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Demarcation, Definition, Art

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Abstract

Much philosophical energy has been spent on demarcation questions – in philosophy of science, most notoriously, but also in philosophy of logic, and aesthetics. The question of how to demarcate science from pseudo-science, once regarded as central, commands relatively little attention today. In the philosophy of logic, by contrast, the problem of demarcating the logical constants is far less skeptically regarded. In aesthetics, where the problem is how to demarcate art from non-art, the question as to whether the problem is a real one or a pseudo-problem also continues to be debated. The hypothesis that the demarcation questions in these three areas are parallel, or at least similar enough to be interesting, is discussed. Some arguments for the conclusion that the demarcation problem is a pseudo-problem are considered, as are some demarcation proposals of a deflationist or minimalist sort. All are found wanting.

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It is not hard to imagine a philosopher saying something like this:

While it is generally agreed that *a*, *b*, *c*, should count as art, and that *d*, *e*, and *f* should not, there is a vast disputed middle ground. Is *g* art? Are *h*, *i*, and *j*? What about *k* and *l*? In these border areas our intuitions from paradigm cases fail us; we need something more principled. However, there is little philosophical consensus about the basis for the distinction between art and non-art. Until this question is resolved, we lack a proper understanding of the scope and nature of art.

Except for the last sentence, which raises a question that will be addressed below, and assuming sensible choices as to the values that *a*, *b*, *c*, etc. take, this seems a reasonable remark. In fact, though, the ‘quotation’ is based on the following (MacFarlane, 2009):

While it is generally agreed that signs for negation, conjunction, disjunction, conditionality, and the first-order quantifiers should count as logical constants, and that words like ‘red’, ‘boy’, ‘taller’, and ‘Clinton’ should not, there is a vast disputed middle ground. Is the sign for identity a logical constant? Are tense and modal operators logical constants? What about ‘true’, the epsilon of set-theoretic membership, the sign for mereological parthood, the second-order quantifiers, or the quantifier ‘there are infinitely many’? Is there a distinctive logic of agency, or of knowledge? In these border areas our intuitions from paradigm cases fail us; we need something more principled.... However, there is little philosophical consensus about the basis for the distinction between logical and nonlogical expressions. Until this question is resolved, we lack a proper understanding of the scope and nature of logic.

One can also imagine an actual philosopher saying this:

There is no delineation of the sciences. We can at best list them. It is as if we could characterize the concept *planet of the sun* only by reciting: Mars, Venus, Earth, etc., and could not tell by any general principle whether the heavenly body epsilon is a planet or not. We have a laundry list of the sciences, but no characterization of what a science is – except a circular one....My focus will be the demarcation of science: What distinguishes science from the extra-scientific?

This too seems a reasonable remark. As a matter of fact, though, it is not a real quotation. But it is based on a real quotation from a well-known paper -- entitled ‘What is Logic?’ -- in which Hacking writes (Hacking 1979):

But, as Tarski had earlier implied, there is no delineation of the logical constants. We can at best list them. It is as if we could characterize the concept planet of the sun only by reciting Mars, Venus, Earth, etc., and could not tell by any general principle whether the heavenly body epsilon is a planet or not. We have a laundry list of logical constants, but no characterization of what a logical constant is-except the circular one, that logical constants are those which occur essentially in analytic truths.'

One could imagine a philosopher, in a similarly abstract spirit, saying this: Here is a standard enumeration of the F's, from an influential text on the philosophy of F: '*a, b, c, etc.*' The 'etc.' of course helps not at all, since one is given no indication of what would count as a permissible addition to the list.¹

Is 'F' intelligibly replaced by 'art'? 'science'? 'logical constant'? The sensible answer is: *all three*. If it would not be unreasonable to say that each of the passages above could intelligibly have been written about art, or about science, or about logic, then it is worth considering the idea that there are significant similarities between the demarcation problems in aesthetics, philosophy of science, and philosophy of logic. If this is true, then we would expect to see similar arguments occur across those three domains. Moreover, as the quotations make clear, the idea that a laundry list constitutes an adequate answer to the demarcation question is not well regarded, at least among some well-respected philosophers of logic. If so, then laundry lists will, similarly, make for inadequate answers to demarcation questions in philosophy of science and in aesthetics.

