

COSMOS + TAXIS

Studies in Emergent Order and Organization



Philosophy, the World,
Life and the Law:
In Honour of Susan Haack

PART I

INTRODUCTION

PHILOSOPHY AND HOW WE GO ABOUT IT
THE WORLD AND HOW WE UNDERSTAND IT

COSMOS+TAXIS

Studies in Emergent Order and Organization
VOLUME 8 / ISSUE 4 + 5 2020



COVER IMAGE

*Susan Haack on being awarded the
Ulysses Medal by University College Dublin*
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PHILOSOPHY, THE WORLD, LIFE AND THE LAW: IN HONOUR OF SUSAN HAACK

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Foreword

“An Immense and Enduring Contribution”

RUSSELL BROWN

Justice
Supreme Court of Canada

Web: <https://www.scc-csc.ca/judges-juges/bio-eng.aspx?id=russell-brown>

Five years ago, I attended the “Cambridge Lectures,” organized bi-annually over five days at Queen’s College, Cambridge by the Canadian Institute for Advanced Legal Studies. The topics were a mix of the weighty (“Law and Religion”) and the stimulating (“Shakespeare and the Foundations of Constitutional Thought”). After three days, most of us were starting to wonder how as younger people we’d ever endured years of sitting through long lectures in tight quarters.

On the morning of day 4, Professor Susan Haack arrived for her advertised discussion of “Justice, Truth and Proof: Theory and Practice.” I had previously cited some of her work in my own scholarship, so I had an inkling of what to expect. But only an inkling. For the next 90 minutes before a house packed with some of Canada’s leading jurists, she delivered a master class on a subject intimately connected to much of our work, but which taken as a group we did not know about, assumed but did not think about, or knew about but usually got wrong: epistemology and, more precisely, the epistemological concepts that the law wields in applying burdens of proof, weighing evidence, and finding facts.

A gifted teacher, Susan (if I may) removed the blinkers, prompting a cascade of questions from her listeners. What of *Daubert*? What of (so-called) statistical “proof” of causation? Is legal fact-finding the same as scientific fact-finding? Gently, but firmly, and in an engaging and deeply interdisciplinary way that saw her drawing from philosophies of science and law, she helped us sort through our confusions about the epistemological concepts with which we lawyers must daily grapple. And, of course, she left us with a reading list in the form of several chapters from her new book, *Evidence Matters*—which has since been cited at my Court for helping my colleagues and me to understand and explain the distinction between scientific and civil standards of proof.

As Susan reminds us in *Evidence Matters*, “the law is up to its neck in epistemology.” It takes a gifted philosopher to appreciate it, but a gifted teacher to help the rest of us understand just what that means for how we go about our daily work. In this subject, among many others, Susan’s contribution has been immense and, I can personally attest, enduring.

Of course, many of us will continue to get it wrong. But where we get it right, I will always think that it all started one sunny Thursday morning at Queen’s College, Cambridge, when an eminent philosopher responded to the (to put it mildly) unenviable call to teach a thing or two to a roomful of cramped and lecture-weary lawyers.

I hope Susan will accept my warmest congratulations on this volume of essays compiled as a tribute to her inestimable contributions. I am also grateful to the editors for inviting me to offer these few words.

Editor's Preface

MARK MIGOTTI

Web:

<https://phil.ucalgary.ca/profiles/mark-migotti>

Susan Haack is something else; everyone who has heard her deliver a lecture, or read her work with care, knows this. The twenty-six authors who have contributed to this *Festschrift*, prepared for presentation to Professor Haack on the occasion of her seventy-fifth birthday, know it especially well. The articles and testimonials here published are tokens of appreciation and esteem for our honoree and her work. Seven of the authors are students of Haack's, the others grateful fellow thinkers, and discussants and correspondents, encountered along the way. The volume was undertaken at the behest of Leslie Marsh, Managing Editor of *Cosmos and Taxis*, and I am especially grateful to him for this, as for the efficiency and good cheer with which he has seen the project through.

Haack's work covers everything, so the division into four categories that gives this volume its title and organizes the contents of its essays was a matter of discretionary judgement, not evident fact. Still, the headings, and their order, get something right. Haack has advanced philosophy in substantial ways, a tremendous accomplishment, not to mention something that's been deemed virtually impossible, for subtle reasons by good minds; and she has done so with special regard to questions of: the world and our ways of knowing it, the value and values of human life, and justice, truth, and the law.

Reading Haack attentively yields ever greater pleasure and appreciation; skimming is worse than pointless—read with energy and intent or spare yourself the (non)effort! Nevertheless, as Justice Brown so effectively conveys in his *Foreword*, however much you've enjoyed Haack's articulation of her ideas on the page, seeing her present them in person is, well, something else. And the same goes for the move from knowing Susan only from the page or podium to making her acquaintance, and from being her student to being her friend. As I've worked on this volume—and these prefatory words—I've been struck by how comparatively recently many of my co-contributors met Susan, how quickly her dedication, industry, loyalty, patience, candour, breadth and intensity of mind, sense of humour and fun, sharp wit, etc. etc. make a deep and lasting impression.

I've known Susan for almost two-thirds of my life, and haven't the foggiest what I would be without her. In any case, I'm unutterably glad that the scholarship I had won assigned me to the University of Warwick. My undergraduate major had been history, my philosophical views upon beginning my MPhil had a continental accent, and I revelled in Richard Rorty's brash thumbing of his nose at the crabbed analytic establishment. How likely was it that I would write my

thesis under the department's resident logic person?! I'm thankful both for the plasticity of young minds, and the rare luck of encountering a real philosopher. Thank you Susan; my memories of the two of us standing at the blackboard in your Warwick office, after my fellow students had dispersed, going at it hammer and tongs over Rorty, Putnam, Peirce, Kant, whomever, whatever, are indelible and treasured, my gratitude for our philosophical discussions over the telephone, more often than not on more days of the year than not, deep and abiding.

Our contributors represent ten countries and have at least six mother tongues among them. They range widely in age and academic specialty, and, most importantly from Susan's point of view, run the gamut from eminences in their field and country to recently completed PhDs. Susan Haack respects individuals, not reputations or ranks; and cherishes philosophical companions, not academic connections.

Once more with feeling: Susan Haack is something else, both extraordinary and out of the ordinary—extraordinary in the scale and scope of her philosophical accomplishments, out of the ordinary in her manner of achieving them and the example she sets for the rest of us.

From There to Here: Fifty-Plus Years of Philosophy with Susan Haack

MARK MIGOTTI

Web:

<https://phil.ucalgary.ca/profiles/mark-migotti>

*Live all you can; it's a mistake not to.*¹

Only Odysseus can string the bow of Odysseus; and who but Susan Haack could tell the philosophical story of Susan Haack? Only someone with her range, eye for detail, sense for connection, sharpness of focus, and preternatural determination to get to the bottom of things could do justice to her oeuvre; and no one but Haack has that range, that eye, that sense and sharpness, and that determination. Moreover, we now have an up-to-date resumé of Professor Haack's philosophy from her own hand;² so you might wonder what's left for anyone else to do. Well, in the piece just noted, Haack mostly sets aside the details of how she arrived at where she is now, and confines herself to articulating her key ideas, rather than delving into their genesis (WORLD AND HOW, 550). Hence the task at hand: tracing Haack's path from apprentice philosopher in the late 1960's to the (ahem) master practitioner she has long since become.³

I aim to highlight and elaborate Haack's philosophical achievements by looking at the route(s) by which she arrived at them. In keeping with Kierkegaard's observation that we live forward, but understand backward (Kierkegaard 1996 /c. 1843, 161), this would have been impossible before we had enough of Haack's work to go on. In terms of her fruitful analogy of human inquiry in general, and her own inquiries in particular, to a giant crossword, for most of her career the entries on which Haack worked were located outside the "meta." reflexive section of the puzzle. By now, though, this corner of the grid has grown substantially, as Haack's books, articles, lectures, and interviews have accumulated apace.⁴ And what better occasion than this for approaching Haack's worldview, and the attitudes and arguments that animate it, from this philosophico-historical standpoint?

I begin with four maxims of philosophy as Haack practices and embodies it—two expressing qualities of mind, two pertaining to the methodology and subject matter of the discipline. These precepts are active in Haack's work from the beginning, and they reinforce each other in manifold ways. Introducing them summarily, via the conceit of an intellectual travelogue covering the first half of Haack's career, I then put them to use in interpretations of her major works and core themes.

When Haack "went up" to Oxford, the philosophy into which she was introduced bore the marks of the much touted "linguistic turn" in the subject. Whether in Wittgensteinian, or Carnapian, or Quinean, or Austinian, or Dummettian, or Davidsonian garb, the "linguistic-conceptual-analytical style" (2005c, 235) of philosophy was in full triumph.⁵ In

some measure, Haack's first serious philosophical work—on ambiguity—bears the marks of this consensus of opinion. Ambiguity is a feature of language, and while teachers of logic have long inveighed against fallacies of equivocation, the kind of sustained, systematic attention that, to take a leading example, Gilbert Ryle paid to the philosophical mischief wrought by “systematically misleading expressions”⁶ is distinctive of the approach to philosophy that dominated the Anglophone world for most of the 20th century.⁷ Even so, it's not as if Susan Haack wrote her B.Phil. thesis on a “hot topic.” In fact, she recalls, a common reaction to her choice of subject was bemusement: is ambiguity really a philosophical *issue*, as opposed to a common philosophical hindrance?—which brings me to my first maxim of Haack's philosophical thinking: GO YOUR OWN WAY! As a student, she observed it by native instinct; over time she has become more self-conscious about its cardinal importance.⁸

From Oxford to Cambridge, ambiguity to alternative logics. In the jargon of the day, Haack moved from ordinary language to ideal language, from the turns and tropes of natural language(s) to the point(s) and purpose(s) of formal calculi—not that falling in with the jargon of the day was ever Haack's style. As her fledgling efforts were informed by a keen sense of the harms ambiguity can do to clear thinking and the special dangers it poses for philosophy, so her first book was informed by a felt need for clarity about the tole of formal methods and formal logic in science and philosophy; which leads to the second summary maxim of Haack's philosophy: WATCH OUT FOR FALSE DICHOTOMIES! *Either* classical logic is the be all and end all, *or* it's not much at all, owing its academic status to accidents of history and failure of intellectual nerve; *either* formal methods reign supreme *or* they are the proper prerogative of mathematicians, computer scientists, statisticians *et. al.*, and should be kept firmly in their very limited place in philosophy. Readers of *Deviant Logic* know better on both counts.

From Cambridge to Warwick ... and from original scholarship to a textbook? No, not really. Helpful as it is in the classroom, what sets *Philosophy of Logics* apart is that it actually does what its author tentatively hoped it would, and what any number of well-meaning but less accomplished authors have too optimistically hoped their introductory surveys to this or that would do: “be of some use to the student and at the same time of some interest to the teacher.”⁹ In its capacity at once to *contribute* to its field and to *introduce* it, *Philosophy of Logics* puts paid to a pseudo-dilemma that extends beyond philosophy to the modern university as a whole: the invidious contrast between teaching and research.¹⁰ Readers of *Philosophy of Logics* won't be surprised to learn that its author regularly wins teaching awards. As Haack's teaching extends beyond the classroom, into her publications, philosophical conversation etc., so her “own work” is conducted in the classroom as well as her study, the auditorium, over the telephone, etc.: a philosophical life of rare distinction.

From Warwick to Miami and from philosophy of logic to epistemology? Sort of, but not so fast; for Haack's work in the philosophy of logic was always aimed at understanding the place of logic within human inquiry more generally;¹¹ and this made epistemology crucial from the outset. “If sheer logic is not conclusive, what is?” (Quine 1971, 82)—as Haack expanded her epistemological reach she incidentally opened up a revealing perspective on this Quinean conversation-stopper. As a motto to *Deviant Logic*, it had, with a hint of irony, nicely introduced a judicious inquiry into what should count as “sheer logic”; in light of how much reconstruction turned out to be needed in epistemology, it becomes, not a rhetorical but a genuine question, which calls for the simple answer *Nothing*, no belief or theory or department of inquiry or form of reasoning is “conclusive” *in the sense of infallible*; epistemologically speaking there are no guarantees.

Since settling in Coral Gables, Haack's peregrinations have been plentiful, but occasional; residence-wise, she's stayed in one place. Intellectually, she has expanded her horizons and explored new territory, deepened and refined long-standing themes and ideas, amplified and tightened crucial arguments, filled in lacunae and fleshed out sketches and suggestions; but the fact that she hasn't changed address since publishing *Evidence and Inquiry* brings this travelogue to a convenient stopping point. I close it with my remaining two precepts of philosophy in the manner and conviction of Susan Haack: KEEP AT IT! And DON'T FORGET THE WORLD!

Keep at it means don't lose heart, don't forget what you can get from really putting your mind to work. On first becoming acquainted with philosophy, it's common to be alternately thrilled and troubled; exhilarated by philosophy's breadths and depths, suspicious of its ability to plumb the depths and comprehend the breadths. If doubt and suspicion win the day, you won't be able to keep at it. You may go through the motions of teaching classes, writing articles, attending conferences, editing journals etc.; but none of it will avail. Wittingly or not, you will have become cynical; carrying out activities that require wholeness of heart without commitment to their point and purpose.¹² As Northrop Frye puts it: "No one can begin to think straight unless he has a passionate desire to think and an intense joy in thinking"—a resonant truth worthy of inscription "upon every wall in the city of philosophy" (Frye 2004/1947, 28).¹³

The demands of philosophy can enervate in subtle and devious ways, for example by coopting the mainsprings of enthusiasm. Frustrated by failure and daunted by difficulties, an aspiring philosopher can hear the call of root and branch revolution and heed it, can begin to hope against hope that *this* new approach or avenue that's catching everyone's attention right now, will finally usher in solid progress and true success: out with the antique *bijoux* of our philosophical forefathers; in with methods and techniques more suited to modern taste.¹⁴ Hence the need to hold fast to Maxim Two (Eschew false dichotomies), and "remember how common the folly is, of going from one faulty extreme to the opposite;"¹⁵ and to remember also how hard it is to keep your head when all about you are losing theirs, which returns us to Maxim One (Go *your* way) and the cardinal importance of not being distracted by the crowd.

Analytic philosophers could welcome the idea that the problems of philosophy were problems of language because it was thought to help philosophy accommodate itself to the age of science. If language had the sort of distinctive and distinctively deep importance for philosophy that it was assumed to have by the champions of logico-linguistic-conceptual analysis, untenable conceptions of its scope and aims could be replaced by more tractable ones. Viewed through its own wide-angle lens, the linguistic turn appears as the culmination of a three-act history of Western philosophy. At first, this story goes, philosophy tried, naively, to tackle anything and everything; with Descartes and the rise of modern science, it continues, philosophers became especially concerned with our most fundamental means of access to what (if anything) is "out there," independent of the vagaries of our minds; in what Ian Hacking called the "heyday of ideas" (1975, Part A) they fastened on consciousness as the "interface" between mind and world that gave philosophy its true subject matter. Finally, thanks to Frege, Russell, Moore, *et. al.*, public language replaced private experience as the crucial medium of apprehension,¹⁶ allowing the pre-history of philosophy to draw to a close and fruitful philosophy to begin.¹⁷

If, having once fallen for it, you become doubtful of analytic philosophy's capacity to live up to its hype, you may find it necessary to write articles with titles like "The World Well Lost."¹⁸ Begin with a sharp divide between language and world, corresponding to a clean division of labour between the philosophical work of *analyzing* concepts in the pursuit of a *sui generis* "foundational" sort of understanding, and the scientific work of using and devising concepts in the pursuit of plain old positive knowledge—end up with Richard Rorty's vulgar pragmatist good-bye and good riddance to both world and philosophy.

And so we see that these maxims of Haack's philosophy are more than maxims of *Haack's* philosophy, they're needed for philosophy, period, or at least for philosophy understood as a branch of inquiry.¹⁹ When you fall in with what's trendy, you make philosophy a thing of changing fashion;²⁰ as you become aware of this, your capacity to keep at it will be tested, as it will in the face of boredom and frustration with the *Scheinstreit* and pseudo-problems wrought by pernicious assumptions and false dichotomies. And if you forget the world you lose all you've got, realistically speaking.

Time now to go back to the 1970s, and Haack's work in the philosophy of logic.

FORMAL RESULTS AND PHILOSOPHICAL INVESTIGATIONS

Setting out from the simple fact that “[t]here are many systems of logic ... which differ in one way or another from classical logic” (DL 1), Haack’s first book inquired into the possibility and the ramifications of well-motivated out-and-out rivalry with classical logic. For a system of logic’s differing *formally* from classical logic—allowing as theorems strings of symbols that aren’t theorems in classical systems or lacking strings that are—doesn’t of itself mean that it offers a genuine alternative to classical logic. Some philosophers, indeed, have thought that classical logic must be immune to fundamental revision or correction, and an important portion of the first part of *Deviant Logic* is occupied with critical examination of arguments to this effect.

Haack treats arguments for a special, unrevisable status for logic as bound up with “absolutist” conceptions of the subject, according to which “logic is absolutely certain, and so completely unalterable” (DL 25). Kant held that since logic was impervious to refutation by contingent experience, it stands to reason that it should also be immune to revision. While conclusions in the empirical sciences may need to be tentative and defeasible, surprising turns of events (black swans, black holes) never being out of the question, logic, the argument goes, faces no such eventualities.²¹ Kant thought that in his logical works Aristotle had “omitted no essential point,” so that it was no accident that “in our own times there has been no famous logician and indeed we do not require any new discoveries in Logic” (Kant, 10-11). Frege, founder of the modern logic that superseded Aristotelian syllogistic, held that logic is unrevisable because its laws are self-evident. Both Kantian and Fregean absolutisms come to grief in light of the stubborn fact that people make mistakes in logic. Kant maintained that logic includes only those rules required for the exercise of any understanding at all, rules without which understanding anything would be impossible; and he admits that this makes *mistaken reasoning*, “error in the formal sense of the word” (Kant, 44), mysterious to the point of inexplicability. And Frege’s *Begriffsschrift* was based on an inconsistent set of axioms, each put forward as self-evidently true.

If logic isn’t absolutely certain, and perhaps in need of revision, it may be viewed as “a theory on a par, except for its extreme generality, with other ‘scientific’ theories” (DL 26). In reply to the objection that such a “pragmatist” conception of logic undermines itself because the very idea of revising theories and beliefs in light of contrary evidence presupposes the law of non-contradiction, Haack grants that “*some* logic is taken for granted in the presentation of the pragmatist picture” (DL 37 emphasis added), but denies the imputation: “to suppose that this shows that picture to be incoherent is to forget what is quite crucial, that we are, to use Neurath’s figure, rebuilding our raft while afloat in it” (Ibid.). Indeed; to forget that we are in Neurath’s boat is to forget the world, the place where fallible, flesh and blood human inquirers “do logic,” craft systems, hazard interpretations, make discoveries and mistakes, and learn from them.

As is perforce standard practice in other theoretical domains, the relative merits of competing logics should, on this pragmatist picture, be adjudged “on the basis of an assessment of the economy, coherence, and simplicity of the overall belief set [to which they give rise]” (DL 26). Given the consonance of this idea with Quine’s contention that “the considerations that guide [each man] in warping his scientific heritage to fit his ongoing sensory promptings are, where rational, pragmatic” (Quine 1953, 46), Haack enlists that influential philosopher as “a powerful ally” (DL 26) in her attempt to defend her pragmatist philosophy of logic against absolutist objections. As she realized, but Quine didn’t, the prospect of applying such “pragmatic” rules of thumb for theory choice to the case of competing logics makes evident how difficult it is to spell them out in detail, how quickly thorny questions multiply when you try to ascertain the relative economy, simplicity, and coherence of theories, and justify the bearing of these dimensions of assessment on the likely truth of the theories. A satisfactory pragmatist account of logic requires better answers to these questions than Haack (or Quine, or anyone else) could provide in 1974. Philosophy of logic needs epistemology—so it’s no surprise that the author of *Deviant Logic* would write *Evidence and Inquiry*.²² Needing to keep at it, she kept at it.

In the Preface to the expanded edition of *Deviant Logic*, Haack tells readers that she has left its original text “severely alone,” not because her thinking on the subjects it covers has remained just where it was when she wrote the book, but because “to re-write it now would be the work of a decade at least,” (DL ix) and much of the reason for this has to do with the issue just noted, and Quine’s evasions concerning it. For all that she now rues her tendency at the start of her career to approach the revisability of logic in a manner that “allowed Quine to set too much of the agenda,” (Ibid.) her doing so enabled her to root out a serious tension in Quine’s philosophy of logic which is but one manifestation of a tight knot of ambivalences and ambiguities running through his philosophy as a whole.²³

Pragmatism about logic is designed to conflict with absolutism, but its relation to the contrast between a conservative privileging of classical logic and a more radical willingness to see it removed from its traditional pedestal is not straightforward. Perceptions of simplicity are easily affected by sheer familiarity; what we take for granted seems simple, what’s new can seem unnecessarily complicated.²⁴ But if familiarity and entrenchment are allowed to weigh positively in the balance, either avowedly, or surreptitiously, by influencing what counts as simple, “the apparently radical recommendation to choose the simplest theory ... lapses into the most stringent conservatism” (DL 40); as Quine’s example makes evident: the same philosopher who used Neurath’s image of sailors rebuilding their ship in open water as an epigraph for *Word and Object*, professes to believe that truly alternative logicians, like allegedly pre-logical peoples, are the mythical inventions of “bad translators” (Quine 1960, 387). Twenty years after the second edition of *Deviant Logic*, Haack described Quine’s argument(s) that constraints on acceptable translations of logical vocabularies mandate conservatism about logic as “confused and confusing” (DL 20). This not being the place to chart these confusions in detail, I will let her drubbing of a particularly egregious case stand in for the full story:

The principle of maximising agreement [between a radical translator’s beliefs and those ascribed to speakers of a target language] entails that correct translation invariably preserves classical logic in a privileged position only if one assumes that classical logic is the right one. ... [Quine’s] maxim ‘save the obvious’ preserves classical logic only granted that classical logic *is* obvious (Ibid.).

In making her case for pragmatist about logic, Haack remarks on the difficulty of “find[ing] premises from which to begin, upon which one can hope for any degree of agreement” (DL 30)—a point that notoriously applies to philosophy generally, but from which, perhaps in virtue of the assumed self-evidence of its basic principles and axioms, logic has sometimes been thought to be exempt. In such a vein, Barkley Rosser and Atwell Turquette had urged a principled postponement of exactly the sort of inquiry Haack undertook as a doctoral student, arguing that investigation into the meaning and interpretation of many-valued systems of logic would be profitable only when “the precise formal development of such systems has been carried to a level of perfection considerably beyond that which is reached even in the present work” (Rosser and Turquette, 2). They dismissed the suggestions for interpreting many-valued systems already put forward as “premature,” admonishing that none of them could be “taken too seriously” (Ibid.). In response, Haack observed that that it was still unclear, twenty years later, “what formal distinction there might be between non-standard systems which are rivals and those which are merely supplements of classical logic, or between systems embodying the assumption that there are truth-value gaps, and systems embodying the assumption that there are intermediate truth values” (DL xxvi).

On the face of it, the difference between adding on to something and revising or correcting it is clear: it’s one thing to build a second story on your house, quite another to renovate it from the ground up, or to move across town. But when it comes to the distinction between expanding the range of formal logic, by enabling it to deal with, for example, modality, obligation, or the law, and replacing two-valued predicate calculus with a many-valued system, difficulties proliferate; as they do when you try to spell out the precise difference between a predicate’s not being applicable in a certain domain (as truth and falsity aren’t applicable to questions or commands), and a subject of predication admitting of a third predicate somehow in between two heretofore mutually exhaustive and exclusive predicates (as Łukasiewicz thought a middle truth value,

M, which is somehow on the same footing as T and F but different from both of them, was required to make proper sense of future contingent statements).

If purely formal criteria for genuine rivalry with classical logic were possible, one ought to be able to distinguish mere *notational* variance from something more substantial in exclusively syntactic terms. But this doesn't seem feasible: whether the definitions, axioms, and theorems of *Principia Mathematica* are expressed in Polish notation, or in Russell's and Whitehead's, or any other, the logic that results is the logic of *Principia*, not something else. But how do we know when the absence of a certain string of symbols—say ' $p \vee \sim p$ '—from the class of theorems of a logical system amounts to that system's not countenancing Excluded Middle as a law of logic, as opposed to its deviser having chosen to use " \vee " as a (perverse) notation for the operation usually written '&' (DL 7)? How can we distinguish genuine rivalry with classical logic from a misleading appearance of competition stemming from different meanings being attached to the same symbols or different symbols being used to designate the same meaning? Syntactically, we can't; which is why it would be unhelpful to hold philosophical reflection on the question of challenges to classical logic hostage to formal advances on non-classical systems.²⁵ In fact, the shoe is on the other foot: since purely formal features won't distinguish calculi aimed at expanding the ambit of classical logic from systems aimed at repairing perceived deficiencies, or between absence of a truth value altogether and presence of a truth value other than "true" or "false," "it is sometimes uncertain what formal investigations are likely to be fruitful" (DL 1). Far from premature, "serious examination of the philosophical, rather than the purely formal, consequences of adoption of non-standard systems is ... overdue" (Ibid.).

