

Andrew Bacon, *Vagueness and Thought*. Oxford: Oxford University Press, 2018. xvi + 340 pp.

Many investigations of vagueness treat it as primarily a linguistic phenomenon. Their task, as they see it, is to give a model of the meanings of vague words and use it to analyze the sorites paradox, borderline cases, and other phenomena distinctive of vagueness. Nobody would deny that, in addition to saying vague things, we think vague thoughts. But on the standard approach, the investigation of vague language is primary, and what we say about vague thought is derivative from this. Thought is an afterthought.

The main aim of Bacon's impressive book is to argue that this approach is backwards. According to Bacon, we should start by investigating vagueness in thought, and explain linguistic vagueness in terms of it. In embracing this order of explanation, he sets himself apart not just from supervaluationists, who typically think of vagueness as a matter of "semantic indecision," but also from epistemicists (like Williamson 1994), who explain our ignorance in borderline cases in terms of our ignorance about the way the meanings of vague terms depend on use.

Bacon gives several reasons for taking vagueness in thought to be prior to linguistic vagueness. First, explanations of our ignorance in borderline cases that refer to linguistic facts do not have the right kind of generality. If it's a fact that nobody can know whether a glass that is two-thirds full is pretty full, this is a fact that holds across linguistic communities, and should hold even for nonlinguistic agents. It should not be explained, then, in terms of facts about linguistic usage. Second, our perceptual evidence, which seems independent of language, is vague. Third, we can explain nonlinguistic behavior in terms of vague beliefs and desires. Since vague beliefs and desires have a different bearing on the rationality of action than precise ones, we need a distinctive account of them.

Vagueness in thought is to be explained, Bacon thinks, by theorizing about the distinctive *contents* of vague thoughts, and about the roles these contents play in a theory of rational propositional attitudes. This is already a substantive move. One might have tried to understand vague thoughts as involving distinctive *modes of presentation*, so that a vague thought and a precise one could have the same content, presented in different ways. Alternatively, one might have said that a vague thought has the same content as some precise thought or other, but that it is not determinate *which*. Bacon rejects these approaches, holding instead that there are vague propositions which are not identical to any precise propositions, and that vague thoughts are thoughts whose contents

are vague propositions. This strategy is motivated, in part, by Bacon's desire to use standard decision theory as a theory of rational action in light of vague attitudes. Standard decision theory has no place for modes of presentation or for indeterminacy about the contents of attitudes. So, if vague attitudes have a distinctive bearing on rational action, and we are to explain this using standard decision theory, vague attitudes must have distinctive contents.

The application of standard decision theory presupposes that agents have credences in vague propositions, and that these credences are rationally required to conform to the standard probability axioms. Many theorists have questioned these presuppositions. Field (2000), for example, has argued that taking it to be borderline whether p involves having the minimal degree of belief (0) in both p and its negation. Schiffer (2003) has argued that the ambivalent attitude we take towards borderline propositions is fundamentally different from credence, and subject to different norms. And according to Rinard (2015), one's credence in a proposition one takes to be borderline will be indeterminate, and can only be described as lying within a certain range. Although Bacon argues at length against Field's position, he has much less to say against the other alternatives. He briefly considers approaches that would assign sets or ranges of credences to vague propositions, rejecting them because they imply that we can have incomparable preferences, but giving no compelling reason to rule these out. Oddly, he doesn't even mention the central argument motivating Schiffer's theory, which seems to pose a real challenge to Bacon's own approach. Schiffer observes that if we have middling degree of belief that Harry is bald, that he is tall, and that he is funny, because he is a borderline case in all three dimensions, we should also have middling degree of belief that he is tall, bald and funny. This is not what one would expect if these degrees of belief are ordinary credences, since the probability of a conjunction of three independent propositions with credence $1/2$ will be $1/8$.

In addition to classical probability theory, Bacon embraces classical logic for vague propositions, taking the propositions to form a Boolean algebra.

In many of the respects in which other theorists have distinguished vague and precise contents, then, Bacon treats them the same. Vague propositions stand in entailment relations governed by classical logic. We have credences in vague propositions that are subject to the constraints of probability theory. We assign utilities to vague propositions and act rationally when our choices maximize expected utility. So what does Bacon think is distinctive about vague propositions? Given Bacon's preferred or-

der of explanation, the answer cannot have anything to do with the distinctive features of vague language. Instead, Bacon seeks to describe the distinct role vague propositions play in our thought. He does this by positing two principles relating the vague to the precise.

According to the first principle, Rational Supervenience, every rational, conceptually coherent ur-agent will agree on the probability of each vague proposition conditional on each way of settling all the precise facts (each maximally consistent precise proposition). This means that “there cannot be rational differences of opinion that are solely differences of opinion about the vague” (193): one cannot rationally disagree about whether Harry is bald, for example, without disagreeing about the probability that Harry has a certain number of hairs.