The demarcation problem and its alleged demise – Laudan

If it is granted, provisionally, that the demarcation question is importantly similar across philosophy of science, aesthetics, and philosophy of logic, it would be significant if it turned out to be a bad question. In an influential polemic, 'The Demise of the Demarcation Problem,' Laudan claims just that, concluding that (i) there are no epistemic features that all and only scientific disciplines share, and that (ii) the history of the attempts to demarcate science suggests that the quest for a demarcation device is not viable (Laudan 1983).² Laudan's main argument amounts to this:

1. Some scientific theories are well tested, others aren't;
2. Some branches of science are presently showing high growth rates;

¹ The 'quotation' is based on a remark by another influential philosopher of logic, Susan Haack, citing - and tacitly complaining about the limitations of -- Quine's enumerative treatment of the logical constants. Haack, *Philosophy of Logics*, p. 23.

²Laudan, (1983), '[The Demise of the Demarcation Problem](#),' in Cohen, R.S.; Laudan, L., *Physics, Philosophy and Psychoanalysis: Essays in Honor of Adolf Grünbaum*, Boston Studies in the Philosophy of Science, **76**, Dordrecht: D. Reidel, p. 118.

- others aren't.
3. Some scientific theories have made many successful predictions of surprising phenomena; others haven't.
 4. Some scientific hypotheses are *ad hoc*; others aren't.
 5. So, there are no epistemic invariants across scientific activities/beliefs/methods. (1 – 4)
 6. If there are epistemic invariants in science, then they consist in activities/beliefs/methods. (implicit)
 7. So, there are no epistemic invariants across science. (5, 6)
 8. Science can be demarcated from non-science by means of an epistemic demarcation criterion only if there exist epistemic invariants across science. (implicit)
 9. So, science can't be epistemically demarcated from non-science. (7,8)
 10. The only possible demarcation criterion is an epistemic one. (implicit)
-
11. So, there is no demarcation criterion. (9,10)

There are several problems here. One might wonder, first, how strong the inductive stage of the argument is, and whether Laudan would endorse its extension to other philosophical domains.¹ Second, a narrow sense of 'epistemic invariant' seems to be in play: Laudan assumes that only beliefs and activities and 'modes of inquiry' are reasonable candidates for epistemic invariants. It is unclear that this list is complete: it might be thought that ideals and desires can be epistemic (and invariant). What licenses the assumption that the only possible demarcation criterion is an epistemic one, narrowly construed? Third, the meaning of Laudan's conclusion is not obvious. It is highly implausible if taken to mean that there is no difference between science and non-science. In fact, probably Laudan means that there is no absolutely sharp distinction: he writes that an adequacy condition on any demarcation criterion is that it be precise enough to be used to tell whether 'various beliefs and activities we are investigating do or do not satisfy it'; if not, Laudan says, then 'it is no better than no criterion at all.'² This is wrong, if it means that every candidate for a demarcation criterion that permits borderline cases should be rejected for that reason alone. On the contrary, given the ubiquity of vagueness, we should *predict* borderline cases. Failing to specify a sharp line doesn't disqualify a candidate demarcation criterion. Rather, if a sharp line can be specified, that fact should make us skeptical about the reality of what is being classified.

¹ For the same objection to the inductive argument to the conclusion that the search for a demarcation criterion for art is doomed, see Robert Stecker's 'Is it Reasonable to Attempt to Define Art?' in N. Carroll, *Theories of Art* (University of Wisconsin Press 2000).

² Cf. Robert Pennock: 'Laudan's entire critique of demarcation... expects a precise line that can unambiguously rule any possible theory in or out of science....' *Synthese* (2011) 178:177–206, p. 184.

A Peircean proposal

An approach that rejects a number of Laudan's central assumptions about the nature of science is Peirce's. In one of his many meditations on the essence of science, Peirce claimed that science is a 'mode of life'

whose single animating purpose is to find out the real truth, which pursues this purpose by a well-considered method, founded on thorough acquaintance with such scientific results already ascertained by others as may be available, and which seeks cooperation in the hope that truth may be found, if not by any of the actual inquirers, yet ultimately by those who come after them and shall make use of their results. It makes no difference how imperfect a man's knowledge may be, how mixed with error and prejudice; from the moment that he engages in an inquiry in the spirit described, that which occupies him is science.