To come to grips with questions of revising and/or correcting classical logic Haack needed to address the character and privilege (or lack thereof) of formal logic as such and, beyond this, the scope and limits of formal methods and approaches in general. In the years immediately following the appearance of *Deviant Logic* she turned to the then recently burgeoning variety of non-standard logic that results from "fuzzifying" many-valued logic. In its formative stages when Haack was writing and revising her thesis, fuzzy logic was soon rampant, touted for its potential to contribute substantially to such topics as reasoning involving inexact concepts, psychological classification, threshold phenomena, pattern recognition and computer learning.²⁶ In "Do We Need Fuzzy Logic?", and in *Philosophy of Logics* (Chapter 9, "Logic and Logics"), Haack set out to separate the wheat from the chaff—and found mostly chaff.

In reply to Rosser and Turquette, Haack had drawn attention to the philosophical impoverishment of a logical diet of formal questions alone; in her critique of Lofti Zadeh's attempt to accommodate reasoning with vague predicates formally by construing them as fuzzy sets, she reminds us of the philosophical importance of the formal dimension of logical inquiry; as usual, she eschews baleful all-or-nothingisms.

In his concern to give vagueness its due, rather than ignore it or rule it out of court, Zadeh has something important in common with such critics of formalisation as F. C. S. Schiller or Peter Strawson. But where they "urge the inadequacy of *any* formal system to the subtleties of ordinary language" (DL 237), he, perversely, proposes a *formalism* intended to make vagueness tractable. The result is a logical system after the fashion of Rube Goldberg, a formal logic that "lacks every feature that the pioneers of modern logic wanted logic *for*," which blithely "sacrifices what have traditionally been regarded as the crucial advantages of formalism—precise, formal rules of inference, the security offered by consistency and completeness results" (Ibid.). "Fuzzy logic" isn't a new system of logic at all; it's an "oxymoronic enterprise" (xi).

In the Preface to *Philosophy of Logics*, Haack explains that she had come to support "a qualified pluralism" rather than the monism that had tacitly underpinned *Deviant Logic* (PhL xiv); and in her critique of fuzzy logic the importance of the "qualified" comes to the fore. Fuzzy logic construes inference as "approximate rather than exact, [and] semantic rather than syntactic" (DL 236). But while the idea of an inference from A to B's being "approximately valid" might be given semantic sense in terms of the ordinary, exact validity of a corresponding inference from "approximately A" to "approximately B," the idea of "*syntactic* consequence being approximate is quite baffling (either you write B on the next line after A, or you don't; you can't approximately write it ..." (Ibid.). Upon close examination, the entire formal apparatus of fuzzy logic turns out to be "almost wholly redundant," since "the real work [of making logic fuzzy] is all done at

the level of informal linguistic analysis” (DL 238), where the vague natural language predicates are, by fiat, turned into fuzzy counterparts in the formalism. Logical pluralism, yes: perhaps there is no single “correct logic.” But not all formal systems that purport to be logics deserve the accolade²⁷—which is why, although “the very existence of arguments in favour of Deviant logics lends some prima facie plausibility to [the pragmatist view of logic],” it doesn’t settle the matter, since “the proponents of such logics could be mistaken about the nature of their own enterprise” (DL 26). In philosophy especially, getting clear on the nature of your own enterprise can be half the battle. So going your own way sometimes requires, not only the courage to stick to the course you’re on, but a willingness to abandon false trails; as you try to figure out the world, you learn more about yourself, and vice versa.²⁸

But, Haack was told (2016, 89), fuzzy logic *must* be right, because it underpins fuzzy technologies that work. Physician heal thyself; don’t forget the world! Well, she replied— after mugging up the necessary rudiments of electrical engineering during “a very long, and very hot, summer” (2016c, 89)—while it’s true that “fuzzy controllers for air-conditioners, rice cookers, video cameras, washing machines, traffic lights, subway braking systems etc. do work,” this “does nothing to establish the philosophical bona fides of [Zadeh’s] fuzzy logic” (DL 230). Fuzzy controllers convert fuzzy inputs into fuzzy outputs; temperature identified as ranging from too cold to too hot with just right in the middle to speeds of a motor identified as ranging from slow to medium to full blast for example. The real work of a Zadeh-style formalism is done in converting the fuzzy input sets into fuzzy output sets: “In fuzzy set theory, since membership comes in degrees, a precise temperature, say 65 degrees Fahrenheit, might belong to ‘just right’ to degree 0.6, to ‘cool’ to degree ‘0.2’ and so on. So at 65 degrees, ‘if the temperature is just right, turn the motor speed to medium would be invoked 60 percent and ‘if the temperature is cool turn the motor speed to slow would be invoked 20 percent” (Ibid.). Then, by means of weighted averaging, the fuzzy output is “defuzzified” to produce a specific motor speed. With this, as Haack says, “the fog begins to clear” (DL 231). Since none of the manipulations required for the smooth functioning of fuzzy controllers relies upon a nonclassical theory of truth-preserving inference, their merits, whatever they may be, do nothing to further the cause of fuzzy logic.

Returning to the subject in the preface to *Deviant Logic/Fuzzy Logic* (and adding it to the book’s title), Haack describes fuzzy logic as a variety of “Logical Extremism”—roughly, the tendency to indulge in outré formal proposals for handling topics that pose problems for classical logic, such as vagueness or the semantic paradoxes. A tell-tale sign of Logical Extremism is a loosened grip on elementary facts about truth—exemplified egregiously by Zadeh when, apparently in all seriousness, he suggests that the logical meaning of “very true” might be “true squared”! In the third chapter of *Deviant Logic* (“Deviance and the Theory of Truth”), the seventh chapter of *Philosophy of Logics* (“Theories of Truth”), and “Is It True What they Say About Tarski?” Haack pursued fundamental questions about the nature and meaning of truth, paying special attention to Alfred Tarski’s influential semantic account. First presented in 1931, this novel approach had by the time Haack was writing become “probably the most influential and most widely accepted theory of truth” (PhL 99).

Tarski’s theory of truth has manifest virtues: it issues in a definition of true-in-L that is provably correct in its own terms, and those terms have an initial plausibility. But “the very features of Tarski’s theory which contribute most to its appeal also ... create problems for it” (PhL 99), and the chief such feature is signalled in the title of the article in which Tarski first presented his results: “The Concept of Truth in Formalised Languages [Formalised].” It is precisely and only because Tarski defines a notion restricted to formalized languages that his definition of truth can be *provably* “correct”; and it’s for this reason that (as Haack observes) his account has been accused of being both anodyne and tendentious—downplayed by some as philosophically irrelevant because of its pristine neutrality on the issues that divide traditionally competing accounts of truth, questioned, or championed, by others as dubious or desirable in virtue of *not* being neutral with respect to familiar disputes between correspondence, coherence, and pragmatist etc. theories, but having instead a debatable, or welcome, *parti pris* for one of the contending views.

Demonstrating very effectively how easy it is to be unclear and uncertain about the nature of one’s own philosophical enterprise, Tarski waffled on the question whether he aspired to rehabilitate a correspon-

dence approach to truth or instead supersede everything that had come before him.²⁹ But when he expressly doubts “the very possibility of a consistent use of the expression ‘true sentence’ which is in harmony with the laws of logic and the spirit of everyday language” (Formalised 165, n.17) he should be taken at his word. Not that he is thereby advocating the bizarre policy of banning the phrase “true sentence” from our vocabularies; his skepticism about a coherent notion of truth in an everyday sense is prologue to a pronounced optimism about the prospects for defining a workable conception within a formal idiom purpose-built for the job. Nevertheless, notable philosophers have sought to exploit Tarski’s theory in ways that presuppose the possibility of respecting the laws of logic, the spirit of everyday language, and the character of Tarski’s formal achievement. Haack alerts us to the unlikelihood of jointly satisfying these three desiderata.

When Aristotle said that “To say of what is that it is or of what is not that it is not is to speak truly” (*Met.* IV) he said something clearly true. When Thomas Aquinas defined truth as “the adequacy of the mind and the thing”³⁰ he said something suggestive that needs interpretation. Aristotle’s dictum is a datum; Aquinas’s an invitation to further theory. According to Karl Popper, Tarski finally provided us with a welcome vindication of “the idea of objective or absolute truth truth as correspondence to the facts” (Popper 1963, 225-6). What does it mean for mind and thing to be “adequate” to each other, or for a belief, sentence, or theory to “correspond” to the facts? Until Tarski, Popper argues, we didn’t know; but now we do. As Haack shows, he’s wrong.

If truth is to be explained by the notion of correspondence, it must be possible to account for what truth is supposed to correspond to—reality, the world, the facts—in terms that don’t presuppose truth; and in its way Tarski’s theory does this. Tarski defines truth in terms of satisfaction, a relation between open sentences and arbitrarily chosen sequences of objects; and defines satisfaction recursively, logically complex sentences accounted for by the standard semantics for sentence forming operators and quantifiers, and logically atomic sentences defined “*enumeratively*, a clause for each primitive predicate of the object language” (PhL 111). Quite apart from worries about the very idea of defining something by sheer enumeration, “Tarski’s definition of satisfaction ... bears [at most] *some* analogy to correspondence theories [of truth]” (PhL 114);³¹ and it differs crucially from “traditional” correspondence accounts in being applicable only to formal languages with precise formation rules for well-formed formulae. So, when the all-important details are taken into account, it becomes clear that, while Tarski’s work does conduce to understanding and clarity about the general question of what theories of truth are in the business of doing, and the specific question of the challenges faced by correspondence-style theories, its value “does not lie in its supposed rehabilitation [of objective, absolute, correspondence truth]” (1976, 336).

Popper thought that only an objective, absolute, correspondence notion of truth could function as a regulative ideal of science; and his falsificationist philosophy of science needs such an ideal. In his view, scientific theories are falsified by reference to truth in the objective, correspondence sense; and, although conclusive verification is impossible, progress is (supposed to be) made as successively better theories are falsified by successively deeper, more surprising results. As Haack points out, the demonstrable failure of attempts to craft a workable theory of “verisimilitude” that could explain how inquirers can approach the truth without ever infallibly or comprehensively arriving at it supports Tarski’s own “rather modest ... assessment of the epistemological significance of the semantic theory of truth” (PhL 117).³²

Perhaps, however, the place to turn Tarski’s work to further philosophical ends isn’t the theory of knowledge, but the theory of meaning, as Donald Davidson influentially urged for many years. Davidson hoped that “the semantical [*sic*] conception of truth”—and in particular its material adequacy condition enshrined in the celebrated Convention T, that ‘S is true iff *p*’ where “*p*” can be replaced by any sentence of the language for which truth is being defined and ‘S’ is to be replaced by a name of the sentence which replaces ‘*p*’” (PhL 100)—could provide a “sophisticated and powerful foundation for a competent theory of meaning” (Davidson 1967, 310). While this project didn’t lend itself to the outright refutation suffered by Popperian verisimilitude, it proved no more feasible, and was in due course abandoned.

As Haack points out, the idea that the meaning of a sentence can be given by specifying the conditions under which it is true isn’t new; what caught people’s attention was the idea that “imposing ‘Tarskian’ con-

straints upon the account of truth-conditions” (PhL 118) might turn this germ of an idea into a serious theory of the principles underlying the meaning of sentences in natural languages. Aware that Tarski was expressly skeptical about just such an enterprise—“Whoever wishes ... to pursue the semantics of colloquial language with the help of exact methods will be driven first to undertake the thankless task of a reform of this language ... [and] after being rationalised in this way [it may be doubted whether colloquial language] would still preserve its naturalness” (Formalised 267)—Davidson argued in reply that “though some ‘tidying up’ will be needed ... this need not be such as to transform [natural language] out of all recognition” (PhL 121).³³

In her first published article (Equivocality), Haack exposed the futility of attempting, as Fred Sommers had done, to formulate a rigorous, philosophically useful criterion of equivocality for expressions of natural languages. Ten years later, she was on the verge of doing the same for Davidson’s hopes for a quasi-Tarskian “clear and testable criterion of an adequate semantics of a natural language” (Davidson 1967, 320). In the earlier piece, Haack had pointed out that due attention to the character of figurative language was sufficient to scupper the enterprise; in *Philosophy of Logics*, she observed that the Davidson program “raises methodological questions which are ... tricky enough that one cannot say with any confidence that Davidson has shown that Tarski’s theory applies to English” (PhL 127, emphasis deleted). Chief among these questions is “what exactly the constraints should be on Davidson’s enterprise: what apparatus should he be permitted to use, and where?” (*Ibid.*); and herein hangs a tale that can bring this path through the first decade of Haack’s philosophical work to a terminus.

Davidson thought that explaining meaning in terms of Tarskian truth would place a problematic intensional notion on a secure extensional footing. When the meaning of a compound sentence is a function of the truth-values of its component sentences—as the meaning of ‘Snow is white and grass is green’ is determined by the meanings of “Snow is white” and “Grass is green” and the character of the logical operation of conjunction—this trick is easily turned. But with, for example, *oratio obliqua*—sentences of the form “S said that *p*”—matters are quite otherwise. Davidson offers a paratactic account of such sentences, construing the “that” demonstratively, rather than relatively, so that in “logical form” “S said that *p*” is to be read as: “*p*: S said *that*.” If S’s language is different from that of the target sentence, *p* can’t be replaced by exactly what came out of S’s mouth. Instead, it will have to be a *translation* of S’s verbiage into the relevant meta-language. But the concept of translation is exactly as intensional as the notion of meaning itself. Although Davidson is at least half aware that this hard fact poses a serious threat to his enterprise, he continued for a time to put a brave face on things. By the time he wrote the Introduction to a 1984 collection of papers (which included those in which he outlined his influential project), however, his confidence had waned (1984, xiv-xvi); and a few years after that he had effectively put the whole thing behind him—for reasons that Haack had pointed to much earlier.

In the Intellectual Autobiography he wrote for the volume devoted to his work in *The Library of Living Philosophers*, Davidson recalled a “backhanded tribute” from “Freddie Ayer.” In “a review of a book that had nothing to do with me,” he tells us, Ayer lamented “the younger philosophers [at Oxford], seduced by Donald Davidson [into] devot[ing] their energy ... to the Sisyphean task task of teasing a theory of meaning out of Tarski’s theory of truth” (1999, 49-50). In terms of the maxims of Haack’s philosophy outlined above, this dispiriting piece of perverse self-congratulation highlights the importance of exercising good judgement in applying them; specifically the importance of resisting foolish stubbornness in the name of Maxim Three (Keep at it). Once you’ve identified a project or ambition as futile, or a question as badly framed, you don’t keep at *it*; you keep at philosophy by searching for something more fruitful.³⁴

EXPERIENCE AND REASONS

If Haack’s philosophy of logic had set out from the simple fact that non-classical systems must be reckoned with, her epistemology is rooted in not so simple facts about knowledge, the first of which is that we have it; but the second of which is that we might be wrong in thinking this. If we do know things, we don’t know

with certainty *that* we do. More precisely, we can never be sure which bits of what we *think* we (now) know, we actually do know.

In a resonant phrase which Haack would come to cherish, Peirce describes his philosophy as animated by “a contrite fallibilism” combined with a “high degree of faith in the reality of knowledge” (CP 1.13). In *Deviant Logic*, Haack made only cursory mention of Peirce, and minimized the importance of her using “pragmatism” to designate the holistic, anti-absolutism about logic that animated the arguments and conclusions of that book.³⁵ By the time of the expanded second edition of *Evidence and Inquiry* (E&I), however, she highlighted the book’s pragmatist character in its new subtitle,³⁶ and in its Foreword cheerfully endorsed a description of her as “the intellectual granddaughter of Peirce” (24).³⁷ As she developed her foundherentist theory of epistemic justification, Haack drew upon and advanced the classical pragmatist tradition in philosophy in strikingly fruitful, constructive ways.

Foundherentism wears its transcendence of an entrenched dichotomy—foundationalism and coherentism—on its sleeve; but, central as it is, it is only one of a host of productive reconceptions and reorientations undertaken in E&I. Where *Deviant Logic* and *Philosophy of Logics* had been the fruit of about half a decade’s intensive labour each, the interval between Haack’s first publication in epistemology and her book length treatment of the subject was almost twenty years. As she kept at it, a project originally conceived along what had become familiar lines—to “contribute to questions about empirical knowledge somewhat as [DL] had contributed to questions about non-standard logics and their motivation, and [PhL] to questions about validity, proof, truth, necessity etc.”—became “something much more ambitious [...] ... the ‘reconstruction of epistemology’ of [E&I’s] subtitle” (11).

The difficulty in philosophy of finding “data points” agreed to by all and sundry comes to a head in epistemology. If only we knew where to start, we could start there; if only we understood the foundations of knowledge, we could get on with acquiring more of it. As Neurath’s figure of a boat under repair while underway reminds us, scientists have long got on with acquiring knowledge, unfazed by worries about its correct definition or ultimate grounding. In the above mentioned first article in epistemology “Haack argued that the results of psychological research (and/or everyday psychological truths) may contribute positively to an epistemological theory *provided it isn’t foundationalist in character and ambition*; and clearly implied, without saying it in so many words, that this was a good reason to reject foundationalism.

On the standard picture, Carnap’s *Aufbau* is a paradigm example of an ambitious, foundationalist venture;³⁸ and in her earliest epistemological work, Haack used the vicissitudes of this project as an instructive foil for her ideas. Two years after “The Relevance of Psychology” she remarked on a surprising number of Kantian themes in Carnap’s book.³⁹ In both the *Aufbau* and the *Critique of Pure Reason*, for example, “[l]ogic and psychology, supposed ostensibly to be quite separate, are in practice almost inextricably intertwined” (1977, 171). In the one case, transcendental logic is supposed to validate empirical knowledge by establishing the conditions of its possibility; in the other an epistemologically oriented rational reconstruction of empirical knowledge is supposed to do much the same thing by showing how physical objects can be defined in terms of “elementary experiences.”

Elementary experiences—*elexes*—are the primitive constituents of the *Aufbau*’s attempt to construct human knowledge out of nothing but “autopsychological” *elexes* and a primitive relation *Rs*, recollection of similarity, “which holds between two *elexes* *a* and *b* just in case *a* is earlier than, and resembles, *b*” (1977, 172): certainly a heroic endeavor, like building an Empire State Building out of toothpicks.⁴⁰ But when, in explanation and defence of his decision to take *elexes* to be concrete individuals—“momentary cross-sections of experience,” rather than repeatable universals, i.e. phenomenal properties—Carnap “appealed to the work of the Gestalt psychologists” (which, he believed, had shown that “we recognize colors, smells etc. only via recognition of whole structured perceptions” [1975, 162]) he violated his foundationalist strictures conspicuously. In theory Carnap’s ambitions are heroic; in practice they are self-undermining.⁴¹

By 1982 the rudiments of Haack’s foundherentist union of what’s compelling about foundationalism and coherentism without admixture of what’s untenable in each were in place. In “Theories of Knowledge: An Analytic Framework,” she identified the position, and indicated its advantages over the traditional ri-

vals; and she began E&I with expanded, refined versions of the arguments of that paper (E&I, 11). Notable improvements are deepened and more revealing distinctions, interconnections, and overlappings regarding the contrasts between: (a) fallibilism and skepticism, (b) foundationalism and coherentism and (c) naturalism and apriorism. In consequence of these advances—in particular, the separation of foundationalism as such from its venerable infallibilist forms—Carnap’s *Aufbau* was no longer suited to the role of model instance of apriorist foundationalism.⁴²

Distinguishing the idea that knowledge requires foundations from the idea that it requires certainty enables Haack to bring the theory of epistemic justification into focus. As far as that enterprise is concerned, the core traditional contrast is between a one-directional foundationalist model (exemplified emblematically by Descartes) that takes justification to require basic beliefs “justified independently of the support of any other belief” (51) upon the support of which all other justified beliefs depend, and a coherentist model (found in grand style in Hegel) on which justification consists in mutual support among the members of a suitably comprehensive coherent set of internally coherent beliefs. The distinct question whether basic beliefs are required to be unshakeable bedrock, or can instead be “justified *prima facie* but defeasibly/to some degree but not completely” (54) is correctly seen as a distinct question. The venerable idea that indubitable foundations of knowledge are necessary to escape skepticism remains as a crucial premiss in the “No Tolerable Alternatives” argument for foundationalism, skepticism being the intolerable alternative allegedly left if justifications don’t terminate in foundational beliefs. According to this argument unless chains of justification—belief *a* justified by belief *b*, which is justified by belief *c* etc.—come to an end in beliefs that are justified but not by the support of other beliefs, we have an infinite regress, and skepticism looms; we’re never justified in believing anything. The argument fails because congeries of justifying beliefs don’t need to form a chain; and outside of made-up philosophical examples they rarely do.⁴³ Foundationalism isn’t required to ground knowledge, and coherentism isn’t required to vindicate fallibilism.

In its reliance on the misplaced analogy between epistemic justification and chains of reasoning, the No Tolerable Alternatives argument sins against Haack Maxim Two (Say No to False Dichotomies). But as the “Drunken Sailors” argument—that “the coherentist’s claim that empirical beliefs can be justified by *nothing but* relations of mutual support is as absurd as suggesting that two drunken sailors could support each other by leaning back to back—when neither was standing on anything!” (65-6)—reveals, coherentism falls foul of Maxim Four, Don’t Forget the World. For the fundamental problem with the coherentist idea that mutual support on its own could account for the justification of beliefs about the empirical world is that without experiential *input* “it could not be supposed that a belief’s being justified could be an indication of its truth, of its correctly representing how the world is” (66).

The first chapter of E&I recapitulates the rudiments of “Theories of Knowledge” with more punch: a *prima facie* case for foundherentism—the conjunction of the theses: (i) that “a subject’s experience is relevant to the justification of his empirical beliefs” [(57) (without requiring a “privileged class of empirical beliefs justified exclusively by the support of experience, independently of the support of other beliefs” [Ibid.]), and (ii) that “justification is not exclusively one-directional, but involves pervasive relations of mutual support” (58).—is made, yielding the outline of a theory ready to be fleshed out and put to work. A revealing upshot of the case studies in foundationalist and coherentist epistemology that follow is that, as their respective proponents struggle to cope with damaging objections, they are inevitably tugged towards the intermediate position Haack defends.

The memorable image that gives the Drunken Sailors argument its name is owed to C. I. Lewis, whose struggles to defend an infallibilist foundationalism effectively reveals the shortcomings of both infallibilism and foundationalism. When Lewis avers that “most parts [of our empirical knowledge] are stabilized in measure by their mutual support” (AKV 171), he grants an important coherentist point; mutual epistemological support is different from vicious circularity. But when he adds that all [empirical knowledge] rest[s], *at bottom*, on direct findings of sense” (Ibid, emphasis added), he lapses back into foundationalism. When he allows that “*proximate* grounds of the probable or credible need not be certain” he motions towards a thoroughgoing fallibilism; when he insists that empirical knowledge would nevertheless be unintelligible

unless there were “ultimate data ... which are ... certain” (333, emphasis in original), he backs away from it. When he glimpses the force of what Haack calls the “Swings and Roundabouts” argument against infallibilist foundationalism—to the effect that because the epistemic security of a belief (its immunity to error) is (more or less) inversely proportional to the richness of its content, there can be no beliefs which are both absolutely secure and capable of supporting “a substantial body of other beliefs” (E&I 69)—he exchanges his strong, infallibilist foundationalism for a weaker version, according to which, even if some beliefs—about one’s immediate experience perhaps—are infallible, they are not on their own able to ground the rest of our knowledge.

Lewis recognizes that if we are to escape a solipsism of the present moment, we must rely on our memory. When he admits that “the present fact of memory, which suggests ... to me [a judgement that I experienced something in the past] is ... not sufficient to assure the truth of it,” since “a generalization is required to the effect that when such data of memory are given, the seemingly remembered experiences may, with some degree of accuracy, be accepted as actual” (AKV 336), he has what he needs to recognize the force of the “Up And Back All The Way Down” arguments for the superiority of foundherentism over any kind of foundationalism, however weak or impure. For he is acknowledging that generalizations not given in immediate sensory experience are able to help justify judgements made on their basis, just as judgements about what is present before us now help justify beliefs about how the world around us generally is. Having all but recognized that foundationalism can’t be correct since justification goes back and forth and up and down, Lewis is nevertheless unable to follow through; having thus approached the brink of foundherentism, he reverts a few pages later to speaking of empirical knowledge as resting on the “foundation stones” of “items of truth which are disclosed in given experience” (AKV 353).

Turning now to coherentism, we can begin with the fact that what we see and hear etc. influences what we believe. Everybody agrees that this is so, even Parmenides, else why would he need to denounce in such vigorous terms our ingrained tendency to acquiesce in beliefs supported chiefly by sensory evidence? In this brazen refusal to accept the testimony of the senses, Parmenideans depart from good sense, and exit the arena of the epistemology of empirical knowledge; and odd as the juxtaposition may seem, the fatal flaw in a truly coherentist approach to epistemology is that it does no better than Parmenides on the question of how experience bears on knowledge and belief.

Laurence Bonjour’s master argument for his coherentist account of empirical knowledge relies on two dichotomies, between foundationalism and coherentism and between internalism and externalism. Assuming that if foundationalism can’t be made tenable, coherentism must be, and *mutatis mutandis* for the choice between externalism and internalism, he takes what he believes to be the insuperable difficulties confronting foundationalism and externalism to mandate the conclusion that a satisfactory epistemology must be internalist and coherentist: Haack’s critique is rooted in the falsity of both dichotomies. Once it is realized that the first contrast isn’t exhaustive, and the second “not robust enough to carry any serious weight” (E&I 95), Bonjour’s strategy is robbed of its *raison d’être*.