The second principle, Indifference, makes a similar claim about the relation between vague and precise preferences. According to Indifference, there cannot be rational differences of preference that are solely differences of preference about the vague: “every rational set of preferences is indifferent between any two vague propositions that settle all precise matters in the same way” (38). That’s not to say that two people can’t rationally differ in their preferences about, say, being rich. They can do so if they also have different preferences about, say, having a million dollars. But according to Indifference, differences in one’s preferences about being rich must be grounded in differences in one’s preferences over precise states of affairs. It is irrational to prefer an outcome in which one counts as rich to one in which one does not count as rich, if these outcomes agree in all matters of precise fact, including how much money one has, how expensive things are, how one stands financially in relation to others, and how one is treated.

These two principles, Rational Supervenience and Indifference, help to distinguish Bacon’s view from standard epistemicism. If vagueness were merely an epistemic phenomenon, Bacon notes, there would be no reason to accept either principle (46). It is compatible with epistemicism that the vague is doxastically and preferentially autonomous from the precise in a way that Rational Supervenience and Indifference rules out.

Why should we accept these principles? They are not so much argued for as stipulated. Bacon seems to find them intuitively compelling, and he hopes that we will appreciate their theoretical fruitfulness. For example, they make possible a nice account of the evidential import of imprecise evidence: given Rational Supervenience, conditioning on a vague proposition is equivalent to Jeffrey conditioning on a partition of

maximally strong consistent precise propositions (113). In the final part of the book, Bacon shows how both principles can be derived from a more fundamental account of vagueness and precision in terms of *symmetries*: automomorphisms on the space of propositions that preserve the preferences and credences of rational ur-agents. The precise propositions are those that are mapped to themselves by every such automorphism, and the vague propositions are those that are not. But of course, this is not an independent argument, since the definition of vagueness in terms of rational symmetries is only plausible if it is irrational to disagree about the vague without disagreeing about the precise. So it is worth pausing to appreciate how non-obvious—I would say counterintuitive—this idea is.

Consider first Indifference. It doesn't seem implausible that our most fundamental desires, the things we desire intrinsically, are vague things like health, wealth, wisdom, peace, love, friendship, happiness. A long tradition in philosophy holds that we desire precise things, like a 5% pay increase or 21 grams of cake, because we think having them would help satisfy these vague desires. Indifference says otherwise. Bacon notices this and bites the bullet: "Happiness is not something you can directly pursue," he says, "it is a side effect of pursuing more specific things, and it is those things that you should care intrinsically about" (197). Perhaps Bacon (and many a self-help book) is right that one can achieve happiness only by pursuing more concrete goals. But that is just a matter of strategy: why does it follow that one should not value happiness intrinsically? And should an account of vagueness really settle longstanding controversies about final ends in ethics?

Rational Supervenience also has some surprising consequences. Suppose Amy and Beth are two ur-agents who have the concept of baldness but lack any specific evidence about the world. After learning all the facts about the number and arrangement of hairs on Harry's head (and any other relevant precise facts), Amy has a credence of 0.82 that Harry is bald, while Beth has a credence of 0.78. According to Rational Supervenience, at least one of them must be irrational or conceptually confused (in the way one would be if one thought a male cat could be a vixen, 64). Full possession of the concept of baldness, Bacon thinks, requires perfectly matching a prior probability distribution. If the epistemicist invites an incredulous stare for positing a fact of the matter about which was the last nanosecond of one's youth, Bacon's view seems even more incredible. Not only does it accept that there is a last nanosecond of one's youth, it holds that two conceptually unconfused agents with full knowledge of the precise facts about one's devel-

opment must assign exactly the same probability to any particular nanosecond's being this last youthful moment.

One naturally wonders how, on such a view, two people could ever share a concept? Surprisingly, this question isn't addressed anywhere in the book. Perhaps that is because Bacon thinks of it as an issue of language: if 'Harry is bald' expresses a different proposition when I say it than when you say it, that is a fact about the sentence, not the vague thought I express by it. But surely it would be a strike against any theory of vague thought if it made it impossible (or prohibitively difficult) for two people to entertain the same content. (We think together with others; we ascribe thoughts to others; we agree and disagree.) Bacon could secure sameness of content by embracing a strong form of anti-individualism, but I would have liked to have been persuaded that doing so would not compromise the explanatory ambitions of his theory.

Also notably absent from Bacon's book is any treatment of the contextual flexibility of vague words and concepts—the way the boundaries they draw can shift dynamically in light of our interests and purposes. This has been a major focus of recent work on vagueness (for example, Raffman 1996; Soames 1999; Fara 2000; Barker 2002; Shapiro 2006). Perhaps Bacon supposes that even if vague *language* is dynamic and contextually sensitive, vague *thought* can be studied in a purely static way. But why think that the only thing that evolves in our thinking are the credences we assign to propositions? Why not suppose that, in our thinking as in conversation, we make *decisions* about what counts as, say, bald, and progressively firm up our plans in this regard (MacFarlane 2016)? Bacon's account of vagueness in thought has no room for this dynamic, deliberative element, which does not seem intrinsically limited to the linguistic.

Though I find Bacon's view of vagueness impossible to accept, I still think this is a terrific book. Bacon has a wonderful sense for which issues are substantive and which merely superficial, and in focusing our attention on Rational Supervenience and Indifference, he has opened up some genuinely new questions. In addition to the main line of thought sketched above, the book contains illuminating treatments of many connected topics (for example, the connections between necessity and determinacy). It will richly reward anyone with an interest in its subject.

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