Because he takes science to be a mode of life, Peirce remarks, it makes sense 'to take as the unit science the scientific mode of life fit for an individual person.' But, he continues, since science is 'essentially a mode of life that seeks cooperation, the unit science must, apparently, be fit to be pursued by a number of inquirers.'¹

On this approach, the demarcation criterion, properly understood, concerns the nature of science as it is *ideally* incarnated in the way of life of the scientist. The way of life of a scientist as scientist is defined as a way of life governed by a purpose or ideal. What is most fundamental, and therefore what is to be demarcated is, not, contra Laudan, scientific *content*, or, even, though this is closer, scientific *conduct*. What is more fundamental than either of those is the ideal spirit, purpose, or aim of (ideal) scientific conduct. (Under 'content' we should include method; more on this below.²) Peirce's view is broadly deontological, even Kantian, not consequentialist: its primary focus is the agent/scientist's motivation for acting, not the independent features of her action, among which are included its consequences. Science is on this view defined in terms of the ideal of the scientific way of life: the disinterested, unselfish, whole-hearted pursuit of truth. And truth, and the love of and desire for it, is a metascientific norm. It is for Peirce, as for Kant, 'a moral norm legislating for both the aim and the methodology of *scientists as scientists*' (Sullivan 1989). For Peirce, as for Kant, pure practical reasoning is primary, and pure practical reason 'best defends its own primacy by protecting the rights of science... moral reason has both the right and obligation to defend the scientific enterprise against dangers posed by political or religious ideologies [i.e., pseudoscience]' (Sullivan 1989).

Viewing the demarcation problem in the philosophy of science from this Peircean/deontological perspective has several significant implications. First,

¹ Peirce, *Collected Papers*, (7.221)

² A theory developed by a theorizer with false beliefs about methodology needn't be unscientific. Nor need the theorizing be unscientific -- that too is a matter of the motivations of the theorizer. Conduct, whether informed by true beliefs about methodology or false ones, is scientific conduct if its motivation is scientific.

there is a clear parallel to art. The most influential twentieth century defender of an aesthetic answer to the demarcation problem in philosophy of art, Monroe Beardsley, defined a work of art as *either an arrangement of conditions intended to be capable of affording an experience with marked aesthetic character or (incidentally) an arrangement belonging to a class or type of arrangements that is typically intended to have this capacity* (Beardsley 1982). If a demarcation criterion that makes aesthetic intentions primary is respectable in aesthetics, then a demarcation criterion that makes scientific motivation primary cannot be rejected out of hand as a reasonable strategy in philosophy of science.

Second, in a discussion of the question of a demarcation question in logic -- whether second-order logic is logic -- the philosopher of logic Stuart Shapiro (Shapiro 1989) remarks that '[t]o some extent, the issue comes down to what the purposes of logic are.' That is, the idea that what matters to demarcation is purposes or ideals is not alien to philosophy of logic.

Third, Peirce's deontological approach explains something that should strike us as surprising -- the moralistically loaded language employed in demarcation debates. Why *pseudoscience* and not just *non-science*? If it is true that what is definitive of science is, most fundamentally, a mode of life animated by a moral ideal, then it is unsurprising that its adherents use such strong rhetoric. Again (to turn to logic): why did the most influential American logician of the twentieth century, Quine, introduce the striking term '*deviant* logics', rather than speaking more neutrally of *alternative* logics?¹ Peirce's approach explains this rhetoric, and has, moreover, a corollary: though the heavy-handed power politics that the scientific community employed against Lysenko and Velikovsky should be condemned, what *motivated* the suppression of their views may well have been moral outrage at the traducing of an ideal.

Timeless Demarcation Criteria

One consequence of Peirce's view that he saw very clearly is that, especially in the very early stages of science -- but not only then -- there are borderline cases:

If a man pursues a method which, although very bad, is the best that the state of intellectual development of his time or the state of the particular science he pursues would enable a man to take... we perhaps cannot call them scientific men, while perhaps we ought to do so.... They are, at any rate, entitled to an honorable place in the vestibule of science.... For my part, if these men really had an effective rage to learn the very truth, and did what they did as the best way they knew, or could know, to find out, I could not bring myself to deny them the title [of scientist].²

Part of this has recently been denied. For example, Hansson, noting that epistemic warrant varies across time, argues that the demarcation between

¹ W. V. O. Quine, *Philosophy of Logic* (Harvard University Press, 1986), chapter 6.

² Peirce, 'On Science and Natural Classes,' in *The Essential Peirce*, volume 2 (Indiana University Press), p. 131.

science and pseudoscience cannot be 'timeless,' since if it were, it would be contradictory to label a standpoint as pseudoscience at one but not at another point in time:

... after showing that creationism is in certain respects similar to some doctrines from the early 18th century, one author maintained that 'if such an activity was describable as science then, there is a cause for describing it as science now' ... This argument is based on a fundamental misconception of science. It is an essential feature of science that it strives for improvement through empirical testing, intellectual criticism, and the exploration of new terrain. A ... theory cannot be scientific unless it relates adequately to this process of improvement. At a very minimum, this requires that well-founded rejections of previous scientific standpoints are accepted. The demarcation of science cannot be timeless, for the simple reason that science itself is not timeless.¹