Relying on a Kantian distinction between origination and justification, Bonjour grants that many of our beliefs are not arrived at by inference from other beliefs, but are, in his phrasing, “cognitively spontaneous.” Relying on the tendentious version of that distinction that underpins the “Irrelevance of Causation” argument—deeply flawed and hydra-headed, we’ll meet this argument again, more than once; it runs like this: since experiences aren’t *propositional*, they can’t *entail or preclude, or confirm or disconfirm*, anything; consequently, they must be *irrelevant* to the *logical* question of the *justification* of belief—he holds that the origination of belief cannot of itself contribute to its justification. Nevertheless, he hopes to validate our strong impression that we learn things about the world through our senses by means of an argument “which appeals to [the] non-inferential origin [of cognitively spontaneous beliefs]” (E&I 96, emphasis deleted).

Bonjour thinks he can vindicate our conviction that beliefs prompted by what we see and hear etc. can be thereby justified without compromising his coherentism by: (1) resting the justification of observation on the justification of introspection, beliefs about the world outside us deriving their credentials from be-

liefs about those of our beliefs that spring up unbidden; and (2) imposing a “regulative meta-principle” on belief sets capable of conferring empirical justification, demanding that any such set “contain laws attributing a high degree of reliability on a reasonable variety of cognitively spontaneous beliefs” (BonJour 1985, 141). Strained on the face of it, this “Observation Requirement” is vitiated by an unresolvable ambiguity. On one interpretation, it is consistent with BonJour’s coherentism, but doesn’t ensure observational input into eligible sets of beliefs; on another, it does require such input, but is no longer coherentist.

Had Lewis frankly acknowledged the *pervasiveness* of mutual support in the structure of empirical knowledge, he might have been prompted to abandon his anemic, fallibilist foundationalism for a proto-foundherentism; had BonJour been willing frankly to compromise his coherentism by including an Observation Requirement couched in worldly rather than doxastic terms, he would have been nudged towards foundherentism from the other direction. And had Donald Davidson thought through the unhappy implications of the argument from the irrelevance of causation to justification, he might have glimpsed the merits of foundherentism from yet a third vantage point.

Davidson argues for coherentism incidentally, as a consequence of what he takes to be inescapable constraints on any plausible criteria for the attribution of beliefs. Because the attribution of beliefs to subjects must (he is convinced) be both holistic and responsible to empirical considerations, it follows, amazingly enough, that “belief is of its nature veridical” (1983, 146); and this makes the justification of belief as such a kind of *fait accompli* on quasi-a priori grounds: “the question how do I know that my beliefs are *generally* true answers itself, simply because beliefs are by nature generally true” (Ibid., 153, emphasis added). On its own, this argument doesn’t establish coherentism, though if it worked (which it doesn’t),⁴⁴ it would allow one to reply to the drunken sailors argument with the riposte that *collectively* the sailors/beliefs are *by nature* upright/connected to the world. Coherentism is supposed to follow from principles of radical interpretation by appeal to the thesis that causation can’t confer justification. Since we know in advance that beliefs are generally justified (the radical interpretation argument), and that they can’t be justified by experience (the irrelevance of causation argument), they must be justified on (weakly) coherentist principles.⁴⁵ As noted above, the irrelevance of causation relies on the unstated premiss that, since epistemic justification must be propositional and logical, causal relations between beliefs and the experiences that prompt them can play no justificatory role. As Haack makes plain, this premiss can, and should, be questioned.

To cut a longer story short, Davidson fails to see that the criteria of justification we habitually employ in everyday life—and the most advanced science, investigative journalism, detective work, and indeed any endeavor in which getting the truth really matters—has two aspects: a causal aspect pertaining to what a subject’s evidence for a belief is, and a quasi-logical, evaluative aspect pertaining to how good that evidence is. To the uninitiated, indeed, the Irrelevance of Causation argument would surely seem perverse. Isn’t it obvious that experiences can not only cause belief, but justify it? Why can’t I know he was there because I saw him; or know it was she because I heard her voice? With the common wisdom of mankind, Haack of course thinks we can know such things on such grounds; but she neither denies nor shirks the hard philosophical problem of figuring out *how* to integrate experiences themselves into a subject’s evidence for or against a given belief.

According to foundherentism, then, how justified S is in believing that *p* can depend on how well *p* is supported by experiences of S. But experiences aren’t the sort of thing to have a truth value, so it’s not obvious how to bring them to bear on the likely truth of beliefs formed (at least in part) on their basis. Haack’s solution is to begin with a subject’s “S-evidence” for a given belief, evidence in the form of “states of [the subject] which are operative in the vector of forces resulting in [his] believing that *p*” (E&I 120). Not all states in this vector of forces qualify as evidential, however, only those plausibly thought to emerge from the believing subject’s interactions with the world (or himself) in appropriate ways: “Belief states, perceptual states, introspective states, memory traces ... count as evidential; other states, such as the subject’s desires and fears, his being under the influence of alcohol or panic etc. [do] not” (121).

Having identified a subject’s evidence (S-evidence that is) for a belief, we ask how good it is; but in order to do that S-evidence must be transformed into C-evidence, evidence as content of a proposition rather

than state of a subject. Psychological and physical states of believing subjects can compete or cooperate with each other; but they can't "support or undermine each other, probabilify or disconfirm each other, be consistent or inconsistent with each other, cohere or fail to cohere as an explanatory story" (124). So, since justification is concerned with truth, and is conferred by evidence, evidence must be put in a form suitable for evaluation with respect to truth. A subject A's S-evidence for a belief p is, accordingly, converted into his C-evidence by: first, taking his *C-reasons* to be the propositional content of those beliefs "[his] believing which constitute his S-reasons for believing that p "; and second, taking A's experiential C-evidence to be "sentences or propositions to the effect that A is in a certain state or states—the state(s) which constitute(s) A's experiential S-evidence for believing that p " (Ibid.).

How good is a subject's body of evidence for a given belief of his? Haack's model for answering this question is "is not, as a foundationalist's might be, how one determines the soundness or otherwise of a mathematical proof; it is rather how one determines the reasonableness or otherwise of entries in a crossword puzzle" (126). In such unprepossessing tones is born one of Haack's topmost contributions to epistemology and philosophy generally.

The model of a mathematical proof for the assessment of empirical evidence is both surreptitiously foundationalist, and incipiently formalist, encouraging the unfortunate idea that advances in the understanding of "probable knowledge" are to be sought chiefly in the fields of inductive logic and confirmation theory. But, Haack observes, "that there is such a thing as favourable-but-not-conclusive evidence" has a much better claim to being a pre-theoretical datum than does the assumption that "there is such a thing as 'inductive implication' or 'inductive logic'", especially if the latter "is taken to indicate relations susceptible of a purely syntactic characterization" (129). Establishing how good a subject's evidence for an empirical belief of his is isn't a matter of *proving* anything; as the crossword analogy makes apparent, assessing evidence is a matter of weighing different factors in the balance, with little prospect of a linear ordering or an algorithm for trading off success on one dimension against failure on another. How reasonable one's confidence in a candidate answer to a crossword clue is depends on:

how much *support* is given to this entry by the clue and any intersecting entries that have already been filled in; how reasonable, *independently* of the entry in question, one's confidence is that those other already-filled in entries are correct; and *how many* of the intersecting entries have been filled in (126-27, emphases added).

In line with this three part dependence, and on the working assumption that how justified someone is in believing something depends how good his evidence is, Haack begins to spell out her foundherentist criteria of epistemic justification by taking it to be a function of (a) how favourable the evidence for a proposition is; (b) how independently secure that part of the believing subject's evidence that consists in further beliefs is; and (c) how much of the evidence relevant to the truth of the belief has been taken account of.

If your stock of beliefs entails p , you have, insofar, evidence for its truth that could hardly be better; but if these beliefs are ill-founded, an argument from their propositional contents to p may be valid but unsound, and this may make your overall evidence for p quite poor—and similarly if there is evidence relevant to whether p not within your ken. At the core of Haack's account of what makes a body of evidence supportive (or not) of a target belief is the idea that it depends on how well the evidence and the belief fit together. According to what, in an allusion to the eponymous protagonist of a mid-1970s legal drama, Haack calls the "Petrocelli Principle," evidence E "is the more supportive [of a belief that p] the less room it leaves for alternatives to p " (127). Less metaphorically, a body of evidence supports a proposition to the degree that adding the proposition to the evidence "improves its *explanatory integration*" (Ibid., emphasis added) more than does adding competitor propositions to it.

Unlike the more familiar notion of explanatory coherence, explanatory integration has a role for experience as well as belief; unlike the all too familiar notion of inference to "the best" explanation, it is neither one-directional, nor optimific. In like fashion, the comprehensiveness dimension of foundherentism's cri-

teria differs from the “total evidence” requirement on inductive inference in being open ended and gradational. Haack’s epistemology, and her philosophy generally, is thoroughly synechistic and meliorist: things hang together in multifarious ways; and while perfection isn’t to be hoped for, improvement can nevertheless be striven for. That’s the way the world is, and we mustn’t forget it in our philosophy.

Having articulated foundherentism in enough detail to make it a worked out theory rather than an ambitious promissory note, Haack returns to issues from “The Relevance of Psychology” and to a philosopher whose dogmatic absolutism about logic had been patiently criticized in *Deviant Logic*: Karl Popper. As Popper’s falsificationist philosophy of science was marked by a sharp divide between deductive logic (essential to science) and inductive logic (irrelevant to science, and non-existent), so his later “epistemology without the knowing subject” is marked by a sharp divide between the justification of theories and other cognitive artifacts (the job of epistemology) and the causation of belief (the job of psychology). Haack had first articulated her diagnosis of the flaws in this outlook in two papers published in 1979.⁴⁶ In E&I she uses Popper’s views, and their elaboration and defence by John Watkins, as a foil for further articulation of her account of the evidence of the senses.

Foundherentism’s integration of a subject’s perceptual experiences into his evidence for a particular belief takes it for granted that what we perceive by means of our sense organs are “things and events around us” (E&I 158), not sense-data or “seemings” “immediately” before us epistemologically speaking. Given this, Haack allows, the question whether, this pre-analytic presumption can be supported by plausible scientific theories of perception naturally arises. In answer, she points to the remarkable congruence between the rough and ready theory of perception built into foundherentism and the “theory of ‘direct perception’ central to the ‘ecological psychology’ of J. J. Gibson and his followers” (162).

As Haack was working out, her foundherentist dismantling of the deadlock between foundationalists and coherentists, Alvin Goldman was blazing a different trail to an ostensibly nearby destination. At first he presented his reliabilist theory of justification in a foundationalist guise, basic beliefs being justified just in case they were formed by unconditionally reliable processes, and derived beliefs if formed by conditionally reliable processes. Since tying justification to reliability does not, however, require this foundationalist structure; and, since, like foundherentism, reliabilism allows that the concept of justification is partly causal, it might seem to be a serious competitor to foundherentism in the effort to improve upon both foundationalism and coherentism by calling dubious assumptions of each into question. Upon examination, however, it becomes evident that instead of furthering this admirable end by contributing to the solution of hard problems, the much touted “reliabilist revolution”⁴⁷ in epistemology mainly multiplies factitious ones.

By contrast to foundherentism, with its working hypothesis that to be epistemically justified in a belief is virtually the same concept as that of having good evidence for it,⁴⁸ reliabilism proposes to account for justification without recourse to the concept of evidence at all. Instead of the foundherentist idea that evidence is good to the degree to which it is experientially anchored and explanatorily integrated, we have the “externalist” idea that a justified belief is a function of the truth conduciveness of the process by which it was formed. As soon as Goldman put this view forward⁴⁹ a welter of objections sprang up; and the root cause isn’t hard to find: that a subject’s evidence for or against a given belief, the process by which he formed it may be something of which he is entirely unaware; but the suggestion that whether or not (or the degree to which) we are justified in our beliefs might depend on matters *entirely* beyond our ken is highly implausible.

In his initial statement of the reliabilist theory, Goldman worried about the prospect of “a benevolent demon who so arranges things that beliefs formed by wishful thinking are usually true” (Goldman 1979, 16). In a world under the control of a benevolent demon wishful thinking is a reliable method of forming beliefs, but surely “we don’t want to regard beliefs that result from wishful thinking as justified?” (Ibid.). Indeed we don’t; so Goldman makes three qualifications to his theory: first, that in order to confer justification, a belief forming process must be reliable *in the actual world*, or in a “non-manipulated environment” (17); second, that what matters is not which processes happen to be reliable, but which ones we believe to be reliable; and third that justified beliefs must meet a “no undermining” clause to the effect that subjects who are justified in reliably formed beliefs can’t have had available to them other reliable processes which would

have prompted a different belief, but which they did not employ (20). The cumulative effect of these measures is to deny Goldman so much as a Pyrrhic victory; for they conspire to deprive reliabilism of any serious reliance on reliability. Without facing up to the consequences of the admission, Goldman is conceding that in order to solve problem of which he seems lucidly aware, he just in effect acknowledge that subjects who lack evidence that given beliefs of theirs were reliably formed (or who have evidence available to them that beliefs of theirs were not so formed) cannot be justified in these belief *even if they were, in fact, formed by reliable processes*.

Six years later, in a large book,⁵⁰ Goldman proposed a new defence of reliabilism, couched in terms of criteria of correctness for “systems of J-rules,” where J-rules are “permissive rules for justified belief formation.”⁵¹ In order to handle by then familiar counter-examples—for example, the so-called “clairvoyance problem”⁵²—he must once again formulate protective clauses to the effect that reliable processes yield justification only if they aren’t compromised, for example by “cognitive states” which the subject in question could (and ought to) have brought to bear on the situation, but didn’t; i.e., once again, justification can be defeated by contrary evidence. Moreover, in order to respond to the objection that the reliabilist has, implausibly, to maintain that if we were in the thrall of a malevolent demon we would be deprived, not only of truth, but of justification, he proposes that the scope of reliabilist justification be restricted to processes that would be reliable if they were operating in “normal worlds,” i.e. worlds “consistent with our general beliefs about the actual world” (E&C 107). For reasons not worth entering into in detail, this maneuver fares no better than the earlier, actual world strategy. Because the beliefs in terms of which we are to understand what counts as a normal world are not to include beliefs about our cognitive powers, saying that justified beliefs are those that “would result *in normal worlds* in a [sufficiently high ratio of truth to false beliefs]” (Ibid., emphasis in original) implies nothing at all about which processes are reliable: the normal worlds restriction “makes no discrimination at all among beliefs” (E&I 203).

In due course, Goldman abandoned this second attempt to salvage reliabilism, and proposed instead that our pre-analytic concept of epistemic justification is systematically ambiguous between a weak and a strong sense of the notion.⁵³ The idea now is that in a weak, responsibility-focussed sense of justification, the intuition that we would be justified in the false beliefs to which we would be condemned if we were victims of a Cartesian Demon can be sustained; but in the strong (reliabilist) truth-focussed sense it is properly overridden. You are weakly justified in a belief as long as you can’t be faulted for holding it, but strong justification depends on the truth-conduciveness of the process by which you formed the belief.

Goldman thinks that a suitably divided concept of epistemic justification allows us to say what we should say, both about what our epistemic situation would be in a malevolent demon world, and about what the epistemic situation of “benighted cognizers”—members of cultures or communities in which gross superstitions, in the form of trusting in oracles, omens and the like, are rampant—can be in the actual world. If you are led into falsehood through no fault of your own, don’t deserve blame for acquiescing in the relevant false beliefs; that’s because not deserving blame is more or less the same thing as not being at fault. Nevertheless, the false beliefs of benighted cognizers may well not be justified in the more exigent truth-focussed sense at issue in traditional epistemology. As Haack points out, however, even if this proposal were to work for the case of benighted cognizers here on earth, the reasons why point an opposed moral in a malevolent Demon world.

Granting that we don’t think that people in the actual world brought up to trust in untrustworthy sources deserve blame for holding false beliefs derived thereby, but do think that in some sense they lack epistemic justification for them, our rationale for these contrasting judgements is that the evidence available to benighted cognizers is itself benighted. We take ourselves to have acquired more and better evidence for our beliefs, and to have developed superior means of “judging of it,”⁵⁴ than we are supposing was at their disposal. But in a Demon world, false belief is ineradicable; in those circumstances, we err no matter how much we “learn” or how well we judge of the always systematically misleading evidence foisted on us. So our reasons for denying “strong” justification to terrestrial believing subjects in impoverished epistemic circumstances don’t apply in this situation—and Goldman’s attempt to save reliabilism betrays a subtle fail-

ure to keep the world in mind. When real life people in dogmatic, superstition-ridden environments fall in line with the inadequate epistemic practices available to them, we may well feel pulled “between the verdict that [they are] and the verdict that [they are not] justified in [their] beliefs” E&I, 205). But we need not feel any corresponding ambivalence about how to assess our situation (perhaps that should be “our” situation) if *all* efforts to keep track of the world were foiled from the outset.

At this point, a less ambitious E&I might have brought its account of the standards of justification implicit in our ongoing practices of assessing belief from an epistemic point of view to a close: foundherentism has been established, and a popular rival, reliabilism, given a drubbing. But a host of meta-epistemological questions have cropped up, and there remains another possible competitor position to contend with: Quine’s “epistemology naturalized.” Haack’s examination in E&I of Quine’s shifting positions on central epistemological issues reminds one of her combing through his correspondingly unstable views on the viability of deviant logics almost twenty years previously. If anything, the painstaking labour required to sort things out yields even richer fruit in epistemology than it did in the philosophy of logic.

In *Deviant Logic*, Haack had shown that there’s a lot more to the seemingly straightforward distinction between expanding the ambit of classical logic and mounting a fundamental challenge to its pretensions than first meets the eye. In E&I she makes a parallel point with respect to the distinction between expanding the horizons of traditional epistemology and transcending the established enterprise altogether. Or rather, she makes a host of points; for the “seductively ambiguous rubric ‘naturalistic epistemology’” might be used to cover “significantly different (and in some instances incompatible) conceptions [of what such a thing could be]” (E&I 167). At one end of the spectrum is the suggestion that the term “epistemology” be allowed to refer “not only to the philosophical theory of knowledge, but also to natural scientific studies of cognition” (Ibid.); at the other, more radical end are “strong trends markedly hostile to the traditional projects of epistemology” (E&I 37), the most virulent of which is probably Richard Rorty’s conception of epistemology as a misbegotten enterprise born of a misplaced desire to restore philosophy to the preeminence it had allegedly enjoyed before the rise of modern science.

Rorty takes Quine’s animadversions against the “[dream] of a first philosophy firmer than science and serving to justify our knowledge of the external world” (Quine 1970b, 2) to be grist for his anti-epistemological mill. But Quine can also be found advocating what sounds like something quite different; not a repudiation of epistemology, but a transformed conception of it. Instead of “a separate a priori discipline,” epistemology naturalized would become “an integral, interlocking part of our whole web of beliefs about the world” (E&I 170-1). Sometimes Quine anticipates radical forms of scientism (and serves Rorty’s turn); sometimes (like Lewis, Bonjour, and Davidson) he anticipates foundherentism.

Oddly enough, the philosopher who once opined that “philosophy of science is philosophy enough” (1953b, 446) can’t make up his mind about science. When Quine speaks of epistemology as part of science, does mean by “science” the ensemble of those disciplines “ordinarily called ‘sciences’”? (E&I 172). Or rather “our empirical beliefs generally,” including in addition to canonical scientific fields, the whole realm of untutored “commonsense,” historical inquiry, and mathematics, logic, and philosophy itself? (Ibid.). English usage can support either choice, and there is nothing wrong with mixing and matching according to context. But there is everything wrong with exploiting this rhetorical license to keep hard problems at bay.⁵⁵ Does Quine wish naturalized epistemology to be a science of knowledge that replaces the traditional philosophy of knowledge? Or does he think that the traditional philosophy of knowledge would benefit by being undertaken in a scientific spirit? In Haack’s taxonomy, this is the question whether Quine’s naturalism is scientistic, or rather “a posteriorist.” Empirical science is of course a posteriori, but there is more to this broad category than empirical science. Scientistic naturalism, then, advocates either the outright dismissal of such epistemological concerns as the justification of belief and the character and quality of evidence (in its revolutionary version), or their being handed over to the special sciences (the reformist version); and in either version epistemology as a distinct branch of philosophical inquiry comes to an end. A posteriorist

naturalism, by contrast, urges the merits of tackling the traditional questions, philosophically, but within in the realm of empirical knowledge (science broadly conceived), rather than independently of it. Quine serves up a mish-mash, “a sort of composite of three, mutually incompatible, styles of naturalism [in epistemology]” (E&I 180).

The dream of a first philosophy firmer than science may be over, but the question of the epistemological status of science remains. In *Deviant Logic* Haack had pointed out that neither classical logicians nor their deviant competitors⁵⁶ can without further ado sit in judgement on their own case. In E&I she makes a connected point regarding the epistemology of scientific knowledge: just because the sciences have generated a rich abundance of well-confirmed, interlocking theories of the world doesn’t mean that *explaining* how they did it, and how it could possibly have been done,⁵⁷ should (or can) be left to them alone. Anticipating a theme that will loom increasingly large in its own right, Haack notes that

although *science* [narrowly construed] has acquired a certain epistemic authority in the eyes of the lay public, there is no reason to think that it is in possession of a special method of inquiry unavailable to historians or detectives or the rest of us, nor that it is immune from the susceptibility to fad and fashion, politics and propaganda, partiality and power-seeking to which all human cognitive activity is prone (E&I 187).

In Haack’s view the sciences, colloquially and sociologically so-called, enjoy “a distinguished epistemic standing, but not a privileged one” (188).⁵⁸ To see the difference, and to highlight the unpalatable consequences of awarding science an unwarranted privilege *vis à vis* the rest of life, I turn to Haack’s subversion of the revolutionary scientistic eschewal of traditional epistemology found in writings of Paul and Patricia Churchland and Stephen Stich.

I have already quoted from Haack’s discussion of Stich and the Churchlands, in illustration of her fine ear for the “note of ambitious wistfulness for greener pastures than the old, overgrazed epistemological fields” (E&I 238)⁵⁹ that permeates their jaded disdain for the supposedly worn-out problems and debates from which would like to wean us. The Comtean hankering after a science more advanced and glorious than philosophy—a recurrent malaise, as witnessed by Haack’s recently having had to expose the flaws in particularly noxious forms of it currently enjoying their brief moments in the sun⁶⁰—contrasts sharply with Haack’s Peircean vision of a philosophy truly animated by the spirit of science.⁶¹ In the present instance Haack’s target is a blunt argument that, if sound, would indeed discredit epistemology altogether: epistemology is concerned with criteria for evaluating beliefs with respect to likelihood of truth, i.e. justification in the specifically epistemic sense; but advances in cognitive and neuro-science reveal that belief is an outmoded category—so epistemology is an outmoded discipline.

Setting aside hype about alleged paradigm-shifting breakthroughs made by cognitive science and neuroscience, the burden of the argument (insofar as there is an argument) for this scientistic elimination of epistemology relies on an aggressive reductionism in the philosophy of mind. If intentional states generally aren’t reducible to physical states, and if the physical realm is all that there is, intentional states must be explained away as congenital illusions. If there are no intentional states, there are no beliefs; and if there are no beliefs there’s nothing for epistemology to be about. Since reductive physicalism is a piece of metaphysics, not a scientific discovery, this route to the elimination of epistemology depends, not on a due respect for science, but on “preconceptions in the philosophy of mind” (E&I 226), the embarrassing character of which is made evident by the incredibility of the conclusions they mandate. Where Stich and the Churchlands jettison beliefs and intentional states generally on the grounds that they are incompatible with physicalism, Haack gets to work on the hard problem of establishing how to understand physicalism in a way that doesn’t lead to patently incredible conclusions.

That “atheism” about beliefs is patently incredible can be shown by noting the impossibility *arguing* for it. As John Heil wryly observes, if the no-belief thesis were true, it could “neither be taken seriously, nor accepted,” and “must be simultaneously unbelievable and indubitable” (1988, 346). Where Heil is charitably

willing to envisage the possibility that Stich and the Churchlands may defend their promulgation of the offending thesis *Tractatus*-style, as a deep truth that can be shown but not stated, Haack prefers bluntly to retort that those who put it forward seem to her “to be kicking away the ladder while they are climbing up it” (E&I 238). Not content to leave it at that, she sketches the beginnings of a positive response to the scientific challenge, a “sign mediation” account of belief that will be amplified and augmented in later work.

