claim. Ultimately, such things are best evaluated on a case-by-case basis (for examples of such evaluations, see Paul Forthcoming; Ripley Forthcoming).

We suspect that our conclusion about moderate scientism in philosophy generalizes to neighboring fields in the humanities. Although details will vary across different areas of inquiry, all responsible researchers seek accurate and detailed evidence for their conclusions. As the name “humanities” suggests, humanities research essentially involves human perceptions, reactions, and evaluations of worldly affairs. We deny that

science is essential to all knowledge and evidence (see the Introduction), and we do not believe that all phases of humanistic scholarship must be modeled after science. Nevertheless, social and cognitive science provide excellent tools for collecting, analyzing, and interpreting human perceptions, reactions, and evaluations. Thus, we expect that the benefits of philosophical science will be reflected in other areas of the humanities.

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