But consider the claim that the existence of a timeless demarcation criterion entails (given that the amount of evidence available to the community changes over time) that it is contradictory to say that a theory is science at one point and pseudoscience at another. Here is a very crude) timeless epistemic standard: (*) (x)(y) (if x is a time and y is a theory, then y is warranted at x iff y answers to the evidence available at x) Suppose that the evidence is different at t and at t+1, and that theory T answers to all the evidence available at t but not to all the evidence available at t + 1. And suppose that a theory is scientific at a time iff it is warranted at that time iff it answers to the evidence available at the time. Suppose also that if a theory is not scientific, then it is pseudoscientific. Does (*) entail that it is contradictory to say that T is warranted at time t and not at t + 1? No: (*) entails that T is warranted at t and not warranted at t + 1, but not that it is a contradiction (it isn't). Moreover, if it is true at t that T is warranted at t and not warranted at t + 1, then it is true at every time that T is warranted at t and not at t + 1. So, one might hold that a theory is (in the sense that matters, by courtesy, if one likes) scientific if there is at least one time at which it was warranted. And obviously, if (*) is a timeless demarcation standard, then so is (**) (x)(y)(If x is a time and y is a person, then if y at x had an effective rage to learn the very truth, and did what she did as the best way she knew, or could know, to find out, then y is a scientist at x).

Hansson seems to hold, moreover, that the fact that science by nature strives for improvement implies that it is untrue that something remains scientific even though evidence that overturns it becomes available -- since striving for improvement requires that well-founded rejections of previous [empirically less well-attested] scientific standpoints are accepted. But there is a clear equivocation on 'rejection' here. If 'well-founded rejection' means well-founded *disbelief*, then striving for improvement clearly does require

¹ Hansson, Sven (2009) 'Cutting the Gordian Knot of Demarcation', *International Studies in the Philosophy of Science*, 23: 3, 237 — 243, p. 239

rejection. That is, it is rational to disbelieve an inferior theory. But if ‘rejection’ of a theory means to *denial of scientific status to it*, then the claim that the fact that science strives for improvement entails the acceptance of ‘well-founded rejections of previous scientific standpoints’ entails, absurdly, that only the final theory is scientific. For every theory prior to the final one is such that it can be improved upon. Moreover, one can without inconsistency rationally disbelieve a theory, hold it to be scientific, and recognize that, because it *successfully* fulfills an intention to improve over its predecessors, it is a scientific theory.

In fact, the gist of Hansson’s argument seems simple: science is progressive; whatever has the property of being progressive changes over time; so, since what changes over time cannot be timelessly demarcated, science cannot be timelessly demarcated. The argument is significant, and not just because it has a premise which implausibly rules out the possibility that something might be timelessly demarcated by means of a criterion according to which, at every time, change is definitive. It is significant because it closely resembles a very well-known argument from the philosophy of art, due to Morris Weitz, which lies close to the Wittgensteinian roots of many attacks on the project of demarcating or defining art. According to Weitz, the application conditions of the concept of art can never be exhaustively enumerated, since new cases can always be envisaged or created by artists (Weitz 1956):

[T]he very expansive, adventurous character of art, its ever-present changes and novel creations, makes it logically impossible to ensure any set of defining properties. We can, of course, choose to close the concept. But to do this ... is ludicrous since it forecloses on the very conditions of creativity in the arts.

Weitz argues, that is, that art is creative; that whatever has the property of being creative changes over time; and that, because whatever changes over time cannot be timelessly demarcated, art cannot be. So his and Hansson’s argument are very close relatives. Both move from a premise about the dynamic nature of the definiendum to a conclusion about the impossibility of demarcation:

1. X is F.
2. Whatever has F-ness changes over time.
3. What changes over time cannot have a (timeless) set of defining properties.
4. So, X cannot have a (timeless) set of defining properties.

But if this is a bad argument in the art case, then – if the hypothesis of this paper is correct -- it is a bad argument in the science and logic cases. And Weitz’s argument has been almost universally rejected in philosophy of art (see, for example, Davies 1991, Carroll 1999, Meskin 2008, among many). After all, as often noted, it might be part of the definition of art that it involves an exercise of creativity -- which would obviously avoid the ‘foreclosing of creativity’ in the arts that Weitz feared.

Who Needs a Demarcation Criterion?