To Stich and the Churchlands, the demise of epistemology is a welcome piece of collateral damage, but to Richard Rorty, at least in *Philosophy and the Mirror of Nature*, it is the arch enemy; which makes him Haack’s *bête noir*. For Rorty attacks epistemology in the name of pragmatism, and this rather stinks in Haack’s nostrils. Doggedly keeping at it, she has, accordingly, been especially scrupulous and copious in her replies to Rorty’s influential brand of anti-epistemological, indeed anti-philosophical, pragmatism.⁶²

I remarked above on Rorty’s penchant for conflating “philosophy in the linguistic-conceptual analysis mould” with philosophy period, such that disenchantment with the once triumphant paradigm led inevitably to disenchantment with the entire enterprise. In his critique of epistemology, this assimilation is presented as a natural consequence of the fact that early-to-mid-twentieth century analytic philosophy was the last gasp of “foundationalist” philosophy as it has been conceived since the rise of modern science. Rorty argues that the waning and final eclipse of the Middle Ages left a cultural void which philosophers aspired to fill. If philosophy could combine the intellectual rigour of the physical sciences with the sensitivity to the full gamut of human needs and aspirations of religion, the modern age could have it all: that, Rorty argues, was the pipe dream that gave birth to epistemology as it had come to be known by the time he and Haack began studying philosophy. Having seen through the linguistic turn, Rorty decided that the real philosophical revolutionaries were those who had undone some of its defining tenets from within; most notably, Wilfrid Sellars—in his critique of the Myth of the Given—and Quine, in his critique of the analytic-synthetic distinction. Merge these two critiques into one, Rorty argued, and you pull the rug out from under the whole idea of epistemology. Epistemology seeks to ground knowledge, so it has to be foundationalist; and epistemology is foundational to philosophy conceived as foundational to culture: take away the foundations and everything comes crashing down together.

Rorty’s this-or-nothingism is audacious: philosophy is either the Queen of the Sciences or an arrant pretender; truth is either Correspondence-to-Things-in-Themselves or “an empty complement” (Mirror 371) paid to beliefs that no one cares or dares to question; and epistemic justification either derives from Nature Itself, or is an entirely conventional affair, subject only to norms of conversation and social interaction. Haack’s first order of business is to distinguish three senses in which an epistemology, or the discipline itself, might be foundational, or foundationalist. The first is the sense pertaining to the structure of justification at issue in debates between foundationalists and coherentists. A second is the conception of epistemology as first philosophy firmer than science, with the “explication of criteria of justification [regarded] as an analytic enterprise, [and] their ratification as requiring a priori proof of their truth-indicativeness” (E&I 244). And a third is “[the] thesis that criteria of justification are not purely conventional but stand in need of objective grounding” (Ibid.).

As we have seen, Haack rejects foundationalism in the first two of these three senses, and grants that arguments owing to Sellars and Quine help establish their insufficiency; so the viability of Rorty’s dramatic conclusions depends upon the plausibility of his attack on foundationalism in the third, “objectivist” sense. His argument against objective standards of epistemic justification turns on distinguishing two senses of such crucial notions as “true” and “real”—a “homely, shopworn” sense, in which, “true” for example means “what you can defend against all comers,” and a “specifically philosophical sense which, like the Ideas of Pure Reason is designed precisely to stand for the Unconditioned”—and then arguing that “most of the perplexities of epistemology come from vacillation between these two senses” (Mirror 308). The distinction, and the argument based on it, are “stunningly untenable”; for it “cannot be said too plainly that there is *no* sense of ‘true ... in which it means ‘what you can defend against all comers’” (E&I 247)—no more, harking back to an earlier stage of her career, Haack might have added, than there is a sense of “very true” in which it means “true squared.” When we note that there are several conceptions and understandings of truth that

lie in between Rorty's hopeless irrationalism and the hapless Grand Transcendentalism to which he opposes it, the perplexities of epistemology are left standing, as challenging and thought-provoking as ever.

Not that the problems and ambitions of epistemology are etched in stone. On the contrary, one of E&I's most fruitful achievements lies in its (re)shaping and (re)conceiving what exactly epistemologists interested in understanding and justifying empirical knowledge should take themselves to be doing. Instead of wrangling over the conditions necessary and sufficient for it to be the case the S knows that P,⁶³ for example, Haack tries to "spell out with some precision and theoretical depth what is implicit in judgements that this person has excellent reasons for this belief, that that person has unjustifiably jumped to a conclusion, that another person has been the victim of wishful thinking ... and so forth" (E&I 49). Instead of trying to slay the skeptical dragon, she inquires into the *bona fides* of the patterns of epistemic evaluation ingrained in our everyday activities and intellectual undertakings, asking what reason we have to believe that we can take the standards we use to be *good*, whether or not we're entitled to suppose that (in foundherentist terms) beliefs supported by more and better evidence, more deeply anchored experientially and explanatorily integrated, have a better chance of being true than beliefs worse off in these respects.

In a cavalier reply to Haack's criticisms of his views, Rorty lets slip that he is sympathetic to the basic idea behind a reliabilist approach to the discipline he would like to put out of business (1995, 149); and his reasoning makes a perverse kind of sense. For one of the most telling demerits of reliabilism is its trivialization of the hard problem of ratification; and instead of following Goldman in brazenly trying to make a virtue of this necessity, Rorty takes it to be a *reductio* of the undertaking. Calling unavoidably to mind Russell's apothegm about the advantages of theft over honest toil, Goldman builds a "solution" to the problem of ratification into his response to the problem of explication (E&I 194). In a curious case of the extremes that proverbially meet—and an ironic case of abetting Rorty's agenda—this conflation of distinct problems is of a piece with the notorious Cartesian circle in Descartes' *Meditations*. With God in hand, Descartes can prove that what he perceives clearly and distinctly must be true; and with this principle in hand, he can prove that God exists, "prove" in both cases being taken aspirationally. Given a reliabilist explication of justification, the task of ratification is completed before it's begun: unless we form our beliefs so as to ensure truth, we don't have justification; and if we do form beliefs by means that tend to produce true ones the resulting convictions are justified automatically.

In the face of such attacks, reliabilists might seek refuge in the suggestion that we simply replace the standards of evidence appraisal we currently use with the reliabilist ones they propose. So conceived, reliabilism's brisk way with the problem of ratification might be passed off as a boon, rather than a bane. But this only moves them from the rock to the hard place; for "unlike the evidentialist criteria of justification we actually have, the reliabilist criterion is just not the kind of thing we could use to appraise a person's justification; all we can do is work on the basis of what we take to be truth-indicative, i.e., use the criteria of evidence that the revisionist reliabilist wants to replace" (E&I 271).

We think that we know, but we can't prove it—and neither should we try. In Haack's unflinchingly "un-Cartesian" epistemology, it's not just Descartes' "proof" that what we clearly and distinctly perceive to be true must be true that is rejected, the whole idea of *demonstrating* that "our presumed knowledge is indeed knowledge" (E&I 270) is given up as a bad job. In contrast to the unrealistic hopes of traditional a priorist attempts at ratification, Haack's more modest goal is "to offer what reassurance [she] can that ... foundherentist criteria are truth-indicative" (263). Her ratification of foundherentism takes the shape of pincer movement in which an approach "from above" works together with an approach "from below." Moving in the one direction, she seeks to "relate COMPLETE justification [i.e. belief sustained by evidence incapable of expansion, the explanatory integration and experiential anchoring of which can't be improved] to decisive indication of [truth]"; moving in the other "to relate lesser degrees of justification to grades of truth-indicativeness" (274). From above she provides a "rather oblique" response to hyperbolic Cartesian skepticism, from below a similarly qualified response to less radical pre-Cartesian skepticisms. In both cases, the argument rests on the point made earlier, that when we try to figure things out, "all we have to go on ... is our experience and the explanatory stories we devise to account for it" (278).

Working from above, it's tempting to take Peirce's account of truth, as "the opinion which is fated to be agreed to by all who investigate" (5.407), to be tantamount to an equation of truth with COMPLETE justification. If we do this, we can say that the best we can possibly do by way of striving indefatigably and intelligently *for* the truth just *is*, "by definition" what is true, thus establishing that the COMPLETE justification of a belief is indeed a decisive indication of its truth, because it is in fact *constitutive* of it. Lest such a strategy be thought to leave too many hostages to fortune, Haack complements it by a more guarded line of reasoning with a conditional conclusion: however we understand truth: "*Unless* COMPLETE justification is truth-indicative ... inquiry would be futile" (E&I 276, emphasis added). If you don't think there's a truth to be found, looking for it is as senseless as hunting for Easter eggs in November. If inquiring into something is to be a coherent undertaking, COMPLETE justification must be at least indicative of truth, even if not necessarily constitutive of it.

In the real world "we are seldom, if ever, COMPLETELY justified in any of our beliefs," so an argument from below, "focusing on lesser degrees of justification also needs to be explored" (E&I 277). If the argument from above brings questions of truth and meaning to the fore, the argument from below latches on to the details of the foundherentist account of what makes evidence supportive. Since the supportiveness of evidence E with respect to a belief that p "depends on how little room E leaves for competitors to p" (278), the more supportive a body of evidence for p is the less room there is for alternatives to p. In the limit case of COMPLETE justification, there is no room for anything but p, and in general "degree of justification by the foundherentist criteria [turns out] to be as good an indication of truth as one could have" (Ibid.).

Cutting against the fashionable grain as usual, Haack's quasi-deductive ratification from below marks significant progress on a problem many have thought to be frustratingly insoluble; the notorious conundrum of justifying inductive inference. In focussing on evidence instead of modes of reasoning, Haack avoids running into an all too familiar impasse. How might we try to justify induction? Not deductively, for a deductive argument with the conclusion that inductive inferences *must* result in true conclusions has a patently false conclusion; many inductions don't pan out. But not inductively either, for an inductive argument to the effect that we should continue to rely on induction in the future because it has served us so well in the past is patently circular. So we're stuck. By contrast, the question what contributes to the supportiveness of a body of evidence for a belief founded thereon is given a promising answer in E&I; and later work, in which the basic elements of this answer are retained, while the theory of which it is an integral part is refined and improved, has borne out the initial promise.⁶⁴

Some years before she had begun working out her foundherentist theory of the justification of empirical knowledge, Haack had pointed out that the traditional problem of justifying induction is only the half of it; for a parallel dilemma arises for any attempt to justify deductive reasoning: "an inductive justification of deduction would be too weak, a deductive justification circular" (DL 181).⁶⁵ The real problem here concerns reasoning as such; the problem—still on Haack's agenda, as noted above—of identifying the grounds of validity of the laws of logic.⁶⁶ And the general lesson is that "[e]pistemology ... and its meta-theory are integral parts of a whole web of theories about the world and ourselves, not underpinning but intermeshing with other parts" (E&I 283).

BRANCHING OUT IN ALL DIRECTIONS

Lesser spirits might have taken a breather, content to rest a while, drawing on the wealth of insights, distinctions, conceptual innovations etc. developed in E&I. Haack had other ideas, to put it mildly and with deliberate ambiguity. Keeping at it with redoubled energy, in the thirty years since moving to Miami, she has made substantial contributions to:

- Metaphysics: relativisms and realisms; the nature of belief; Innocent Realism.
- Philosophy of Science: scientific evidence and inquiry; value of science, and its relations to literature and religion; perils of scientism and pitfalls of "anti-science-ism"; Critical Common-Sensism.

- Ethics and Social Philosophy: integrity, affirmative action, feminism and multiculturalism, the state of the academy and professional philosophy, epistemological character.
- Law: scientific testimony and the expert witness; logic and experience in the law; law as a social institution; legal concepts as evolving.
- Metaphor, the growth of meaning, philosophy of literature, the epistemological novel
- Peirce, pragmatism, and the future of philosophy.

It would be impossible to cover even a modest part of all this in the pages I have left; and before I embark on somewhat more substantial discussions of the value of truth and inquiry, Innocent Realism and Critical Common-Sensism, and the further evolution of Haack's "multi-faceted philosophy" in the course of developing a novel, classically pragmatist understanding of the law, I can't forebear mentioning some topics and themes that will have to be left for another day: creative, imaginative work on metaphor extending back thirty years,⁶⁷ on the epistemological novel and literature and science, on the role of humour in serious philosophy, The Real, the Fictional, and the Fake, and the memorable "Coherence Consistency, Co-gency, Congruity, Cohesiveness &c."; courageous work on feminism and the distinction between inquiry and advocacy; meticulous, scholarly work on Peirce and the origins of pragmatism; and, personal favourites, pithy, resonant pieces on the many meanings of life and "Why I am Not an Oxymoron."

By the time Haack left England, it had become clear to her that hostility to epistemology—whether of a revolutionary scientific or a vulgar pragmatist stripe—was symptomatic of a wider cultural malaise; and this brought into fuller view an important distinction between the two strategies for rejecting epistemology rebutted in E&I. Formally, the reasons offered for the inutility of epistemology are parallel; the one camp dismisses the enterprise on the grounds that it relies on the mistaken assumption that there are beliefs, the other disparages it on the grounds that it relies on the mistaken assumption that criteria of justification are anything more than optional social conventions. These arguments fail in consequence of an impoverished understanding of their respective targets, belief and epistemic justification. But there is a difference between them. Beliefs have been around for as long as there have been people; so there's no hope of actually doing away with them, whatever you may think—which is to say *believe!*—in theory. The hard part is *explaining* what it is to believe something, rather than explaining it away.⁶⁸ But epistemology—and more specifically the project of crafting a satisfactory theory of epistemic justification—is an historically contingent undertaking that would come to an end if it simply lost adherents.⁶⁹ If you think you can get by without belief you're fooling yourself; but if you think that you can get by without epistemology you may instead be *worsening* yourself.

In criticism of his gestures in the direction of a world in which sometime epistemologists would seek, not to discover anything, but to "carry on the conversation of Western culture" (Mirror 377-8), Haack had retorted bluntly that "[t]here could be no honest intellectual work in Rorty's post-epistemological utopia" (E&I 252), a way of putting it that invites reflection on the doleful prospect of a dystopian world of intellectual maundering, but no *real work*. And indeed, as Haack and Rorty were squaring off, a sophisticated and alarming scorn for truth was burgeoning, as "radical feminists, multiculturalist, sociologists of knowledge, literary theorists," converged on the view that—recondite epistemology aside—honest inquiry of any kind is "neither possible, nor desirable" (*Manifesto*, ix and 1).

In their workaday activities, nobody "seriously doubts the possibility or the usefulness of finding things out, that is something we all take for granted when we inquire about plane schedules, or the state of our bank accounts, or the best treatment for our child's illness" (*Manifesto*, 1). This is why Haack regards those who nevertheless indulge in self-flattering aspersion of "The Disinterested Search for Truth"⁷⁰ as having succumbed to "a deliberate and factitious despair."⁷¹ It can be added that this discrepancy between high-flown theory and daily practice is a sign of having forgotten the world in an all too familiar way: in your study, you may write impassioned screeds excoriating culturally-invariant truth and the disinterested

effort to uncover it as dubious social constructs, deviously complicit in regimes of domination and exploitation; but when you're waiting in line at the bank, or wondering whether to participate in an experimental medical trial, or skate on the recently frozen pond, ... or etc. you perforce think otherwise, about the length of the line, chances of success of the trial, thickness of the ice.

A common source of hostility to "valorizing" the disinterested pursuit of the truth is a vivid awareness that much of "what has passed for [success in this endeavour] ... has ... turned out to be no such thing" (*Manifesto*, 93).⁷² False and noxious theories have passed for true, and supposedly unbiased investigators have been in the firm grip of harmful prejudices, perhaps culpably, perhaps in virtue of their times: too true, but fully in keeping with—indeed *requiring*—the possibility and value of truth and unbiased inquiry. Without a robust notion of truth, what would we be doing when we *acknowledge* the truths in question? (If you want to speak truth to power, you're ill advised to give up on truth!). To infer from our having often been wrong in the past to our never being able to be right is certainly to bear witness to a "factitious despair"; but "so ubiquitous" has this seductive *non sequitur* become that "it deserves a name"; Haack calls it "the 'passes for' fallacy" (*Ibid.*).

Sometimes the factitious despair involved in the passes for fallacy predominates over the pragmatic self-contradiction to which it may lead. When the precious harvest of truth is overrun by the canker worms and locusts of bullshit, duplicity, self-aggrandizement, and "preposterism"⁷³ it's tempting to give up and say "what profits it to sow?"⁷⁴—which brings us to Haack's Innocent Realism and Critical Common-Sensism, the first naming her distinctive approach to metaphysics, the latter her distinctive contribution to the epistemology of scientific evidence and scientific inquiry. Both outlooks had been implicit in her philosophy for some time; and her ongoing efforts to deepen and sharpen them testify especially well to the interplay between the first and third of my overarching maxims of her thought, to the deeply original way she keeps at it with patience, rigour, flair, and aplomb.

As foundherentism steers between foundationalism and coherentism, Innocent Realism navigates between the whirlpool of overambitious metaphysical realisms and the many-headed monster of self-undermining relativisms. In her first published formulation of the view— in an article that opened with a table of different forms of relativism that had been "sketched on the blackboard in response to a plaintive question from a student: 'Dr. Haack, what is relativism?—I know that Dr. X ... is against it, but I don't know what it is'" (*Manifesto*, 211)—Haack contrasts Innocent Realism with the "complex congeries of intermeshing theses" grouped together by Hilary Putnam, with pejorative intent, under the heading "Metaphysical Realism"; the theses, namely, that

there is one real world, consisting of a fixed totality of mind-independent objects; that there is one true description of this one real world, a description couched in a privileged 'absolute' scientific vocabulary; and that it's truth consists in its copying, or corresponding to, the world and the fixed totality of mind-independent objects therein (*Manifesto*, 153 [RR]).

Innocent Realism grants that there is one real world, but jettisons the excess baggage. Yes, there is one *real* world; the one with real things and stuff, as opposed to figments. But No, the one real world doesn't consist of a totality of mind-independent objects, that admits of a description that "correspond" to these objects and is couched in a unique privileged vocabulary. In the first instance, then, the real world as Innocent Realism conceives it contrasts with the innumerable fictional worlds created by writers and storytellers, not to mention liars and frauds. The contents of works of fiction aren't in the real world, but the works themselves are: the world, though *one*, is "a pluralistic universe, extraordinarily varied and multi-faceted and yet, at the same time unified" (*World and How* 552). There being only one real world, Haack notes, is compatible with there being many "universes" in the quasi-technical sense of the term invoked in multi-universe theories in cosmology. What evidence there is for the existence of many universes distinct from our own is, perforce, found in the one real world; a world in which

[b]esides the enormous variety of natural stuff, things, kinds, events, laws, etc., there is also the almost unimaginable range of human beliefs, hopes, fears, etc., and a dense mesh of human creations, physical and mental, intellectual and imaginative: physical artifacts; social institutions; intellectual constructions such as languages, notation systems, concepts and theories; and imaginative creations such as myths, legends, and folk tales, works of art, plays, poems, works of fiction and the imagined places, people, and scenarios they introduce (*Ibid.*).

As Haack makes clear,⁷⁵ the innocence of innocent realism is a philosophical achievement, not a human given. It is both a return—to believing in our philosophy what we all along believed in our hearts—and an advance, for it's anything but easy to flesh out the plausible starting points of Innocent Realism in a philosophically satisfactory way. As we've seen, Haack often makes progress by refusing specious questions, and skirting the futile debates they spawn. Is there, or isn't there "a fixed totality of mind-independent objects"? The question "traps you in a metaphysical corner[:] [a]nswer 'yes' and you seem to be committed to something like a Logical Atomist picture, with ... mysterious logically ultimate objects; answer 'no' and you seem to be committed to the idea that our conceptual goings-on bring new objects into existence" (*Manifesto*, 159 [RR]). But we have better reason to reject each of these alternatives than to regard ourselves as obliged to choose between them. So there's nothing for it but to seek out a better place from which to begin—which, by the turn of the present century Haack was doing in the process of developing a characteristically original pragmatist-foundherentist philosophy of science.

A crucial aim of *Defending Science* (DS) is signalled in its subtitle: to work out an account of science "Between Scientism and Cynicism," one that is neither unduly credulous and deferential to science, nor unduly suspicious and dismissive of it, able genuinely to illuminate what it is and what it does. "Scientism," then, is not restricted to the rampant versions found in Stich and the Churchlands, nor is cynicism the dubious prerogative of Rorty and his fellow initiates into the "the Higher Dismissiveness."⁷⁶ On the one side, mainstream twentieth century philosophers of science, "the Old Deferentialists," as Haack dubs them, give aid to scientism when they pay it the poor compliment of ascribing its successes to the rigorous application of "the" scientific method to its various subjects and problems. On the other, the New Cynics—including "radical sociologists ... literary theorists, rhetoricians, and semiologists, and philosophers outside strictly philosophy-of-science circles" (DS 21)—do science a disservice when they reject its epistemological pretensions outright.

Whatever else it is, science is a social institution; and whatever else it has achieved, it has enhanced and enlarged our understanding of the world prodigiously. No philosophy of science that gainsays either point can be right, and yet neither the Old Deferentialism nor the New Cynicism can do justice to both. Each side is impervious to the truth in the outlook of the other; more precisely, with respect to their opponents, neither side is disposed to register the crucial distinction between an undeniable truth, and a pernicious near-by falsehood. Science is social, yes, but that's not the end of it; for science isn't "*just another*" social institution, suitable for study only as such. Science has provided us with an extraordinary wealth of knowledge, yes, but this is something utterly different from revealing "the gospel truth" in a very nearly non-metaphorical way. The way to cleave to truth and eschew error is given in the title of the first chapter of *Defending Science*: regard science as "Neither Sacred nor a Confidence Trick."

Amplifying a theme already prominent in E&I, Haack emphasises the manifold continuities of scientific research with "the most ordinary of empirical inquiry" (DS 9). In lieu of a theory of scientific method, we get a richly worked out "More So" story about how "the modes of inference and procedures of inquiry used by all inquirers" are hugely extended and enhanced by various "mathematical, statistical, or inferential techniques, and special instruments, models etc.," all of which are "local to this or that area of science" (94-5). If "the" scientific method means a single, specifiable mode of investigation peculiar to all and only the sciences, there is no such thing (cynics are overly impressed by this point); *but* (as the cynics seem not to understand) there are many impressive, effective scientific methods that have contributed signally to wealth of knowledge owing to scientific inquiry.⁷⁷ Moreover, some of the most important "helps" to scientific in-

quiry concern modes of social organization; for example, the ubiquitous division of epistemic labour and pooling of resources, the encouragement of fruitful cooperation and competition, and “a delicate balance of institutionalized mutual criticism and checking and the institutional authority of well-warranted results” (108).

In the terms of the established guild, the philosophy of science developed in *Defending Science* is realist, as opposed to instrumentalist, or constructive empiricist, or social constructivist or whatever. But when Haack brings her Innocent Realist-Critical Commonsensist toolkit to bear on such staple philosophy of science problems as the paradox of the ravens, the new riddle of induction, and the underdetermination of theory by data the results are predictably refreshing and salutary. In hindsight, these puzzles were ripe fruit for a philosopher who had done extensive work on the scope and limits of formal methods and models in philosophy, and explained how and why “supportiveness of evidence is not a purely formal matter, but depends on the substantial content of predicates, their place in a mesh of background beliefs, and [of course!] their relation to the world” (DS 83).

First, then, to Carl Hempel’s red herring about black ravens and white shoes—that the logical equivalence of “All ravens are black” to “All things that aren’t black aren’t ravens” seems by impeccable reasoning to drive us to the absurd conclusion that observing a white shoe confirms the hypothesis that all ravens are black. This is troubling only to the extent that we fail to take seriously the fact “‘raven’ is no simple observational term, but a kind predicate” (DS 84). Since ravens are birds, the formation and testing of hypotheses about them will be sensitive to what is known about birds, and in particular to what is known about the diversity and causation of variations in colour pattern in different species and so forth.

Second, to the Nelson Goodman instigated wild goose chase for a principled reason why e.g. “green” should be projectible while “grue” isn’t. Like Hempel’s paradox, on which it was supposed to be an improvement, this gains traction only because of an entrenched preoccupation with the formal, syntactical dimensions of language and science, and the blinkered view of the relationship between evidence and hypothesis that follows in its train. Indeed, the fact that “‘all emeralds are green’ and ‘all emeralds are grue’ have the same form, but different content” (2005c, 244) should make the substantial rather than formal character of evidential support evident at a stroke. But wait, isn’t the whole idea supposed to be that while we stubbornly believe that emeralds are green, and are loath to think of them as grue, they are nevertheless grue “by definition.” Can it be denied that any evidence put forward in support of the one hypothesis also supports the other to an identical degree. Yes it can, for the challenge relies on an artificial restriction of the scope and kind of evidence that is allowed to bear on the question. Suppose a community that spoke a “grulor” language “with ‘grue’ and ‘bleen’ primitive and ‘green’ and ‘blue’ defined by reference to a time *t* before now” (85). After *t* they would find that all of a sudden “new blades of grass are coming up bleen, not grue, and ... the sapphires coming out of the mine are grue, not bleen” (DS 86). Would resident scientists not begin “to suspect that something was badly wrong with their physics of color (or grulor) and their optics of color- (or grulor-) perception” (Ibid.). Formal possibilities are one thing; serious epistemological consequences another.

Haack’s point here allows me to make glancing mention of two important themes in her later work: the importance of growth in meaning and enhancement of cognitive flexibility for the advance of science. Due attention to the history of inquiry from the right philosophical perspective reveals that, far from threatening the *bona fides* of scientific investigation, as so many Old Deferentialists feared (and New Cynics delighted in), changes in the meaning of theoretical terms, along with the development and application of fruitful metaphors and other helps to the imagination, can contribute materially to its success (World and How 556). Scientific theories need to fit the world, and this requires both apt and accurate description within vocabularies and frameworks and creative, judicious adjustments of them.

Finally, to Quine’s worries about underdetermination, and a third go round with this imposing figure of 20th century analytic philosophy. Unsurprisingly, Quine bundles many different theses under the underdetermination umbrella, one of which is the contention that “for any scientific theory, there is another which is empirically equivalent to, but incompatible with the first,” where theories are empirically equivalent

lent “just in case they entail the same set of ‘observation conditionals’”, and incompatible “just in case for some statement which follows from the one, either its negation or some statement which translates into its negation follows from the other” (DS 87). Given these definitions, it’s impossible even to state the empirical equivalence thesis unless we “have a way of distinguishing incompatible theories with the same empirical consequences from notational variants of one and the same theory, and of identifying the class of observation statements constituting the empirical consequences of a theory” (Ibid.). As we’ve already seen, in his better moments, Quine rejects both presuppositions of his own celebrated thesis! In the present context, however, the point to be stressed is that even if, however long we inquired, we were stuck with alternative incompatible answers to a genuine question susceptible to scientific inquiry the conclusion to draw would be that “this is only to recognize the imperfection of our epistemic condition” (88).⁷⁸

Science then, is glorious, but not immaculate; worthy of admiration and respect, but not worship. It is “messy, fallible, and fumbling”; like literature and sculpture, debentures and legislatures, and religion, science is something human all-too-human. Neither village pump atheists, nor true believers like the tone of this; each thinks that it cheapens science and/or religion to be thrown in with such motley company. Haack sees no cheapening of either science or religion, though she regards it as a “Point of Honour” to declare forthrightly that while the achievements of science testify to the intellectual maturity of the human species, those of religion bespeak our susceptibility to the charms of a childlike trust in the order of things.

To another imperfect, admirable, and (in our world) necessary human institution: the law. Since readers of this volume have four essays by scholars in the field at their disposal, I will restrict myself to brief “big picture” remarks about Haack’s development of a distinctive, pragmatist, “mosaic” conception of a “Pluralistic Universe of Law,” and focussed comments on an aspect of her work on problems of testimony by expert witnesses.

Like Oliver Wendell Holmes, Haack approaches the law, not as “some brooding omnipresence in the sky” (Holmes 1917, 222), but as the common factor in a congeries of legal systems conceived as “local, social institutions needing constantly to adapt to new circumstances” (EM xviii). Eschewing the “sometimes dizzyingly high level of abstraction and generality” characteristic of work done in philosophy of law *qua* sub-specialty of philosophy in the analytic mould, she agrees with one of that tradition’s leading figures, H. L. A. Hart, that “nothing precise enough to be recognized as a definition could provide a satisfactory answer” to the question, “What is law?” (Hart 1961, 16). In Haack’s view, the idea of law is “a kind of cluster concept” identifying an evolving nexus of institutions, “the whole ensemble [of which] ... represents a long and still on-going struggle to supplant arbitrary, brute force by intelligent, peaceable ways of resolving the disputes that inevitably arise in any human community” (2008, 455).

With regard to the law of evidence, foundherentism is of immediate help in directing us “[w]hen we look at the evidentiary rules and procedures of the law, [to] begin by distinguishing the epistemological values at stake if we want to arrive at factually true verdicts from legal desiderata such as promptness and finality of decisions, which may compete with them” (World and How 559). Tensions between practical imperatives and epistemological principles come to a head in the difficulties courts have had “domesticating” the rules for the admissibility of the testimony of scientific expert witnesses.

Lay witnesses can’t give their own opinion or conclusions as testimony; expert witnesses can, that’s the whole point of having them. But who counts as an expert? And when each party to an action produces its own experts, pre-vetted to deliver predetermined conclusions, mustn’t we, with Learned Hand bemoan the fact that juries must decide “between two statements, each founded upon an experience foreign to its own,” when “it is just because they are incompetent for such a task that the expert is necessary at all” (Hand 1901, 54). It’s a practical-epistemological bramble bush; and much of Haack’s work on the subject sounds a familiar cautionary theme concerning the scope and limitations of formal approaches to substantial questions. Just as there is no sure fire scientific method for enhancing scientific knowledge, and no sure-fire formal criterion for distinguishing an amplification to classical logic from a rival to it, so there is no “perfect legal formula” (EM 255) for admitting into the record all and only unimpeachable pertinent scientific testimony.

In his opinion for the majority in the US Supreme Court's landmark ruling in *Daubert*, that the old Frye rule governing the admissibility of novel scientific testimony had been superseded by the Federal Rules of Evidence, Justice Harry Blackmun ventured into the philosophy of science, for reasons that seem at first glance to be persuasive. If judges need to differentiate between admissible scientific evidence and unhelpful quackery, why not appeal to the leading philosophers of science who have worked long and hard on the "demarcation problem," the task of distinguishing genuine science from pseudo-science, metaphysics etc.? Because, answers Haack, that way madness lies, or at least a big waste of time. While there are no easy answers to the basic problem of how to make principled decisions about the standards governing admissible scientific testimony,

there are ... better questions and worse. Rather than worry fruitlessly about the problem of demarcation or the distinction of methodology versus conclusions and all that, we would do better to turn our attention to questions of other kinds—keeping in mind that, though perfection is impossible, better is better than worse, and the cumulative effect of small improvements can be quite large ... (EM 256).

Better questions for the sake of better answers: well worth keeping in mind, but how is this precept supposed to help judges or juries confronted with allegedly cutting edge arcane research, the validity of which makes all the difference to the merits of case on which they must sit in judgement? Even here, Haack's approach can help. The insistence on core continuity between scientific inquiry and everyday inquiry means that the lay public shouldn't give up too soon when evidence gets complicated and confusing; When the problem is that the evidence is confusing, those who are confused need to do their best to articulate the source(s) of their confusion and ask appropriate questions of anyone who might be able to help. So, to give but one of many suggestions for improvement Haack offers, perhaps, "consistent with filtering out legally unacceptable questions," ways might be found to grant jurors permission to "ask for clarification when they can't follow an expert witness" (EM 257). To give another: it's plausible to think that judges and attorneys would find it helpful to have at hand "a book, or series of books, regularly updated, suggesting what questions might be advisable to ask and what answers are favorable, and what unfavorable, to the reliability of expert testimony, should this or that kind of issue arise," the hope being that

some courts and some lawyers will ask those questions and draw reasonable conclusions from those answers; and that other attorneys and other courts will gradually, over time, learn from their experience, ..., and so on. ... This won't be a panacea; there can be no simple, one-shot solution to such a complex and multi-faceted problem. But it could be one useful step in the direction of improving both the quality of expert testimony, and courts' appraisals of its worth (2020b, 28).

Better questions for the sake of better answers: especially worth keeping in mind in philosophy, virtually all of the landmark advances of which have carved out distinctive questions in distinctive ways so (they hoped) as to improve their (and our) understanding of the world in its most general characteristics. This feature of philosophical inquiry is particularly prominent in the work of the classical pragmatist thinkers who have been of such vital help to Haack in her unflagging attempts to carve out fruitful questions and propose promising answers in her inimitable way. Instead of the quest for certainty, the pursuit of knowledge in a spirit of uncompromising fallibilism and judicious synechism. As Haack put it at the end of E&I: "When Descartes' epistemological story ended 'happily ever after', we know it was too good to be true. Perhaps it is appropriate to end my story—combining, as it does, a pervasive fallibilism with a modest optimism about our epistemic condition—'hopefully ever after'" (E&I 284).

And on that note, I will end my story—for now.

I would like to thank Jonathan Payton for valuable comments on the first two sections of this piece, and Susan Haack for invaluable help all the way through, especially in the intense final stages.

NOTES

1. Lambert Strether in *The Ambassadors*, 215.
2. In *World and How*, 2018.
3. In her contribution to the present volume, Haack takes up what she had passed over in *World and How*. Looking back over her career, she reflects on the development of her ideas, and the ways in which they've been nourished and sustained by characteristic habits of thought and qualities of character. The reader must judge how effectively the present piece complements "Not One of the Boys (Not One)"; it is meant to explore the same territory from a different angle.
4. As of July 1, 2020, the tally was a dozen books, more than 230 articles (and an even larger number in reprints and translations), and more than 700 lectures. Haack's work has been translated into 16 languages and appeared in 32 countries.
5. In the English speaking world, so-called continental philosophy was present on the margins, but at best tolerated by the analytic establishment.
6. See Ryle's article of the same name (1931-2). The perception of a sea change in the understanding of the nature and importance of language to inquiries in the humanities was widespread outside philosophy also, as the subtitle to George Steiner's, *Extraterritorial*, published when Haack was finishing her PhD thesis, illustrates: *Papers on Literature and the Language Revolution*.
7. As Haack has observed in recent essays (Not One, Real Question, Fragmentation) the churning mainstream of mid 20th century analytic philosophy has for some time devolved into a desultory tangle of narrow tributaries and out of the way rivulets—a disturbing case of swinging from "one faulty extreme to the opposite."
8. Cf. Not One "... I have learned over the years that I am temperamentally resistant to bandwagons ... (93);" and *World and How* "From the beginning, ... I was temperamentally disinclined to jump on fashionable philosophical bandwagons" (550).
9. *Philosophy of Logics* (PhL), xiv
10. The values associated with the terms of this contrast can be invidious in either direction, as big name research universities reward copious publication ahead of dedicated teaching, and well-meaning but over-zealous critics respond with ideas that would effectively turn the core of the university into a post-secondary secondary school.
11. *Deviant Logic* (DL), xxvi.
12. Haack has drawn explicit attention to the evils of cynicism in the life of the mind, for example in the title of "Not Cynicism, but Synecism" and the subtitle to *Defending Science—Between Scientism and Cynicism*.
13. Alongside the famous corollary of Peirce's First Rule of Reason: Do not block the way of inquiry. The first rule of reason itself is closely akin to Frye's apothegm: In order to learn you must desire to learn and in so desiring not be satisfied with what you already incline to think. (RLT 178). On the first rule of reason, see Haack 1997, and Migotti 1995; on the corollary, Haack 2014a.
14. A case in point being the "note of ambitious wistfulness for greener pastures than the old, overgrazed epistemological fields" found in the prose of Stephen Stich and Paul and Patricia Churchland when, betraying an "enthusiasm for revolution for its own sake" (E&I 238), they argue for the self-defeating thesis that the traditional epistemological concern for the justification of belief is misplaced because beliefs are a chimerical creation of "folk psychology."
15. Thomas Reid, *Intellectual Power* VI 4, the epigraph to *E&I*. I observe that the false dichotomies that Maxim Two deplores include faulty extremes, false presuppositions, and the like.
16. In the Continental tradition, consciousness isn't replaced by language, but its study is (re)conceived in phenomenological, as contrasted with metaphysico-epistemological, terms.
17. The first sentence of Ryle's article on systematically leading expressions reads: "Philosophical arguments have always largely, if not entirely, consisted in attempts to thrash out 'what it means to say so and so'" (139), the tacit suggestion being that only now can this salient fact be brought into full relief. In the early 1980's, Haack once remarked that the sort of philosophy encouraged by what was perhaps the last gasp of this genre of philosophical

- thinking, the notorious “Davidsonic boom” (of which Haack articulated trenchant criticisms early on, see pp. 11-12 below) opened up the prospect of PhD theses in philosophy devoted entirely to English adverbs ending in “ingly.”
18. Richard Rorty, in 1982, 3-18. Cf. his retrospective comment on an earlier effort “Metaphilosophical Difficulties of Linguistic Philosophy”: “What I find most striking about my 1965 essay is how seriously I took the phenomenon of the ‘linguistic turn’, how portentous it then seemed to me. I am startled, embarrassed, and amused to reread [passages that now strike me] as merely the attempt of a thirty-three year old philosopher to convince himself that had had the luck to be born at the right time” (1992 [1967], 371). The piece on which he is commenting was the introductory essay to the original edition of this volume. Not worrying about the unhelpful question of whether or not, philosophically speaking, she had been born at the right time, the twenty-nine year old Haack simply got down to business.
 19. As opposed to Wittgensteinian therapy, or an exercise in conceptual housekeeping, or a genre of literature, a “kind of writing,” as Rorty, with alarming consistency, maintains, for example in “Philosophy as a Kind of Writing” in 1982, 90-109).
 20. Cf. Peirce “[The *a priori* method of fixing belief] makes of inquiry something similar to the development of taste; but taste, unfortunately, is always more or less a matter of fashion” (5.383); also Burns “The man of independent mind/He looks and laughs at a’ that.”
 21. “In logic there can *never* be surprises” (Wittgenstein, *Tractatus*, 6.1251, emphasis in original).
 22. And no wonder that, when challenged to explain a perceived tension in her first book between her firm commitment to revising classical logic if needed, and her “reluctance ... to endorse any of the specific deviant systems ... discussed [in DL, Part Two],” Haack replied with the telling observation that “advances in logic are as difficult as any intellectual advances, so that it would hardly be surprising if, since the emergence of the system we now call classical, there have been more false starts than true breakthroughs” (DL xvi). No surprise also that the philosopher who in her first book defended her pragmatist view of logic on the modest grounds that it seemed “the most acceptable of the alternatives available” (DL 40) would later entitle a collection of essays *Manifesto of a Passionate Moderate*.
 23. “By the end of the 1980’s, ... I came to the conclusion that, despite his reputation for clarity, [Quine] is, in fact, a master of ambiguity” (2013b, 574). We will follow Haack’s path to this conclusion in her working through the many possible (sometimes incompatible) meanings of Quine’s naturalized epistemology (pp. 20-21) and the many different theses grouped under the headings “indeterminacy” or “inscrutability”—of translation, reference, empirical content (pp. 28-29).
 24. Cf. Nietzsche, “All things that live long are gradually saturated with reason” (Daybreak, §1).
 25. And also why Quine can think that no so-called alternative logic could be anything but an unorthodox formulation of classical logic.
 26. Morgan and Pelletier (1977, 79), where references to works making each of the quoted claims will be found.
 27. As the saying goes, “All that glitters is not gold,” which, in abbreviated form, Haack used as the title of her penetrating review of Stephen Shapin’s much touted *The Scientific Life*.
 28. This is why those concerned to go their own way are in need of a healthy intellectual community. Looking at you from the outside in, fellow inquirers can point you in the right direction when, by your own better lights, you’ve erred (in both senses of the word). Beginning with “Preposterism and Its Consequences,” first presented in 1998, and continuing through to Not One, Haack has emphasized the importance to philosophy of an intellectual environment conducive to serious, fruitful inquiry, and the burgeoning threats to it from within the profession and without, in searching and eloquent terms.
 29. In 1944 Tarski maintains that Aristotle’s formula ‘to say of what is that it is ...’ (see below) is “perhaps” tantamount to “The truth of a sentence consists in its agreement with (or correspondence to) reality” (54), only to say that “the Aristotelian formulation” is clearer than the correspondence version. He claims further both that he would be willing to give up the word “true” as a designation of the concept he has rigorously defined and replace it with a neologism, and that he “cannot imagine that anybody could present cogent arguments that the semantic conception [of true] is ‘wrong’ and should be entirely abandoned” (66). As Haack dryly remarks, “So [Tarski]

- isn't claiming that the semantic conception is 'right', but can't imagine how anyone could argue that it's 'wrong': hmmm." (2005a, 61).
30. *Adequatio intellectus et rei*, in *The Disputed Questions About Truth*, Article 1.
 31. First inserted text and emphasis mine.
 32. It was a devoted Popperian, David Miller (1974), who spotted the problem, that, contrary to its *raison d'être*, "Popper's definition of verisimilitude does not apply to comparisons between theories both of which are false" (PhL, 117, emphasis deleted).
 33. Haack is summarizing Davidson's more convoluted remarks in 1967, 314-5.
 34. The same, of course, goes for the rest of life. Effectively reminding us of the importance of such truistically good things as good judgement is a stock in trade with Haack. On the subject of the raft of perverse incentives in today's academy, for example, she points out, irrefutably but needfully, that when "industry and patience are focussed on the wrong ends" matters are made, not better, but worse. (2013c, 266).
 35. "I do not intend to place much weight on this label," she writes in a footnote, explaining that she chose it because of similarities between her view and "those of Dewey, White, and Quine" (DL 26). As she soon came to realize, the pragmatist with whose views Haack has most in common is Peirce.
 36. "A Pragmatist Reconstruction of Epistemology" (replacing the first edition's "Towards Reconstruction in Epistemology").
 37. The description is from de Waal 2005, 163.
 38. Recently this picture of the *Aufbau* has been challenged (for example by Richard Creath, see his entry on "Logical Empiricism" in the *Stanford Encyclopedia of Philosophy*, especially section 4.3 on "Unity of Science and Reduction"). At the time Haack was writing her early articles in epistemology, however, it was all but universally assumed that the intentions of the *Aufbau* were foundationalist. That the reasons for calling this reading into question overlap substantially with points made by Haack several years before the proponents of non-foundationalist readings of Carnap's book began to publish their views makes the scanting of her contribution (elaborated in footnote NN below) the more egregious still—and makes Judson Webb's honourable exception to this lamentable practice the more commendable (see his "Reconstruction From Recollection And The Refutation of Idealism: A Kantian Theme in the *Aufbau*" in the issue of *Synthese* cited below, 93-105).
 39. Ten years after the appearance of "Carnap's *Aufbau*" Michael Friedman published "Carnap's *Aufbau* Reconsidered" (Nous, vol. 21 no. 4, 1987), in which he highlighted the "affinity [of the *Aufbau*'s account of the objectivity of scientific knowledge] with Kantian and neo-Kantian conceptions of knowledge" (529) but didn't mention Haack's article; and he declined again to cite it in a follow-up piece from 1992 ("Epistemology in the *Aufbau*," *Synthese*, vol. 93, nos. 1-2, 1992, 15-57). In between, in "The Re-Evaluation of Logical Positivism" (*Journal of Philosophy*, vol. LXXXVIII, no. 10, 1991, 505-519) he had included Haack in a laundry list of philosophers (thirty-one of them, names only, no publications cited) whose work testified to a recent "flowering of historically oriented reconsiderations of logical positivism" (505). Academics can, indeed, be very nasty (Not One, 104).
 40. The image is from C. I. Lewis (*Analysis* 264). I owe the reference to Haack 1985, 238.
 41. Carnap, aiming to give science a philosophical foundation, helps himself to scientific results. Kant, aiming to set philosophy on the secure path of a science, insists on a rigorous separation of the a priori-transcendental questions that belong to philosophical science from the empirical questions that belong to the rest of it. In due course, and in a Peircean spirit, Haack will advance the cause of a scientific philosophy that is neither scientific nor a priori; see, especially "The Legitimacy of Metaphysics," and *Scientism and Its Discontents*, Lecture Two.
 42. In E&I there is but one reference to Carnap in the index, and it isn't made *in propria persona*, but embedded in a citation from Quine.
 43. Failure to appreciate this point is at the root of Peter Tramel's "pitifully weak" (Not One, 104) attempt to shoe-horn foundherentism into a foundationalist mould. How Tramel could have read E&I Chapter One and come away with the ludicrously false impression that "Haack's characterization of foundationalism is idiosyncratic in its inattention to the regress problem (of justification)" (Tramel, 220) defies polite explanation. A more interesting and deeper issue here concerns the point and purpose of epistemology: to help us understand our knowledge of

the world, not to solve glorified brain teasers about what or whether we would know in such and such outlandish circumstances. Tramel's egregious errors are symptomatic of the fact that (to adapt Wittgenstein) foundationalist epistemologists are unable to free themselves from "the picture that holds them captive" (PI §115)

44. See E&I 103-111.
45. "Weakly" coherentist, because, a mere four years after publishing "A Coherence Theory," Davidson granted that what he had proposed wasn't a coherence theory in any substantial sense after all (1987, 155). The thesis that matters to him, he explains, is that only beliefs can justify beliefs. Davidson's preferred contrast is not that between coherentism and foundationalism, but "between theories which are purely doxastic and theories which are not" (E&I 111).
46. 1979a and 1979b
47. Williams 2016, quoted in *The Stanford Encyclopedia of Philosophy*, entry on "Reliabilist Epistemology."
48. "I am inclined to ... think of 'justification' as in effect the epistemologists' portmanteau word for what in ordinary parlance would most often be expressed in the less technical vocabulary of strong or flimsy reasons, a weak or overwhelming case,, good or tenuous evidence etc." (E&I 118).
49. In 1979, in "What Is Justified Belief?"
50. *Epistemology and Cognition* (E&C).
51. See E&C, Chapter One.
52. This example, owing to Bonjour 1980, and much discussed by Goldman and Bob Beddor in their survey article on reliabilism in the *Stanford Encyclopedia*, goes like this: suppose that as a matter of fact someone has, unbeknownst to him, recently acquired reliable clairvoyant powers, but has no reason to believe that this has happened; beliefs to which he is provoked by these powers will, implausibly, count as justified by reliabilist standards.
53. In "Strong and Weak Justification."
54. This phrase is from Mill's *Logic*.
55. As Quine already does in the seductive sentence from the end of "Two Dogmas," quoted above, about each of us "warping his scientific heritage to fit his ongoing sensory promptings": if we interpret the "scientific" in "scientific heritage" narrowly, this points in the direction of an epistemology of *scientific* knowledge specifically; if we interpret it broadly it points to the subject matter of E&I, the epistemology of empirical knowledge generally.
56. Strictly I should say "would-be" competitors, since the very possibility of truly deviant logics is under dispute.
57. Cf. Quine on "the epistemologist [as] confronting a challenge to natural science[!] that arises from within natural science. ... [I]f our science were true, how could we know it?" (1973, 3).
58. For a thorough reckoning with the perils and pitfalls of scientism, see *Science and its Discontents*.
59. Cited in endnote 14 above.
60. Especially in *Scientism and Its Discontents*.
61. I.e. animated by the true spirit of science, or the spirit of true science, as opposed to the false idol of (as Haack will come to call them) the "Old Deferentialists" or the lurid caricature of the New Cynics.
62. See, for example, 2016a, discussed by Jaime Nubiola below; and, for a truly inspired piece of philosophical criticism by means of *ipsissima verba*, see "'We Pragmatists ...': Peirce and Rorty in Conversation."
63. And thereby incurring the risk of the singularly sterile wrangling over how to cope with Edmund Gettier's counter examples to the definition of knowledge as justified true belief. On this subject see "Know is Just a Four Letter Word," published in E&I's second edition (301-330), but written in 1983.
64. See especially *Defending Science*, Chapter Three "Clues to the Puzzle of Scientific Evidence."
65. Summarizing the argument of "The Justification of Deduction."
66. *A Lady of Distinctions*, 56.
67. Or perhaps more than fifty years, since, as noted above, it was Haack's attentiveness to figurative language that allowed her to spot the fatal flaws in Fred Sommers' quest for a formal criterion of ambiguity. Readers may be interested to know that "Surprising Noises:" began as a bravura set of Chairman's remarks at an Aristotelian Society-Mind Association Joint session. Such remarks have been deemed worthy of publication only a handful of times over the more than a hundred years of these meetings.

68. Haack had begun working on this task in E&I, and made further progress in 2010 and in *Scientism and Its Discontents*, Lecture Two.
69. Probably it would be a good thing if some of the more unfortunate sub-niches of AEU (Analytic Epistemology Union, Haack's term) epistemology ground to a halt; "Gettieriology" to take a flagrant example. Sadly, as Haack has had occasion to lament of late (for example in 2016b), business in this sector seems to be growing apace, new sub-niches arising as older ones fall out of fashion.
70. Jane Heal's 1987-88.
71. Francis Bacon, *The New Organon*, Aphorism LXXXVIII.
72. "Puzzling Out Science."
73. A term coined by Jacques Barzun (in 1968!) to describe the state of affairs in which "valuing knowledge, we preposterize the idea [put the last first and the first last] and say ... everybody shall produce written research in order to live, and it shall be deemed a knowledge explosion" (221).
74. This image (and the quoted words), taken from George Eliot's motto to chapter 11 of *Felix Holt* (it is quoted in full at the end of "Preposterism"), could serve as a cautionary slogan for Rorty's world-weary frustrations with the problems of philosophy.
75. For example, in the subtitle of "Realisms and Their Rivals"; Recovering Our Innocence.
76. The excellent phrase is owed to Anthony Gottlieb.
77. For a time, Haack "toyed with the idea" of beginning *Defending Science* with the words: "There's no such thing as scientific method, and this is a book about it" (10).
78. Haack concludes her discussion of Goodman's New Riddle with the same sentiment, expressed in these same words.

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Susan Haack's Pragmatism as a Multi-faceted Philosophy

JAIME NUBIOLA

Web: <http://www.unav.es/users/jnub.html>

INTRODUCTION

I remember my first personal encounter with Susan Haack very well, in Cerisy-la-Salle, France, on the occasion of the colloquium *Cents ans de philosophie américaine* in the final days of the month of June 1995 (Cometti and Tiercelin 2003). In addition to Haack, a goodly number of other philosophical luminaries of the American scene were in attendance; for example, Ruth Barcan Marcus, Stanley Cavell, Ruth Anna and Hilary Putnam, Richard Rorty and others. It was really a fascinating event for a young and foreign scholar like me trying to take my first steps into the field of American philosophy, particularly starting the study of Charles S. Peirce and pragmatism.

Although, when I met her I was already familiar with some papers by Haack and with her book *Evidence and Inquiry*—which I had reviewed for the journal *Anuario Filosófico* (Nubiola 1994)—experiencing her engaging personality and strong intelligence made a deep impression on me. Since that encounter in France, Susan Haack and I have had many long conversations that have been very inspiring for me, because she always thinks with exquisite penetration and subtlety, and always says with great clarity what she thinks. In all those kind talks I have been always pleased to perceive an extraordinary intellectual affinity with her. For this reason I am delighted to take part in this volume in her honor, dealing particularly in with her critique of Richard Rorty's reading of the history of 20th century philosophy.