At the outset, I noted that several prominent philosophers of logic have expressed strong dissatisfaction with list-like ‘demarcations’ of the logical constants, as failing to explain why what is on the list is on the list. I turn now to a recent proposal about the demarcation of art, due to a prominent contemporary philosopher of art, Dominic Lopes. Lopes claims that the problem of demarcating art reduces to two problems: the problem of analyzing art’s constituent micro-categories (the art-forms), and the problem of analyzing what it is to be an art-form (Lopes 2008). If those two problems were solved, according to Lopes, then a very thin definition of art – call it the *Deflationistic Definition (DD)* -- would suffice:

(DD) Item x is a work of art if and only if x is a work in activity P, and P is one of the art-forms.

Call the thesis about DD the *Adequacy of the Deflationist Definition* thesis (ADD):

(ADD) If we had accounts of the individual art-forms, and of what it is to be an art-form, then DD would be an adequate definition of art.

Why think that, given theories of the individual artforms and an account of what it is to be an art-forms, DD would be adequate? Because, Lopes holds, it can explain puzzling revolutionary works like Marcel Duchamp’s readymades, which at the time of their creation appear to be non-art. Here’s how: any reason to say that a work belonging to no extant art-form is an artwork is a reason to say that it pioneers a new art-form. Hence, every artwork belongs to some art-form or other. Hence, if we had an account of what it is to be an art-form, together with theories of all the individual art-forms, no definition of art more substantive than DD would be needed. If this proposal is on the right track, then it answers the question, *If one wants to give an enumerative account of what it is to be an F, and the list will in the future be extended to new kinds of F’s, how does putting an ‘etc.’ on the end of the list help?*

But in fact this proposal seems misguided. By hypothesis, entertaining the question of whether or not x belongs to a new artform requires grasping some reason for x’s being art. Moreover, an activity might be ruled out as an art-form on the grounds that no artworks belong to it. If so, determining whether a new practice is an art-form requires determining, first, that its elements are artworks. Art, therefore, seems conceptually prior to art-forms. Focusing on the individual art-forms doesn’t, therefore, avoid the need for a definition of art. Alternatively put: The philosophical buck can be passed from an account of the macro-category of art to micro-level accounts of the individual art-forms which are its realizers, plus an account of what it is to be an art-form, only if an account of what it is for an activity to be an *art-form* doesn’t require getting clear both on what it is to be *art*, and on what it is that makes an activity a *form*. But that is required. Compare trying to get clear on the nature of

thought-experiments, without separately analyzing both the *thought* component and the *experiment* component.

Nobody Needs a Theory of F?

One might, to return to the abstract approach to demarcation issues with which this paper began, consider a generalized form of Lopes' proposal. The aim is to demarcate the F's from the pseudo/non-/deviant F's. Lopes' proposed deflationary proposal, viewed abstractly, comes to this:

Nobody needs a theory of F. The problem of analyzing the macro-category of F may be reduced to the problem of analyzing F's constituent microcategories, the individual F's, and the problem of analyzing what it is to be an F. If those two problems were solved, then a thin definition of F would suffice: Item x is F if and only if x is a work in activity G, and G is one of F's microcategories. And, if we had accounts of micro-categories of F, and of what it is to be an F, that thin definition would suffice.

It is obviously a straightforward matter to adapt this approach to the philosophy of science case, as well as the philosophy of logic case. Consider the former: Nobody needs a theory of science. For the problem of analyzing the macro-category of science may be reduced to two problems: the problem of analyzing science's constituent micro-categories, the individual sciences and the problem of analyzing what it is to be an individual science.ⁱ If those two problems were solved, then a very thin definition of science would be adequate: *Item x is a science if and only if x is a work in activity P, and P is one of the individual sciences.* And if we had accounts of the individual sciences, and of what it is to be a science, then that would be an adequate definition of science.

But clearly, this approach won't work for the philosophy of science case any more than it will for the art case, and for the same reason. Presumably, in order to know what it is to be a *scientific discipline* we need to know what it is to be *scientific*, and what it is to be a *discipline*. There are, after all, disciplines that are not scientific and scientific entities – methods, communicative practices -- that are not disciplines. But if we knew what it was to be scientific, there would be no demarcation problem to begin with. A mere enumeration of the existing sciences does not help at all, in the face of perplexity as to whether a controversial candidate belongs on the list. For parallel reasons, the proposal is no more plausible for the logic case.

Conclusion

Demarcation problems are not solved by laundry lists. Demarcation problems are not pseudo-problems. Light may be shed on demarcation problems by comparing them as they arise in philosophy of science, philosophy of logic, and aesthetics. A Peircean/deontological approach is worth further investigation.

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