At the end of her paper “Pining Away in the Midst of Plenty”, the Irony of Rorty's “Either/Or Philosophy” (Haack 2016a), a response to a lecture of Rorty's entitled “Universalist Grandeur and Analytic Philosophy”, Haack acknowledges:

As I read Rorty's lecture, I was put irresistibly in mind of Peirce's description of how unclear ideas act “like an obstruction of inert matter in an artery, ..., condemning [the] victim to pine away in the fullness of his intellectual vigor and in the midst of intellectual plenty” (80, *CP* 5.393, 1878).¹

The lecture of Rorty's that caused this reaction in Haack's mind—captured in a phrase from Peirce's “How to Make Our Ideas Clear”—was part of the Page-Barbour lectures that Rorty gave at the University of Virginia in October of 2004. Then still unpublished², this text was chosen by the editors of *The Hedgehog Review* as the centerpiece of a symposium on “The Business of Philosophy”. They offered Rorty's lecture—“along with the responses of three contem-

porary philosophers [Susan Haack, Matthew B. Crawford, and Robert B. Pippin] who, for different reasons, take issue with Rorty's position"—"in the spirit of the ancient symposium".

In order to make sense of Haack's critique of Rorty's reading of the history of 20th century philosophy, focussing on the texts I have mentioned, I have divided my contribution into four sections: 1) Rorty and Peirce: How Rorty discovers and abandons Peirce; 2) Haack and Peirce: How Haack discovers Peirce and learns from him; 3) Rorty and Haack: The two pragmatisms; 4) Haack's pragmatism as a multi-faceted philosophy.

I. RORTY AND PEIRCE

I met Rorty for first time in the Cerisy-la-Salle colloquium just mentioned. I was impressed by his calm style and educated approach. I remember in particular an evening in which, with Jim Conant as moderator, Hilary Putnam and Richard Rorty debated their differences and similarities for about two hours, taking questions from the audience as well. I do not remember if I made a contribution, but I do remember the fascination of that night, the experience of seeing that philosophy was not something that was simply taught, but in that old sense something that was really *done*.

A few days later I went to Stanford as a visiting scholar at the Center for the Study of Language and Information, where I spent the whole summer writing a book on the methodology of research in philosophy. One day, in early August, I went at 2 p.m. to the impressive Green Library, which houses about 3 million books in the humanities and social sciences. The heat outdoors was relentless; though the Library was very comfortable thanks to the air conditioning, on the day in question, it was deserted. While looking for a book I came face to face with Rorty, who was also filling his suitcase with books. We greeted each other politely and he invited me to visit him at his Visiting Professor home on campus. We arranged the meeting by phone and he received me a few days later.

We spent about an hour talking about his habits as a writer and his more general ideas about research in philosophy. At some point I told him that I was studying Peirce, and with great simplicity and frankness he replied that he believed he had wasted two years of his life studying Peirce and that he gave up his attempt when he read Murray Murphey's book *The Development of Peirce's Philosophy* (1961), who came to say—according to Rorty—that Peirce was a failure and that in any case it was not possible to give a reasonable and coherent sense to his texts. I told him that in a recent second edition Murphey had tried to rectify that impression and in fact I sent him a few days later a photocopy of the "Preface" of 1993 in which Murphey wrote (1993, p. vi):

I have discovered, to my great surprise, that some readers of this volume have understood me as saying that Peirce was a failure as a philosopher. I do not know what has led to this misinterpretation, but I should like to take this opportunity to correct it. Charles Peirce was in my judgment the greatest American philosopher; his only rival is Jonathan Edwards. He was, I think, a philosopher of the first rank—the equal if not the superior of any other thinker of the nineteenth century. As a logician, he stands with Frege as one of the two giants of that era, but in philosophy generally he was the peer of any thinker in England or Europe. Let honor be given to whom honor is due.

Shortly after this, I found out that Rorty had written something similar in "The Pragmatist's Progress", his collaboration in the book by Umberto Eco, *Interpretation and Overinterpretation*. In his contribution, Rorty explained that he and Eco had both had to overcome their earlier ambitions as code-crackers, trying to make sense of Peirce's arcane texts. Rorty adds (1992, pp. 92-93):

This ambition [of deciphering Peirce] led me to waste my twenty-seventh and twenty-eighth years trying to discover the secret of Charles Sanders Peirce's esoteric doctrine of 'the reality of Thirdness' and thus of his fantastically elaborate semiotico-metaphysical 'System'. I imagined that a

similar urge must have led the young Eco to the study of that infuriating philosopher, and that a similar reaction must have enabled him to see Peirce as just one more whacked-out triadomaniac. In short, by using this narrative as a grid, I was able to think of Eco as a fellow-pragmatist.

Let me observe, by the way, that in the final lines of her text Haack considers it truly ironic that Rorty, who dismissed Peirce as a “whacked-out triadomaniac” (Rorty 1992, p. 93) whose “contribution to pragmatism was merely to have given it a name” (Rorty 1982, p. 161), “succumbed to exactly the sad fate that Peirce so vividly described” in the quotation taken from “How to Make Our Ideas Clear”: “pinning away in the fullness of his intellectual vigor and in the midst of intellectual plenty”³.

In spite of the just and common accusation that Rorty gives us an inaccurate history of philosophy, what I want to add here is that, after his two years “wasted” in trying to make sense of Peirce’s texts, he was the first to point out similarities between Wittgenstein’s *Philosophical Investigations* (1953) and the philosophical framework of Peirce. The view put forward by Rorty in his paper “Pragmatism, Categories, and Language” of 1961 was that Peirce had envisaged and repudiated positivist empiricism fifty years earlier than Wittgenstein, and had developed a set of insights and a philosophical mood very similar to those of contemporary philosophers working under the influence of the later Wittgenstein. That affinity between Peirce’s philosophy and recent tendencies born of the rejection of the *Tractatus* and the positivism of the Vienna Circle, suggested that a closer study of views and themes common to Peircean pragmatism and the writings of the later Wittgenstein would improve our understanding of both philosophers’ work (Rorty 1961; Nubiola 1996). As we now know, scholarship has widely confirmed this fascinating approach (Fabbri-chesi 2014; Boncompagni 2016).

In fact, Rorty in his presentation of pragmatism for the *Routledge Encyclopedia of Philosophy* (1998, p. 633) identifies Peirce as a “brilliant, cryptic and prolific polymath, whose writings are very difficult to piece together into a coherent system”. Perhaps it is useful to say here that the old image of Peirce as a contradictory thinker (Goudge 1950), favored perhaps by the thematic presentation of his works in the *Collected Papers* has now changed completely. In more recent decades a deeper understanding of the architectonic nature of his thought and its evolution over his lifetime has gained general acceptance (Hausman 1993; Parker 1998). In the last decade all Peirce scholars have clearly acknowledged the basic coherence and undeniable systematic unity of his thought as the Charles S. Peirce International Centennial Congress, held in Lowell in 2014, clearly testified.

III. HAACK AND PEIRCE

Susan Haack has in various interviews narrated her intellectual training in Oxford (1963-68) with many of the most distinguished representatives of the analytical tradition (Gilbert Ryle, Michael Dummett, Philippa Foot, David Pears) and Cambridge (1968-71), where she received a powerful intellectual stimulus from Elizabeth Anscombe. In 1971 she moved to the recently founded University of Warwick, where she taught for twenty years until moving to the University of Miami in 1990. During these years, she became notably interested in the naturalized epistemology of Quine—which by the late 1980s she would eschew for its profusion of ambiguities—and discovered the pragmatist tradition:

In the early 1970s I began to read classical pragmatist philosophers—Charles S. Peirce, later William James, John Dewey, George Herbert Mead and, more recently, Oliver Wendell Holmes, Jr.—; and it is from this rich and varied tradition that I have learned more and is what clearly and widely influence my work: for example, in my long-standing efforts to expose the falsity of philosophical dichotomies and my emphasis on continuities or, in Peirce’s terminology, in “synechism”; in the modest naturalism of my epistemology; or in my interest on the growth of the meaning and the limits of formalism, etc. (Haack 2013, p. 574)

Perhaps it is illuminating to quote from another interview of 2014 (p. 82) where Haack explains with extremely beautiful words her relation with Peirce:

Anyway, ever since those first weeks of reading, I have thought of Peirce as a philosophical companion—someone whose wisdom I often consult, whose writings never fail to instruct, illuminate, and inspire, whose ideas I often borrow and adapt—even though, as should go without saying, from time to time we disagree.

And in another previous interview, she gave more details (Haack 2007, pp. 22-23):

My interest in pragmatism began, as I recall, when, after reading the critique of Peirce's account of truth in the first chapter of Quine's *Word and Object*, I began seriously reading in Peirce's *Collected Papers*, and was soon hooked by the work of this quite remarkable philosophical mind! Peirce himself, I might add—besides being a formal logician of broad scope and deep penetration—was always much concerned with philosophical questions about logic, and (though he didn't like or use the term "epistemology") with what he and the other pragmatists called "theory of inquiry."

In fact, Haack's critique of Quine's naturalized epistemology can be considered an instigation for *Evidence and Inquiry* (1993), where she defends her own epistemology ("foundherentism") in detail against foundationalism and coherentism, articulating a more modest epistemological naturalism than Quine's, and rejects the "vulgar" pragmatisms of Stich and Rorty. In the second expanded edition of the book sixteen years later (2009), Haack slightly modified the subtitle: where before we had *Towards Reconstruction in Epistemology*, she now more specifically promises *A Pragmatist Reconstruction of Epistemology*. In this way, Haack's epistemological proposal is inserted explicitly in the pragmatist tradition, particularly as a heir of Peirce's synechism—the permanent search for continuities—and of Dewey's rejection of untenable dualisms.

The Foreword to this second edition deserves careful reading, because it brings into relief the continuation of Haack's discussions with those who were her interlocutors—or perhaps better, her opponents—in the first edition. In this Foreword from 2009, Haack recounts the evolution of her thought in some points and connects the approach to epistemology she adopted in *Evidence and Inquiry* to her treatment of issues work she would tackle in later work. I cannot resist quoting a few lines of a paragraph in the final section of the Foreword where this is explained, since it seems to me that is essential to understand Haack's reply to Rorty's lecture of 2004 (Haack 2009, pp. 26-27):

When the first edition of *Evidence and Inquiry* appeared, [Stan] Thayer told me I reminded him of Dewey [...]. A decade later, rounding out his book on the history of pragmatism with chapters on Rorty and myself, Cornelis de Waal observed that "some call [Haack] the intellectual granddaughter of Peirce, ... an apt description." [...] I now see, much more clearly than I did in 1993, that *Evidence and Inquiry* is through and through an expression of synechism, Peirce's principle that, rather than "doing philosophy with an axe," we should look for continuities; and of course, of Dewey's repudiation of untenable dualisms. That's why I have given this second edition its modified subtitle, *A Pragmatist Reconstruction of Epistemology*.

I think it is important to highlight the fact that Susan Haack mentions in the interview with Chen Bo that as she was reading Peirce she gradually discovered that her own general conception of philosophy had a marked pragmatist character. Let's quote again (Haack 2007, p. 28):

I began my readings in pragmatism with Peirce—an astonishingly wide-ranging, profound and original philosophical thinker. And I have been much influenced by him: by his articulation and

defense of the ideal of genuine inquiry; by his distinction (derived from Scotus) between the existent and the real, and his defense of the reality of generals; and perhaps especially by his “syn-echism,” the “doctrine of continuity.” This idea has of late come to seem to me extraordinarily fertile, as I have explored the continuities not only of scientific inquiry with empirical inquiry generally, but also of social-scientific with natural-scientific inquiry, of philosophy with science, and of inquiry with other human intellectual activities.

This passage deserves full attention, as in it Haack not only sheds light on her intellectual development, but at the same time puts forward the core of her discrepancy with Rorty’s account of the situation of philosophy in America, as presented in «Universalist Grandeur and Analytic Philosophy» and in several other places. While Rorty criticizes analytic philosophers because their problems are irrelevant to society, the analytic philosopher Susan Haack credits her reading of Peirce (and other pragmatist philosophers) as a spur to widening her vision, overcoming the poverty of philosophy understood only as conceptual analysis, and turning her attention to *genuine inquiry*. In his lecture Rorty says that “such problems, preserved in amber as textbook “problems of philosophy,” still capture the imagination of bright students. But no one would claim that discussion of them is central to intellectual life.” When, Rorty adds, contemporary philosophers insist that their problems “are ‘fundamental’ or ‘perennial,’ nobody takes their claim seriously.” In sharp contrast, Haack declares (2016a, p. 78): “Here, I’m with Peirce. Like the sciences, philosophy is at its core a form of inquiry; and, like the sciences, it seeks to discover truths about the world, and so is not purely a priori, but needs *both* reasoning *and* experience.”

IV. RORTY AND HAACK: THE TWO PRAGMATISMS

A close study of these two papers from the *Hedgehog* Symposium makes clear the deep difference between Rorty and Haack about the role of philosophy. Where Rorty finds unsurmountable dualisms, Haack looks for continuities (2016a, p. 77):

First, I’ll urge that we are not obliged to choose, as Rorty seems to assume, *either* clarity *or else* relevance, *either* truth-seeking, explanation *or else* ‘redescription,’ aspiration, meliorism, *either* science *or else* poetry, *either* nature *or else* culture; but that we can, and should, seek a philosophy that has room for all of these.

By contrast to this, Rorty’s claim is that traditional philosophy understood as truth seeking should be abandoned; that philosophy should be understood as a form of literature, as poetry (and that is precisely the title *Philosophy as Poetry* under which the Page-Barbour lectures were finally published in 2016). In fact, Rorty properly acknowledges that his position takes direct aim at philosophy at least as it has been traditionally understood (2016a, p. 73):

I hope I have made clear that this is not a battle about alternative solutions to common problems. It is about whether the traditional problems of modern philosophy are to be taken seriously or set aside. As the battle has worn on, it has come to look more and more like a disagreement about what sort of thing philosophers should take themselves to be doing, about the self-image of the discipline.

When Rorty claims to set aside the problems of modern philosophy, and to do so in the name of a supposed (*neo*)pragmatist tradition of a Deweyan stripe, he is deeply misleading. On this point, it is useful to follow Haack, and also Migotti, in distinguishing from the beginnings of pragmatism two radically different stripes of it, which perhaps explain its so diverse manifestations: reformist pragmatism and revolutionary pragmatism (Haack 1992, pp. 351-2; Haack 1996; Migotti 1988). Reformist pragmatism recognizes the

legitimacy of the traditional questions linked to the truth of our cognitive practices and tries to reconstruct philosophy. Revolutionary pragmatism abandons the notions of objectivity and truth and rejects philosophy as a kind of search for it; Rortian revolutionary pragmatism aims simply to continue the conversation of humanity.

This is not the place to carry out a minute study of Rorty's views ("the shifting kaleidoscope of Rorty's writing", Haack 2006, p. 53). Nevertheless, what has been said already is sufficient to indicate that a rejection of the search for truth under the accusation that it is only a scientific dogmatic dream, and the simultaneous appeal to John Dewey in support of this, is a total distortion of the classical pragmatist tradition. So it is not at all unwise to follow Haack in describing Rorty's pragmatism as "vulgar" (Haack 1993, chapter 9). The post-philosophical literary pragmatism which Rorty supports, aspires only to "keep the conversation going"; and declares that 'true' means nothing more than "what you can defend against all comers", and 'rationality' nothing more than "respect for the opinions of those around [you]". If we take seriously the more radical pronouncements of Rorty—I am paraphrasing Haack—his position is that sciences do not offer objective truths about the world. "Science as the source of 'truth', Rorty wrote (1982, p. 34), is one of the Cartesian notions which vanish when the ideal of 'philosophy as strict science' vanishes". What scientists do is simply to present incommensurable theories and this is their conversation, in the same way as literary conversation is developed by successive literary products and genres. As Haack writes, "given his attitude to science, it is not surprising either that Rorty disapproves of the aspiration to make philosophy more scientific and looks, instead, to an alliance with literature" (2006, p. 53).

As I have already noted, Haack's first goal in replying to Rorty was to urge us to reject a forced choice between clarity *or* relevance, science *or* poetry, and so on, but to encourage to "seek a philosophy that has room for all of these" (Haack 2016a, p. 76). The very apt English expression "to have room" brings to memory the metaphor of the hotel corridor developed by Giovanni Papini and quoted by Haack in several places (2006, p. 384). Let us recall the metaphor in William James' words (1906, p. 339):

Pragmatism, according to Papini, is thus only a collection of attitudes and methods, and its chief characteristic is its armed neutrality in the midst of doctrines. It is like a corridor in a hotel, from which a hundred doors open into a hundred chambers. In one you may see a man on his knees praying to regain his faith; in another a desk at which sits some one eager to destroy all metaphysics; in a third a laboratory with an investigator looking for new footholds by which to advance upon the future. But the corridor belongs to all, and all must pass there. Pragmatism, in short, is a great *corridor-theory*.

The second aspiration of Haack's reply to Rorty, then, is to show that Charles S. Peirce, William James, John Dewey, and George Mead—"the remarkable thinkers of the pragmatist tradition that Rorty so often, but so misleadingly, invoked—had pointed the way to just such a rich philosophy of, not Either/Or, but Both/And" (Haack 2016a, p. 76). While Rorty is claiming for a dissolution of philosophy into literature, or perhaps into silence, since

[...] human beings do not have a nature to be understood, but rather a history to be reinterpreted. They do not have a place in a universal scheme of things, nor a special relation to the ruling powers of the universe. But they are capable of increasingly rich and imaginative self-descriptions. They are finite creatures whose latest self-descriptions have shown an increasing willingness to accept that finitude (Rorty 2006, p. 75).

Haack is bravely defending a kind of renovation of philosophy, a renewed way of doing it seriously, based in the pragmatist tradition, open to contemporary science and to all the human anxieties of our times: "The ideal, again, is a philosophy that help us *both* to understand the world and our place in it, *and*

to redescribe it in ways that help us conceive how we might change if for the better.” (Haack 2016a, p. 77). Nothing could be more opposed to the abandonment of philosophy advocated by Rorty.

V. HAACK’S PRAGMATISM AS A MULTI-FACETED PHILOSOPHY

As it is well-known the analogy of the crossword puzzle in Haack’s *Evidence and Inquiry* is essential to her presentation of a clear and fruitful image of human reasonableness, and her explanation of the role of experiential evidence and the mutual support of the beliefs. On the same vein it seems to me that the best way to understand the fullest significance of Haack’s pragmatism is to realize that it is a powerful multi-faceted philosophy based in the notion of *human inquiry*; and for this reason in her way of doing philosophy there is room not only for science, but also for literature, and all the human intellectual activities. Let’s quote from the penultimate paragraph of Haack’s essay (2016a, p. 79):

Those of us who aspire, as I do, to a multi-faceted philosophy of Both/And want something more than the gnomic late-Heideggerian “poetry” or the hyper-intricate late-Wittgensteinian approach to language that Rorty professes to admire. We won’t confine to ourselves to the realm of discourse-and-social-practice, or content ourselves with the idea that there is nothing more to a belief’s being justified than its conforming to the epistemic practices of our culture. We will hope, rather, for an epistemology that can articulate the differences between genuine inquiry and the sham and the fake, and between stronger evidence and weaker; an epistemology that is informed both by psychologists’ and neuroscientist’ discoveries and by novelists’ imaginative explorations of hypocrisy, self-deception, and pseudo-inquiry; an epistemology that usefully engages with the evidentiary puzzles and dilemmas encountered in the legal system, and with questions about how to organize universities so as to make them more hospitable to serious intellectual work.

This long quotation from Susan Haack enables the reader to admire her powerful writing and the intellectual finesse that always characterizes her texts. At the same time, the informed reader realizes the freshness, originality and novelty of this way of thinking, which—at the same time—is inscribed in the richest intellectual tradition of Western culture: as William James put in the subtitle of his *Pragmatism* of 1907, it is “A new name for some old ways of thinking”. This way of understanding the task of philosophy and of doing it might be called—using own Haack’s expression—a *multi-faceted philosophy*, a philosophy that acknowledges that we human beings live in a various and multi-layered world, and that the different sciences and intellectual human activities are different ways to deal with the same reality presenting us different *facets* of it: “There is *both* natural *and* social reality” (Haack 2016a, p. 78).

I once liked to identify this general approach—which I also endorse—as ‘epistemological pluralism’, but this designation may be misleading, since it can sound as skeptical relativism. But to affirm that reality has different “faces”, and that we do not exhaust it when we know just one (or two or three ...) of them, is not at all skeptical. To affirm that we do know aspects (*facets*) of reality does not imply a renunciation of truth or its subordination to a culturalist perspectivism. Quite the reverse, pluralism not only strives to affirm that there are different ways to think about things but additionally—to use an expression of Stanley Cavell (quoted in Putnam 1990, p. 19)—that there are *better and worse ways of thinking* about problems, and that we can recognize the superiority of one way over other thanks to experience and rational dialogue. Theories are built, like other artifacts, but this does not mean that they are arbitrary or that they cannot be better or worse. The fact that all our theories are human creations means that they should be capable of replacement, correction and improvement according to our discovery of better or more refined versions, just as we make advances in our crossword puzzles as we fill in more entries, better corroborated with one another.

Analytic philosophy—now “intellectually close to exhaustion” (Haack 2016a, p. 77)—repressed during decades its differences with science, in order to present itself as an extension of science, or as an explanation of scientific knowledge. Analytic philosophy was also a *piecemeal* philosophy, a fragmentary approach to the issues concerned. By contrast, Susan Haack, wisely invoking the pragmatist tradition (it has “shown us the way to just such a rich philosophy” (Haack 2016a, p. 77), enhances the continuity of the inquiry between sciences, humanities and ordinary life. In this sense, I like to say that the role of philosophy in the 21st century depends on the effort made by the philosophers to unite in one single field of intellectual activity, both the logical rigor and human relevance, which during decades have been the differential features of two opposing ways to conceive philosophy: “It is perfectly possible to satisfy the demands of clarity and relevance together” (Haack 2016a, p. 77).

I want like to add in a loud voice that Susan Haack has been a wonderful leader in this ongoing process of reintegrating philosophy. Although she feels herself as a member of a resistant minority swimming against the tide, it is not unlikely to expect that the tide will reverse and a lot of young and new philosophers will follow her way:

There surely *are* [...] philosophers who follow a problem where it leads, even if that takes them across into another area, or outside philosophy altogether; and some knowledgeable and modest enough to learn from philosophers of the past. I believe I can claim to be among them. But we in the philosophical resistance are distinctly a minority; and [...] we are swimming against the tide. (Haack 2016b, p. 14)

Moreover, I would like to stress that this distinctive multi-faceted philosophy that Susan Haack defends and personally exemplifies is a kind of *empirical inquiry*. While modern philosophy was understood as an entirely *a priori* enterprise, Haack with C. S. Peirce and the main pragmatist tradition understand philosophy as an empirical enquiry. Let’s quote her once again:

[...] (again like Peirce) though I see philosophy as like the special sciences in being a kind of empirical inquiry, I believe it is unlike them in the kinds of experience it requires. Philosophy needs no fancy instruments, sophisticated experiments [...] What philosophy needs is *keen attention to familiar facts*: such as in my recent work, the fact that, in the small corner of the world in which we humans live, there are not only rocks, mountains, rivers, trees, insects, animals, etc., and the physical particles of which they are composed, but also a host of human creations, physical and mental, intellectual and imaginative; that we can learn from history and from novels, as well from psychological experiments about what makes human beings tick; that we can sometimes successfully predict how this animal, or that stuff, will behave; etc., etc. (Haack 2016c)⁴

Simply, this list of some of the interests of Susan Haack in her recent work shows clearly the openness of her philosophical mind, carrying on the best pragmatist tradition and interested in a multi-layered world. Not only is Susan Haack an outstanding multi-faceted philosopher, but Peirce has also been considered a multi-faceted philosopher (Shook 1998, p. xv) and Haack ascribes to Oliver Wendell Holmes a “multi-faceted legal thinking” (Haack 2019, p. 169). This label of *multifacetism* might be considered almost a derogatory term in the analytic tradition of boring overspecialization, but it seems to me that it is the right mark of philosophy when it is well done. Like scientific work, doing philosophy “is complex, intricate, multi-faceted—yes!—like working on a vast crossword puzzle” (Haack 2003, p. 106).

VI. CONCLUSION

Reading the essays of Richard Rorty and Susan Haack in the “Symposium: On the Business of Philosophy” (*The Hedgehog Review* 2006) is a philosophical experience in itself and makes honor to the subtitle of the journal: *Critical Reflections on Contemporary Culture*. Both texts are beautifully written, but—as Haack writes—Rorty’s lecture leaves the expert reader “with that old, familiar, dizzy feeling, an eerie sense of *déjà lu*” (2016a, 76). As a counterpoint, Haack presents something “that wouldn’t be equally familiar” to her readers. She understands Rorty’s reading of the history of 20th century philosophy very well, and tries to keep all what is valuable in it. Instead of choosing between clarity or relevance, explanation or aspiration, science or poetry, she presents a conception of philosophy that has room for *both*, and she does this in the rich stream of the pragmatist tradition of which nowadays Susan Haack is—I am convinced of this—the most prominent representative. Rorty studied Peirce in his youth and abandoned him as a waste of time; Haack discovered Peirce when she was already a professional philosopher in the analytic tradition. Peirce’s architectonic philosophy has been an illustrious inspiration for Susan Haack’s multi-faceted pragmatist philosophy.

NOTES

1. The *Collected Papers of Charles Sanders Peirce* are identified by CP followed by the number of volume and paragraph, indicating also, when available, the year of publication.
2. The three Page-Barbour lectures were finally published by The University of Virginia Press under the title *Philosophy as Poetry* (Rorty 2016b).
3. Hence, of course, the title of Haack’s piece.
4. Haack writes something very similar in 2016a, p. 78.
5. I am extremely grateful to Mark Migotti and Leslie Marsh for inviting me to take part in this special issue honoring Susan Haack in her 75th anniversary. My debt of gratitude towards professor Haack is immense not only from an intellectual point of view, but also from a personal one. Thanks also to Mark Migotti for his corrections and suggestions in the final text.

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Metaphysics, Religion,
and Death¹
or
We'll Always Have Paris²

ROSA MARIA MAYORGA

Chair, Department of Arts and Philosophy
Miami Dade College

Verily, metaphysics is the Paris of the intellect
(Nation v.3.181)³

When good Americans die, they go to Paris
—Oscar Wilde⁴

Death and corruption are mere accidents or secondary phenomena. (CP 6.558)

Mostly dead is slightly alive. (*The Princess Bride*)

Two people have had a profound influence in my philosophical career—one, long dead before I came to know of him, and the other, very much alive, who not only introduced me to his thought, but has been throughout many years a source of encouragement and inspiration. The first is Charles Sanders Peirce and the second, Susan Haack.

I was a graduate student at the University of Miami in 1991 when I took my first course, PHI 591 Metaphysics, with the then-newly arrived British philosopher Susan Haack. It became immediately obvious that Dr. Haack was not just an accomplished scholar, but also a consummate educator, a rather uncommon combination in academia. It was during this semester that I first made Charles Peirce's acquaintance—it was Dr. Haack's pointing to Peirce's remark that metaphysics is "the Paris of the intellect," a place for exciting but perilous adventures—which piqued my interest immediately, and consequently decided my academic fate.⁵

Reading Peirce has had a similar contagious effect on many scholars (too numerous to mention),⁶ as is also the case with Haack,⁷ whose work in logic, epistemology, philosophy of science, philosophy of mind, philosophy of law, etc., etc., throughout her career has been influenced by Peirce's thought. In her work, Haack generally agrees with Peirce's perspective, using it as inspiration in the development of her own views. We see this in Haack's identifying various of her philosophical positions in Peircean terms: "Critical Common-sensism;" "Innocent Realism;" "Con-trite Fallibilism;" "(Classical) Pragmatism;" and especially for the purposes of this paper, her realization in mid-career that she had been a "synechist" all along. I want to focus in particular on Haack's discussion of metaphysics, specifically insofar as it bears on the relationship between science and religion, and as juxtaposed with Peirce's religious views especially as found in his paper "Immortality in the Light of Synechism."

METAPHYSICS

Because of its highly speculative nature and disorienting tendencies towards “flights of fancy,” Peirce considered that the study of metaphysics must be undertaken with great care and caution. Currently “a puny, rickety, scrofulous science,” metaphysics’ “deplorably backward condition” in which “almost every proposition is... meaningless rubbish...or downright absurd” was due mostly to the fact, according to Peirce, that its study in the last few centuries had been mostly in the hands of theologians concerned with the promotion of certain interests instead of the search for truth.⁸ This has resulted in the “common opinion that Metaphysics is... intrinsically beyond the reach of human cognition.”⁹ This is a mistaken opinion, as Peirce will argue, for metaphysics “really rests on observations, whether consciously or not.”¹⁰ Only a genuine desire to find out how things truly are, the mark of a true scientist, coupled with the scientific method, that is, the use of experience and reasoning, will yield progress in metaphysics.¹¹ Hence Peirce’s proposal to restore metaphysics, whose “business is to study the most general features of reality and real objects,” to its rightful path by transforming it into a “scientific metaphysics,” subject to genuine scientific inquiry.¹² Unlike the kind of scientific inquiry in the natural sciences that relies on the use of specialized equipment to enhance our experience and aid our reasoning, the true metaphysician only needs to focus on the many features of our everyday experience; a difficult task, since we are so ingrained in its familiarity, we take many of its aspects for granted, making it difficult to observe and analyze this experience “at a distance.” And the reasoning involved will be all three modes as described by Peirce—inductive, deductive, and abductive.

As we know, Peirce made great progress in reforming metaphysics, and as he advanced in developing other areas of his philosophy, he linked them all to each other. His universal categories of firstness, secondness, thirdness; his scholastic realism; his phenomenology; logic of relatives; his normative theory; his evolutionary cosmology and the notions of agapism, tychism, and synechism, as well as his religious beliefs, are all intertwined and provide support to the vast architectonic system he dedicated his life to create.

Haack considers Peirce “a metaphysician of remarkable depth and breadth.”¹³ In attempting to make sense of the “present condition of philosophy...a snarl of often ill-defined ideas of the kind of thing and stuff there are,”¹⁴ she turns to Peirce and echoes his conviction that “[m]etaphysics does, and must, rest on observable phenomena.”¹⁵ If we fail to recognize this, it is because “the observations on which metaphysics depends are so familiar that we ordinarily pay no attention to them.”¹⁶

But Haack does pay attention—she reflects on the world around her. And she practices what she preaches—her writings often include everyday examples from her own observations that illustrate a particularly subtle point—the shy cat that visits her backyard every morning who expects breakfast, but doesn’t really have the *belief* that it will be waiting; her friend’s two-year-old daughter’s amusing category mistake shows the gradual development of conceptualization and human mindedness;¹⁷ her three imaginary childhood friends “Dum,” “Dagwood,” and “Auntie Elsie” who never returned after her mother sent them off on holiday after packing a real suitcase, nicely contrasting the real with the illusory.¹⁸ In “Not Cynicism, But Synechism,” Haack shares the story of how she came to the realization that she was a synechist, and traces in the rest of the paper how Peirce’s “regulative principle of logic, prescribing what sort of hypothesis is fit to be entertained and examined... that tendency of philosophical thought which insists upon the idea of continuity as of prime importance”¹⁹ has influenced her metaphysics, philosophy of science, and philosophy of mind—

The idea, as I understand it, is rather that we should look for underlying continuities, and recognize that supposedly sharp distinctions may be better conceived as lines of demarcation drawn at some point on a continuum.²⁰

One synechistic theme Haack recognizes in her work is the fact that philosophy can be placed on a continuum to which the natural and social sciences also belong. This means that philosophy also addresses ever-evolving questions capable of true or false answers through genuine, good-faith inquiry that involves the method of experience and reasoning.²¹ But she does note—

Peirce says, not that objective idealism, agapism, tychism, logical realism, etc., are implied or required by synechism, but that synechism “carries [these ideas] along” with it; meaning that these hypotheses, being *of the type* that synechism *qua* regulative principle recommends, have the merit of being at least potentially explanatory. But their synechistic character does not guarantee their truth; and they are not the only hypotheses of the desirable, synechistic type.²²

Haack cautions that although she is “a kind of prope-synechist, i.e. a synechist in a broad sense” she does not “endorse all, or only, the synechist hypotheses that Peirce himself proposes.”²³ She finds that when Peirce discusses his synechism, e.g. in “The Logic of Continuity,” the “stunning metaphysical panorama in which the idea of continuity is the organizing principle” linking other areas of his philosophy is

... Peirce the metaphysician at his most philosophically fertile, his most mathematically imaginative, his most scientifically sweeping, and his most cosmologically prescient; but also his most darkly Cimmerian.²⁴

I suspect that the “darkly Cimmerian” reference as well as her cautious endorsement of only some of Peirce’s synechistic pronouncements involve Peirce’s explicit claims in “Immortality in the Light of Synechism,” which she mentions in passing, but does not discuss directly, namely Peirce’s claims that synechism allows “the possibility of a continuity of carnal and spiritual consciousness,” and that it “may play a part in the onement of religion and science.”²⁵ In another paper, “Fallibilism and Faith, Naturalism and the Supernatural, Science and Religion,” she tackles the general issue of science and religion, the topic of the next section.

RELIGION AND SCIENCE ACCORDING TO HAACK

Although Haack does not discuss directly Peirce’s views on religion and science,²⁶ it is obvious that she does not support his synechistic endeavors regarding the “onement of religion and science.” For one, she argues that religion (as well as theology) and science are fundamentally different enterprises—

The goal of scientific inquiry, as of any inquiry, is to find true answers to the questions within its scope... no scientific claim is in principle beyond the possibility of revision should new evidence demand it.²⁷

And religion—

Unlike science, religion is best conceived, not as a kind of inquiry, but as a body of belief, a creed... At the core of a religious creed is the belief that a purposeful spiritual being (or beings) brought the universe into existence, and gave human beings a very special place; and that this spiritual being is concerned about how we behave and what we believe, and can be influenced by our prayers and rituals. Moreover, religious belief is supposed to be, not tentative or hedged, but a profound commitment.²⁸

And theology—

... unlike religion, sets out to be a form of inquiry. But unlike scientific inquiry, theological inquiry welcomes, indeed seeks, supernatural explanations, in terms of God’s making things so... [it] calls on evidential resources beyond reasoning and the senses: religious experience and revelation. So... there are significant *discontinuities* between scientific and such everyday [and scientific] inquiries.²⁹

Although Haack eschews supernatural entities and explanations for this, our real (natural) world, she is careful not to endorse any kind of scientism, characterized as “an excessively deferential attitude—a too uncritically uncritical stance—to the sciences” and which “in her mouth...is pejorative.”³⁰ As a self-declared Innocent Realist, she supports Peirce’s Extreme Scholastic Realism in the claim that all that is existent is real, but not all that is real is existent; that is, that laws, minds, concepts, as well as material objects, are real³¹—in her words, “it’s all physical, all right, but it isn’t all physics—”³²

... there is more than just physical stuff, things, events, phenomena, properties, kinds, and laws. There are, besides, all our mental states and processes—our beliefs, fears, hopes, wishes, dreams, ideas, thoughts, associations, inferences, etc.; all the social institutions we humans have brought into being—from languages and other sign-systems to kin structures...³³

In *Defending Science* and “Brave New World,” Haack elaborates her naturalistic, yet “non-scientistic” (non-reductionist) alternative to religious or theological answers to significant metaphysical questions by denying “inherently inexplicable and mysterious...mental stuff” but which poses and explains human “mindedness”—

I don’t think there’s mental stuff—no Cartesian minds, no souls, no spooks, no spiritual realm—only physical stuff; and yet, I think we humans really are (to borrow a word from George Herbert Mead) “minded” in a way no other creatures are, and that this in turn has enabled us to change the world by creating the vast array of social institutions and artifacts.³⁴

Beliefs, ideas, inferences, etc. come into being, Haack argues, because the “human imagination, intellect, design, plans, choices, actions, etc.”³⁵ bring them into being, and hence are real. Mindedness consists in “a distinctive combination of characteristics that we humans have in significantly greater degree” and in a fuller sense than other animals, namely, self-awareness, tool use, capacity for communication.³⁶ A combination of evolutionary and social-historical theories do the work of explaining how social interactions are the means by which we gradually acquire language and are also what make us capable of “forming the complex, interwoven, and explicitly expressible beliefs, hopes, fears, wishes, etc., that are a distinctive feature of human mentality”³⁷ in the brain. This process is visible in a singular fashion by observing the gradual process of language acquisition in infants and children.

So when comparing religious versus scientific answers to metaphysical questions, although religion “is no less quintessentially human an enterprise than science,” but because its fundamental appeal is to the human aspect that “craves certainty, likes to be elevated by mysteries, dislikes disagreeable truths, and clings to the idea that we are... the chosen creatures,”³⁸ science, Haack believes, “really is, on all those dimensions, far and away the more admirable enterprise.”

How do Peirce’s views on religion and science compare to Haack’s?

RELIGION AND SCIENCE ACCORDING TO PEIRCE

Peirce was certainly aware, both theoretically and personally, of tensions between religion and science. He came from a family with a strong religious background and lived during the severe religious crisis caused by the 1859 publication of Charles Darwin’s *Origin of Species*, which questioned the view that humans were created intentionally as special beings by God and chosen to have dominion over all other creatures.³⁹

As a man of science, Peirce could not ignore the force of Darwin’s theory of evolution which linked humans in a continuous chain with other species and the rest of nature. Indeed, both Peirce’s notion of tychism, of objective chance in the world, as well as synechism, the notion of continuity, have strong connections to Darwin’s principle of fortuitous variation. At the same time, as a man of science, his conviction that metaphysics needed to adopt the scientific attitude of a genuine desire to search for truth never wavered. Indeed, he blames theologians (at least recent ones) for the sorry state of present-day metaphysics—

In my opinion the chief cause of its backward condition is that its leading professors have been theologians... since theology pretends to be a science, they must also be judged as scientific men. And in that regard I must say that another so deplorably corrupt an influence as theirs upon the morals of science I do not believe has ever been operative (CP 6.3)⁴⁰

But Peirce was also a man deeply concerned with religious matters, as his writings on religious topics attest.⁴¹ As one would expect, he struggled in trying to reconcile his religious with his scientific tendencies, and was uneasy about superficial attempts to achieve this. When, for example, in the 1890s the *Open Court*, a journal devoted to philosophy and religion announced its intention to make an “effort to conciliate religion with science,” Peirce wrote to Paul Carus, the editor, and asked “Is this wise? Is it not an endeavor to reach a foredetermined conclusion? And is not that an anti-scientific and anti-philosophical aim? Does such a struggle imply a defect of intellectual integrity?”⁴² Peirce subsequently wrote several articles for the *Monist* and the *Open Court*; his synechism offered a possible *rapprochement* between religion and science by arguing for a continuum in which there is real connectedness between the physical and the mental/spiritual (and not unrelated parts) which shade into each other. In 1908 he published “A Neglected Argument for the Reality of God,” the culmination of his religious thought.

We have seen above that Haack seems to find the synechistic attempts by Peirce towards “onement” between religion and science, at least as stated in “Immortality in Light of Synechism” to be unpersuasive.⁴³ One reason stated is that “religion is best conceived, not as a kind of inquiry, but as a body of belief, a creed.”⁴⁴ But that is not exactly how Peirce conceived of religion, at least not how he conceived of it in theory. To be sure, he criticized, as seen above, how religion was currently practiced by the clergy, as well as how current theologians understood theological theory. But there is sufficient evidence that Peirce thought that his ideal of a genuine truth-seeking community did not exclude religious believers.⁴⁵ Indeed, it is not surprising that Peirce’s developments in one area, i.e. science, would inform his perspective in another (religion), and vice versa.

In “A Religion of Science,” for example, he explains the difference between the two from a social/historical developmental point of view. Whereas science developed in such a way as to “not rest satisfied with existing opinions, but to press on to the real truth of nature,” those who “have the interests of religion at heart are apt to press backward...refus[ing] to go through her successive transformations with sufficient celerity to keep always in accord with the convictions of scientific philosophy.”⁴⁶ However, “[w]hile adhering to the essence of religion,” a devoutly religious person can “cast aside that religious timidity... and cowardice... that is forever prompting the church to recoil from the paths into which the Governor of history is leading the minds of men... and will gladly go forward, sure that truth is not split into two warring doctrines.”⁴⁷

This is the ideal religion; not one with a “dead memory” or staid creed, but a “religion of science.” By this he does not mean a religion that worships science as the only source of truth (akin to a type of scientism—“a too uncritically uncritical a stance”—as Haack describes), but rather a religion in the “proper sense” of the word—“arising from nothing but the religious sensibility”—that becomes

animated by the scientific spirit, confident that all the conquests of science will be triumphs of its own, and accepting all the results of science... as steps toward the truth, which may appear for a time to be in conflict with other truths, but which in such cases merely await adjustments which time is sure to effect.⁴⁸

One can also see Peirce’s emphasis on the importance of community in the notion of truth as that which a community of scientific inquirers will discover in the long run reflected in the importance of a community of believers—

... religion, though it begins in a seminal individual inspiration, only comes to full flower in a great church coextensive with a civilization. This is true of every religion, but supereminently so of the religion of love. Its ideal is that the whole world shall be united in the bond of a common love of God accomplished by each man's loving his neighbour. Without a church, the religion of love can have but a rudimentary existence; and a narrow, little exclusive church is almost worse than none. A great catholic church is wanted.⁴⁹

Interestingly, Peirce's religious views do not conflict with those of certain mainstream Christian theologians regarding the role of human reason and the possibility of attaining some knowledge of God. Indeed, although divine revelation as well as religious (mystical) experience are offered by some as proofs of God's existence, they are not the only way to know of God. Thomas Aquinas, for example, famously tried to demonstrate with his Five Ways, a set of logical arguments based on different aspects of the natural world, that knowledge of the existence of God could be had separately from divine revelation.⁵⁰ In his "Neglected Argument for the Reality of God," Peirce attempted to make a case for God's reality, not his existence, the latter being a nominalistic mistake.⁵¹ But one can also see in Peirce's Neglected Argument a strategy for "the marriage of science and religion" by showing that the process of acquiring belief in God is of the same kind as the process for acquiring belief about the natural world—

It begins passively enough with drinking in the impression of some nook in one of the three Universes. But impression soon passes into attentive observation, observation into musing, musing into a lively give and take of communion between self and self. If one's observations and reflections are allowed to specialize themselves too much, the Play will be converted into scientific study; and that cannot be pursued in odd half hours.⁵²

Here, Peirce is intent in showing that the formation of the hypothesis that God is real is parallel to the formation of hypothesis in science, that is, the process that goes from observable phenomena and perception/perceptual judgement to conjecture, gets tested by experience and is either confirmed or not. The three interconnected stages of inquiry of abduction, deduction, and induction illustrate this process, which is the same in science and in religion, Peirce will want to claim.⁵³

DEATH AND IMMORTALITY

In his 1871 review of Alexander Campbell Fraser's edition of *The Works of George Berkeley*, Charles Peirce comments on the general lack of interest prevalent among "the most advanced minds" of his generation in "the only problems that metaphysics ever pretended to solve... the abstract acknowledgement of God, Freedom, and Immortality... now seen to have no practical consequence whatever".⁵⁴ For Peirce, though, as I've tried to show, these matters, as well as metaphysics in general, were far from dead. In "Science and Immortality," written in 1887, Peirce writes:

...the theory of another life is very likely to be strengthened, along with spiritualistic views generally, when the palpable falsity of the mechanical philosophy of the universe which dominates the modern world shall be recognized. It is sufficient to go out into the air and open one's eyes to see that the world is not governed altogether by mechanism, as...greater minds, would have us believe. The endless variety in the world has not been created by law. It is not the nature of uniformity to originate variation, nor of law to beget circumstance. When we gaze upon the multifariousness of nature, we are looking straight into the face of a living spontaneity. A day's ramble in the country ought to bring that home to us (W 6:63).⁵⁵

He concludes that since “mechanical philosophy of the universe” (again, “it’s not all physics”) is doomed, it must now give place to the possibility of more spiritualistic views, and he thinks it natural to anticipate that a further study of nature may possibly establish “the reality of a future life.” By a future life, Peirce meant that after death we shall retain or recover our individual consciousness, feeling, volition, memory; in short, a recovery of our mental powers unimpaired. And in “Immortality in the Light of Synechism” written some years later in 1893, Peirce considers again the possibility of a future life.

Here again his doctrine of synechism which, contra dualism, the philosophy which splits everything into two—materialism and idealism—maintains rather that continuity governs the whole domain of experience. The synechist, Peirce tells us, will not admit that physical and psychical phenomena are entirely distinct, but will insist that all phenomena are of one character—some more mental or spontaneous, and others more material and regular, but all alike exhibiting a mixture of “freedom and restraint.” Consciousness, on the mental/spontaneous side of the continuum, can be considered in three different ways (carnal, spiritual, and social), and it is in the context of these three that Peirce proposes that synechism can make sense of a claim to immortality.

Carnal individual consciousness is where feeling, volition, memory, and all mental powers are found, and is “but a small part of the man.” From a synechistic point of view, just as there are varying degrees of wakefulness and sleep, there are varying degrees between material life and death—“Synechism refuses to believe that when death comes, even the carnal consciousness ceases quickly.”⁵⁶ Here, Peirce admits he may have been influenced by a work of fiction, *Dreams of the Dead*, reviewed by him in the *Nation* the year before, which poses the possibility of a dreamlike awareness remaining past bodily death which gradually fades and can eventually transform itself to a different state, that of a spiritual consciousness—

A man is capable of a spiritual consciousness, which constitutes him one of the eternal verities, which is embodied in the universe as a whole. This as an archetypal idea can never fail; and in the world to come is destined to a special spiritual embodiment.⁵⁷

To illustrate this transition in the present life, Peirce provides the example of a friend, who lost his sense of hearing, but developed a mode of consciousness that allowed him to “feel” and enjoy the music by standing close to the instrument.⁵⁸ In the same manner, he says,

...when the carnal consciousness passes away in death, we shall at once perceive that we have had all along a lively spiritual consciousness which we have been confusing with something different.⁵⁹

And then there is a social consciousness—

... by which one’s spirit is embodied in others, and continues to live and breathe and have its being very much longer than superficial observers think... your neighbors are, in a measure, yourself, and in far greater measure...than you would believe.⁶⁰

Most scholars focus on Peirce’s comments about a future life as referring to the influence that a person’s life and ideas have on others and that remain after the person has passed, what he calls here a “social consciousness.” For Peirce, of course, this influence is real since ideas have the power to shape the conduct of others, so in this sense, the deceased person continues to have a “living” force.⁶¹ In this sense, it can certainly be said that Peirce continues to be a living presence amongst us. But I find his comments about the possibility of carnal consciousness shading into a continuum of a different kind of spiritual consciousness, as opposed to ending abruptly with death, more intriguing.⁶²

Elsewhere, Peirce questions the notion of death as an absolute end—

Death and corruption are mere accidents or secondary phenomena. Among some of the lower organisms, it is a moot point with biologists whether there be anything which ought to be called death. Races, at any rate, do not die out except under unfavorable circumstances. From these broad and ubiquitous facts we may fairly infer, by the most unexceptionable logic, that there is probably in nature some agency by which the complexity and diversity of things can be increased; and that consequently the rule of mechanical necessity meets in some way with interference.⁶³

In the 1987 fantasy-comedy film “The Princess Bride,” the character “Miracle Max,” an old folk healer, expresses a similar sentiment regarding death as he examines the lifeless body of young Wesley, the dashing protagonist, who has been tortured to death by the decree of the six-fingered villain. Pronouncing him as only “mostly dead,” Miracle Max explains that “mostly dead means slightly alive,” and proceeds to revive Wesley successfully with a chocolate-covered pill who then, of course, fights to win Princess Buttercup in the end, as befits the fairy tale.⁶⁴ But the notion that the difference between life and death is more a matter of degree than of kind, is not confined to fairy tales (or horror stories).⁶⁵

A recent feature in *The New York Times* reports on the work of a group of Yale neurobiologists studying the mammalian brain.⁶⁶ It has been known since the early 1980’s that the brain cells of mammals remain fairly intact for several hours after loss of blood flow. Some time later, it was found that certain neurons remain electrically active hours after the pronouncement of death as well. But the Yale scientists achieved something unprecedented—with the help of a pump-like machine which circulated liquids through the vascular system of the disembodied brain of a recently-killed pig, they were able to restore metabolic activity to the dead brain cells. In other words, they restored life to already-dead tissue.⁶⁷ Although the pig was dead, it was, Miracle Max would say, slightly (or partly) alive.

Nenad Sestan and his two Yale colleagues published the astounding results in *Nature* in April 2019. For six hours they maintained perfusion in the porcine brain, and they were able to restore complete metabolic function to the greater part of the brain; that is, the cells of the “dead” brain metabolized oxygen and glucose into substances such as carbon dioxide, an indication of life. “These findings, the scientists write, show that, with the appropriate interventions, the large mammalian brain retains an underappreciated capacity for.... restoration of...certain molecular and cellular functions multiple hours after circulatory arrest.”⁶⁸

CONCLUSION

Although Haack admits to being “a kind of prope-synechist,” she does not share Peirce’s conviction that the doctrine can be utilized to marry religion and science, nor does she support his “darkly Cimmerian” views such as carnal or spiritual immortality. She provides a scientific (but not scientific) account that proposes to explain human mindedness as resulting from socialization and language, a theory that makes further religious explanations unnecessary. I believe that Peirce would disagree only with the latter part of the theory, alleging that a view that separates religion and science is not quite synechistic (or fallibilistic) enough.⁶⁹ As to Metaphysics, though, that “Paris of the intellect,” I want to say they both might concur with the sentiment (as would I) that “Paris is always a good idea.”⁷⁰

NOTES

1. A portion of this paper was presented at the 2019 APA Central Division meeting in Denver, Colorado last February, and a translation in Spanish was presented at the VIII Jornadas “Peirce en Argentina” in Buenos Aires in August of that year. I want to thank Mark Migotti for the many helpful suggestions offered for improving this paper.
2. This is Rick Blaine’s (Humphrey Bogart) farewell line to Ilsa Lund (Ingrid Bergman) in the movie *Casablanca*.
3. I use the customary abbreviations of CP for *The Collected Papers of Charles S. Peirce*, followed by volume number and paragraph; EP for *The Essential Peirce: Selected Philosophical*, followed by volume and page number; W for *The Writings of Charles S. Peirce*, followed by volume and page number, N for *Nation* followed by volume and page number.
4. “And where do bad Americans go to when they die?... They go to America,” from the dialogue between the duchess and Lord Henry in *The Picture of Dorian Gray*.
5. When I discovered soon after that he thought the medieval philosopher, John Duns Scotus, made the right call regarding the reality of universals, I was hooked, and settled on the topic of my dissertation, which Haack subsequently directed. Peirce’s stance on realism and its influence on other aspects of his philosophy has been an enduring interest for me throughout the years hence. See my *From Realism to Realicism: The Metaphysics of Charles Sanders Peirce*.
6. Writing in the midst of what will be remembered as the 2020 Covid-19 Pandemic, it is hard to resist using this metaphor, but of course, I mean no disrespect.
7. Although I have now known Susan Haack for almost thirty (!) years, it is still difficult for me to stop addressing her as “Dr. Haack”. I attribute this to an inherent formality in Spanish, my native tongue, as a way of showing respect; Peirce and Haack would agree that language has an enormous effect on how one thinks—see e.g. Haack’s “Brave New World: on Nature, Culture and the Limits of Reductionism” in *Explaining the Mind* discussed further below. However, for the rest of this paper, I will refer to our honoree by last name only, as is customary in academic writing.
8. CP 6.6, 6.2, 5.423
9. CP 6.2
10. Ibid.
11. Ibid.
12. CP 6.6. Of course, for Peirce, anyone with a true desire in searching for truth and a willingness to discard beliefs in the face of contrary evidence could be considered as following the scientific method.
13. “Not Cynicism, But Synechism,” *Putting Philosophy to Work*, 84.
14. “Brave New World: On Nature, Culture and the Limits of Reductionism,” 34.
15. “Not Cynicism,” 85.
16. Ibid.
17. “Brave New World,” 53, 57.
18. “The Real, the Fictional and the Fake.” *Spazio Filosofico* 2013, 211.
19. CP 6.173, 6.169
20. “Not Cynicism, But Synechism,” 81.
21. Ibid., 86-89.
22. Ibid., 86.
23. Ibid.
24. Ibid., 82.
25. Peirce, *Essential Peirce* 2.3 cited by Haack in “Not Cynicism but Synechism,” 182.
26. Haack discusses science and religion more extensively in her previous *Defending Science*; the views expressed there are consistent with those of her later paper, but as in that, she does not include Peirce’s views on these topics. I am not aware of any other such discussions on Peirce’s religious views or his views on immortality.
27. “Fallibilism, and Faith, Naturalism and the Supernatural, Science and Religion,” *Putting Philosophy to Work*, 184.
28. Ibid.

29. Ibid.
30. "Brave New World: On Nature, Culture and the Limits of Reductionism," 63.
31. I cannot elaborate here on Peirce's complex theory. See Haack's "Extreme Scholastic Realism: Its Relevance to Philosophy of Science Today." *Transactions of the Charles S. Peirce Society* vol. 27, no.1, 1992; my *From Realism to Realicism: The Metaphysics of Charles Sanders Peirce*. Lanham: Rowman and Littlefield, 2007; and Robert Lane's recent contribution *Peirce on Realism and Idealism*. New York: Cambridge University Press, 2018.
32. "Brave New World," 66.
33. Ibid.
34. Ibid., 40.
35. Ibid.
36. Ibid., 49.
37. Ibid., 53
38. *Defending Science—Within Reason*, 293.
39. Raposa, 9.
40. CP 6.3.
41. We are told in David Pfeifer's "Charles Peirce's Contribution to Religious Thought" that in the *Collected Papers* alone there are at least 40 papers on topics of religious concerns, and at least 85 manuscripts.
42. Bernstein, 16.
43. Again, although she mentions Peirce's claims about immortality in this paper, she does not analyze them directly, nor am I aware of other attempts to do so.
44. "Fallibilism, and Faith," 184.
45. Although Haack describes her position in "The Real Question: Can Philosophy Be Saved?" as "naturalism-as-opposed-to-supernaturalism," she makes it clear that she does not therefore believe that "we must conclude that there is nothing but 'matter and energy and their interactions' and that this means that philosophy must look to sciences for answers." But again, she leaves no room for religion—"Granted, theological 'explanations' don't really explain anything: but it doesn't follow, and it isn't true, that science can explain everything." *Free Inquiry*, 42.
46. CP 6.428- 6.432. He notes, though—"It would be ridiculous to ask whose fault this situation is chargeable. You cannot lay blame on developmental forces."
47. Ibid.
48. CP 4.33.
49. CP 6.443. Raposa, 11-12.
50. Anselm, of course, thought that all we needed was to use our reason to prove God's existence, as he claimed to have done with his Ontological Argument. The soundness of all these arguments, though, has been debated for many years hence; Peirce himself comments on Anselm in CP 3.138.
51. Of course, as an extreme scholastic realist, Peirce associates reality with his category of thirdness, and not with secondness, or brute existence. For more on his realism, see note 28 above.
52. CP 6.459.
53. See Raposa and Anderson for interesting discussions on how Peirce's Argument was part of the project of better aligning these two.
54. W2.439.
55. W 6:63. This is of course reminiscent of "The Neglected Argument for the Reality of God."
56. EP2:3.
57. Ibid.
58. A contemporary example that is strikingly similar to that of Peirce's friend is the Scottish percussionist Dame Evelyn Glennie. Although she is "profoundly deaf," she claims that since sound is "simply vibrating air which the ear picks up," and since hearing is "basically a specialized form of touch," by refining her body's ability to detect vibrations in the air, she can "hear through touch." http://www.evelyn.co.uk/Evelyn_old/live/hearing_essay.htm. I am indebted to Mark Migotti for introducing me to this artist.
59. EP2:3.
60. Ibid.

61. See for example Raposa, 111-115.
62. Peirce himself was not at all convinced about this idea, when he admits “Those of us who have never met with spirits, or any fact at all analogous to immortality among the things that we know, must be excused if we smile at the doctrine” (CP 6.552), but he felt compelled to entertain the possibility.
63. CP 6.558.
64. Directed and co-produced by Rob Reiner, the film is an adaptation of the 1973 William Goldman novel of the same name.
65. Of course, it is now fairly commonplace that people with cardiac arrest, for example, are “brought back to life” in many cases with immediate intervention; for that to occur, though, there’s a very small window of opportunity.
66. The article titled “The Reanimators,” written by Matthew Shaer, appeared in the Sunday magazine of *The New York Times* on July 7, 2019, p. 28.
67. The question, of course, of the relationship between metabolic cellular activity and consciousness is a related, and much more complex issue. Aware of the ethical implications of (inadvertently, but possibly) restoring consciousness to a disembodied brain, measures (such as the use of channel blockers) were taken by the researchers to prevent a possible re-emergence of consciousness, we are told. *Ibid.*, 43.
68. *Ibid.*
69. “Thus scientific infallibilism draws down a veil before the eyes which prevents the evidences of continuity from being discerned” CP 1.172. If I were asked, as in the “By the Book” New York Times weekly celebrity interview, “which three writers, dead or alive, do you invite” to a literary dinner party, Peirce and Haack would be my first two choices for an unforgettable evening of philosophical discussion!
70. Well, not *always*; certainly travel to Paris, France during a pandemic would not be a good idea; nor would a tour of the Paris of the intellect be advisable without a good philosophical sense of direction. The quotation is attributed to the character Sabrina Fairchild (played by Audrey Hepburn) in the 1954 movie “Sabrina.”

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Naturalism, Innocent Realism and Haack's subtle art of balancing Philosophy

SOFIA INÊS ALBORNOZ STEIN
AND
ADRIANO NAVES DE BRITO

Web:
<http://unisinos.academia.edu/SofiaStein>
<http://unisinos.academia.edu/AdrianoDeBrito>

To walk between extremes is a subtle art, whose grace and delicateness can be easily misunderstood by those who love extremes. Those who love art, however, might to think they love it because of the extremes in it, and not because of the subtle harmony and balance the artist found among them. For us, one of the most appealing notes of Susan Haack's philosophy has always been its search for equilibrium. A way to seal between Scylla and Charybdis in every theme she laid her keen mind over. An ability to be a moderate even among moderates.

In this tribute we would like to address two of those themes which are tightly interwoven and represents well the beautiful effort to balance and put down to earth, through a pragmatic instinct, excesses metaphysicians are prone to commit. The two themes are naturalism and realism.

As for naturalism, there seems to be something odd about being a philosopher and a naturalist, since if science can give an account of every aspect of the world, then what is the point of doing philosophy? Moreover, if philosophy is not concerned with giving an account of the world, what is the point of being a naturalist in philosophy? The formulation is paradoxical enough to make us suspect that it means more than it conveys at first glance. Nevertheless, because each of its conditionals points to something generally accepted, its astonishing effect remains.

Indeed, on the one hand, science has become the sole oracle for questions concerning the world and its furnishings. While of course not compulsory, this view entails a kind of naturalism which professes that everything in existence exists within the realm of nature and that beyond nature there is nothing. This thesis is the core of ontological naturalism. Furthermore, since science and its methods, laws, and descriptions provide our only access to nature—this is the core idea of methodological naturalism—no investigation could give an acceptable account of the physical world, or of life, human nature and suchlike beyond that of science. Accordingly, if philosophy were capable of delivering any useful answers to meaningful questions concerning the world, then it would have to be understood as a science, and, as such, to be committed to ontological as well as to methodological naturalism.

On the other hand, it is not unusual to take philosophy as a kind of discourse that is irreducible to a description of what there is. A discourse about discourses; a metadiscourse to which even science, and perhaps especially science, has to be subjected. In this sense, philosophy is not *prima facie* about the world but is about our knowledge of the world, which does not place philosophy outside of nature, but does

grant it a particular role in the acquisition of knowledge, or even in the organization of the knowledge science can deliver.

Haack would say that things are more complex and interwoven. They are indeed, but it takes some biological perspective to see what she sees. In a text from 2013, where, entirely on her taste, she balanced formalism with content, she described her early days in Philosophy like this: “I was educated, in the late 1960s and early 1970s, first at Oxford and then in Cambridge, largely in the then-dominant-linguistic-conceptual-analytical style” (2013, 235).

Ayer was undoubtedly a central character in defining the “then-dominant” style. His youth manifesto represents quite well one strong defence of a conception of philosophy very much committed to showing that there is a specific methodological relationship between philosophy and science, but their functions and methods are not the same. Ayer points out the role played by philosophy, as he sees it, concerning the acquisition of knowledge:

And we have also pointed out that it is impossible merely by philosophizing to determine the validity of a coherent system of scientific propositions. For the question whether such a system is valid is always a question of empirical fact; and, therefore, the propositions of philosophy, since they are purely linguistic propositions, can have no bearing upon it. Thus the philosopher is not, *qua* philosopher, in a position to assess the value of any scientific theory; his function is simply to elucidate the theory by defining the symbols which occur in it (Ayer 1936, 168).

Now, if philosophy is a kind of metadiscourse we can apply to elucidate theories and, therefore, to elucidate science itself, how can it make sense to use a naturalistic approach in philosophy? Would it make sense to try to “defin[e] the symbols which occur [in science]” through a naturalistic method? What exactly would it mean to do so? To define symbols empirically, for example, by merely describing the way people, especially scientists, use theoretical concepts? And if so, why shouldn’t that task concern linguistics rather than philosophers?

Much more recently, 2003, Daniel Dennett, another heir of the same tradition, gives to naturalism in Philosophy a place in organizing scientific knowledge as a unified whole:

My fundamental perspective is naturalism, the idea that philosophical investigations are not superior to, or prior to, investigations in the natural sciences, but in partnership with those truth-seeking enterprises, and that the proper job for philosophers here is to clarify and unify the often warring perspectives into a single vision of the universe (Dennett 2003, 13–15).

How could philosophy fulfil such a unifying task through a naturalistic approach? Let us ask again the question put to Ayer: is it by using some empirical procedure? By describing the way each “warring perspective” pleads its case? Of course, that would give us the theories again, not a unified version of them. Or should clarification and unification only be done with logical tools? Would that even be possible? If not, why shouldn’t scientist be also concerned with this task as much as philosophers?

It is clear that hidden in the paradox of philosophical naturalism is a complex relationship between science and philosophy; but also between science and the world, which means between the language of science and the objects in the world. Do we know the external world, or is our knowledge of it a mere shared subjective representation? One that is true if and as long it can be secured against conversational objections? Haack has spent some of the most eloquent pages in contemporary Philosophy struggling against vulgar pragmatism, as she has labelled Rorty’s standpoint.

The idea that reality is inscrutable is alluring and up to a point acceptable. Nevertheless, not up to the point that it cannot correct our knowledge of the world, Haack would say. Her shield against a malicious attack to scientific truth comes with a realism which is metaphysically innocent, but undoubtedly not ineffective. If philosophy is there to help sciences to achieve more clarity about their role in human social enter-

prises, it must show how to seek for truth and how truth bear on facts and objects science describes through language.

In order to save truth and with it science from malicious detractors, one has to articulate naturalism and realism in a continuum. The tradition Haack was educated in did it, and she did it her moderate way.

I. SCYLLA, CHARYBDIS AND HAACK'S NATURALISM

In "Between the Scylla of Scientism and the Charybdis of Apriorism" (BSC), Haack navigates amid two significant figures of the analytical tradition to place her naturalism in an Archimedean setting. Following Strawson's line of reasoning according to which Quine has a "scientific commitment" when putting philosophy "in continuity with" science, Haack makes a distinction between three not harmonious elements in Quine's commitment. The first element consists in the claim that philosophy only differs from the scientific investigation in its degree of abstraction and generality, that its method does not differ from scientific method and must aspire to the same standards of rigour and precision in the search for truth. The second one would be the claim that philosophical issues should be solved within the empirical sciences, such as empirical psychology, which is a stance she calls "reformist scientism." Sometimes Quine goes as far as saying that the philosophical questions that cannot be answered by science, such as the question about the external world, are not "genuine questions," which would commit him with something more substantial: "revolutionary scientism".

There is, to Haack, a logical incompatibility between the first and the second element, since being "in continuity with" science is incompatible with "being identical" to science. The third element is the "extensionalist theme" and refers to Quine's rejection of all philosophical concepts that cannot be explained in purely extensionalist terms, such as "meaning," "analytical," modal terms, properties, propositions and so forth. The use of the extensionalist criterion for the acceptance of concepts and, therefore, also of questions about these concepts "suggests," in Haack's words, "that Quine acknowledges, in effect, only one kind of inquiry, only one kind of truth: the empirical" (BSC, 51). This third element, she concludes, is logically independent of the first one, which states the continuity between science and philosophy.

As for Strawson's philosophical view on the relation between science and philosophy, she also makes a tripartite distinction of independent elements. The first component consists in the claim that "philosophy should concern itself, not exclusively with the concepts and categories of science, but also with those of other disciplines, and, most centrally, with 'the structure of our common thinking'" (BSC, 52). Haack calls this "the theme of extra-scientific scope." The second element is "the conceptual-analysis theme," which describes the analysis of conceptual structures and interconnections as the central task of philosophy. Strawson's claim that the philosophical enterprise should be undertaken with a more descriptive than critical spirit is the third element, viz. "the descriptivist theme."

It is interesting to note that the expression "between Scylla and Charybdis" implies that we face an inescapable dilemma. Haack, however, offers a way out of it. Four constituents or themes delineate her position. The first one is similar to Strawson's "theme of extra-scientific scope". It consists in asserting that there are several philosophical questions, such as questions of ontological choice, questions about when one should consider a theory to be true, or questions about how we perceive external objects, that cannot be answered within empirical science and must, therefore, be investigated within philosophy's realm.

Besides that, Haack also advocates a conception close to Quine's according to which there is a continuity between science and philosophy, which is the second element of her position. The philosophical method should aspire to the same rigour and precision as the scientific method in its search for truth and, in a very general sense, involves "making conjectures, developing them, testing them, judging the likelihood that they are true" (BSC, 54).

The third item of her philosophy is the theme of the "intertwining of the empirical and the conceptual", and it holds that philosophical inquiry is a combination of empirical questions, in Quine's terms, and conceptual ones, in Strawson's terms. Philosophy raises empirical questions because it examines problems

originated in scientific inquiry or because some questions are related, not to science in the proper sense, but to ordinary, daily experience, and also because the concepts it analyzes, whose structures and interconnections, as noted by Haack, are seen by Strawson “as the chief focus of philosophical attention” (BSC, 55), owe their internal complexity to empirical presuppositions, such as “the presupposition that our senses are a source of information about things and events around us,” or, in other words, the presupposition of the reality of the external world.

“Critical commonsensism” is the fourth element of Haack’s philosophy. A tag owing to Peirce, who, according to Haack, wanted to start from natural and instinctive beliefs of common sense, but critically, because those beliefs, although seemingly indubitable, need to be reformulated in order to be stripped of their inherent vagueness.

Nevertheless, those four elements are not enough to give an accurate account of Haack’s naturalism. In her book *Evidence and Inquiry* (EI) she makes a distinction between aprioristic and aposterioristic naturalism, where the latter claims that the problems of epistemology can be solved *a posteriori*, within the web of empirical belief, while the first claims that philosophy can solve the problems on its own independently of experience.

Quine’s reformist and aposterioristic naturalism is a consequence of the denial of the existence of *a priori* truths, i.e. “of his gradualist conception of philosophy as differing only in degree of generality and abstraction, not in the metaphysical or epistemological status of the truths it seeks, from the natural sciences” (EI, 122). Haack follows a path similar to Quine’s, assuming that there is not *a priori* knowledge of facts. Unlike him, however, she admits the possibility of working out an *a priori* theory of justification that explains how a true belief might have a justification that is independent of experience.

Despite this concession, she does not share Strawson’s aprioristic view according to which philosophy has questions of its own to be answered and must answer these questions in a way that is independent of experience or empirical science, using only the observation of “language facts” originated in “common thought.” In her words:

Anyhow, I see philosophy as depending, as *science* does, on experience; unlike it rather in the degree of indirection of the dependence, and in the kind of experience on which it depends – in requiring special attention to features of experience so ubiquitous as to go almost unnoticed, rather than on special efforts and apparatus to allow us to experience what is not available to everyday, unaided observation (EI, 213).

Although accepting that there are philosophical questions that cannot be answered by science and that philosophy has the task of investigating problems and concepts of everyday life from a point of view that differs, in a sense, from empirical science, Haack maintains a “scientificist” view of philosophy. According to her, the method of philosophy is similar to the one employed by the empirical sciences and keeps, even indirectly, a connection with the “tribunal of experience,” or does so when it assesses meta-scientific questions, or when it examines everyday experience from a rather general point of view.

The resulting conception is one that admits a proper space for philosophical questions and a discourse analysis not always directly dependent, as such, on empirical facts. Haack acknowledges, however, that philosophical subjects, even those related to linguistic or conceptual analysis, are embedded in empirical sciences, be it methodologically or in terms of content, and therefore, that if not directly dependent for their truth on empirical facts, they are always tainted by them.

Because philosophical subjects, methods and contents are derivative of scientific theories and practices, one of those questions philosophy alone can address is the question about the degree of reality we can attribute to the objects of scientific judgments, i.e. the kind of realism one is prepared to admit. Haack’s realism is the subject of the next section, but its innocence is of naturalistic origin. Indeed, another central philosophical question is how to justify the truth we can expect of those same scientific judgments.

Although related to the discussion about ontological degrees of reality, the point here is on criteria for the truth of scientific judgments. To that question, Haack's alternative is "Foundherentism".

Foundherentism is a stance coined and engendered by Haack, after which the content of all our beliefs comes, to a certain extent, from experience. She uses Quine's allegory about the socially inherited language tradition to make her point clear. Quine attributes the colour "light grey" to the web that we inherit historically, where there must be, on the one hand, facts (black colour) and, on the other, conventions (white colour) to form this "light grey". Haack departs from that and elaborates a diagram of squares representing sentences in which each one is partly white and partly black. The larger or smaller black surface represents the degree of dependence on experience. However, none of the squares that symbolize the possible sentences we believe in and are present in our "web of beliefs" is completely white. (EI, 51). So, while Quine, because it is impossible to distinguish what is theoretical and what is empirical in a sentence, assumes that there are no pure black nor pure white parts in the "light grey" of one singular belief or in our web of beliefs – although each belief is a result from both – Haack's diagram seems to imply that one can distinguish theoretical from empirical parts in a sentence. Notwithstanding, she holds that one cannot justify any sentence solely empirically, nor purely *a priori*. That is the core of Foundherentism.

What Haack's diagram reveals is, therefore, her view that all sentences of our "web of beliefs" are, to a certain extent, "contaminated" by experience, which leads us to wonder in which sense Haack intends "to combine the conceptual and the empirical" or, in Strawson's terms, the *a priori* and the *a posteriori*. If Haack does not concede the existence of *a priori* propositions to Strawson, then her stance does not seem to be different from Quine's except for the comprehensiveness of the questions raised by philosophy. If so, she would agree with Quine that the whole universe of language is impregnated with *empiria*, but would believe that there are relevant philosophical questions that go beyond empirical science as such. These similar views of Quine and Haack seeing philosophical activity as influenced in content and method by empirical inquiries—at the same time as philosophy has scientific theory and practice as its main subject—although not identical with natural sciences, are entirely opposed to Strawson's claim. In his words: "I see no reason to suppose that further empirical discoveries, however interesting in themselves, could have any significant bearing on the substantial philosophical question(s) at issue" (Reply to Susan Haack, 66).

Haack has always pointed to the constant debt of gratitude to the so-called empirical sciences that philosophy accumulated throughout its history. In multiple ways, she has taught, empirical sciences contributed to the activity of philosophical inquiry both through examples and knowledge.

II. HARPOONS, NETS, CROSSWORDS AND HAACK'S INNOCENT REALISM

In *Defending Science: Within Reason* (2003), Susan Haack faces the problem of bringing together two views of science: the classical view, according to which science is ruled by a strict method of inquiry, and a more modern one, which considers it to be dependent on social, political, economic and cultural contexts. According to this view, these contexts would be determinant for the way a scientific inquiry is conducted. As Haack says, it is not enough to assert the need to reconcile two extreme views. It is also necessary to show, beginning with the description and explanation of several aspects of the scientific inquiry, how science develops and progresses, and which are the relevant aspects of the activities related to it. For instance, a more complete and precise explanation of science—and also of truth—must include both a metaphysical and an epistemological position concerning the possibility of scientific theories establishing a true representation of reality.

It is well known that Haack has an empiricist and pragmatist view of our capacity to know the world (Haack 2003, 125). We are dependent on our capacity for perceiving things around us. Moreover, we depend on the kind of instruments we have developed and constructed to help us in our scientific work; and these are not only material instruments but also theoretical and even fictional or imaginary ones. Human perception has to be complemented by capacities such as classifying, perceiving similarities, imagining contra-factual situations, figuring out general hypotheses, and, as Haack puts it, by a kind of 'instinct' that

helps scientists ‘sniff out’ the better hypotheses. In metaphysical terms, Haack supports an innocent realism which is related to common sense and is a view which presupposes the feasibility that we can achieve knowledge (truth) about the world, without the guarantee that we can exhaust knowledge, i.e. without the guarantee that we can know everything about it.

Notwithstanding, the kind of realism supported by Haack does not presuppose either that there is just one set of truth descriptions related to what we can observe, or that we should not change, in any circumstances, the lexis or the semantics of the terms used to describe and explain truly observed events. It also presupposes that there is a real world, which is the criterion for evaluating our statements, both in science and in daily life, in terms of truth or falsehood. Haack criticizes the instrumentalist view as well, which avoids discourse concerning truth by claiming that scientific theories are just tools we use to deal with the world, tools that do not need to be classified as true or false.

The flaws we find in scientific theories, together with their inherent incompleteness, are, she says, not sufficient reason to doubt the existence of only one world that we can describe from different points of view, languages and terminologies. While agreeing that incompleteness is part of the imperfect human way of knowledge, she argues against scepticism, and also against pluralism. Again, one can identify in Haack’s discourse a vindication of common sense. The main points are the following: a) there is no reason for doubting what we usually believe; and b) there is a world we try to disclose and to explain. Its complexity and the limited way we have of approaching it do not justify scepticism, either concerning knowledge or to existence. In the context of this line of argument, the epigraph chosen by Haack for her chapter about realism in science could not be more accurate: “Let us not pretend to doubt in philosophy what we do not doubt in our hearts” (C. S. Pierce, “Some Consequences of Four Incapacities”).

Innocent realism, therefore, could be summarized in the following assertions: a. There is not only one set of true descriptions related to what we can observe; b. we can change the lexicon or the semantics of terms used to describe and explain observed events truly; but, c. there is only one world that we can describe based on different points of view, languages and terminologies; and d. this real world is the criterion for the assessment of our utterances, both in science and everyday life, in terms of truth or falsity.

To cope with issues of the highest importance to the philosophy of science—such as the relationship between observation and theory, the relationship between general expressions and explanation, and the relationship between truth and scientific progress—Haack repeatedly uses the allegory of crosswords, previously introduced in *Evidence and Inquiry: towards reconstruction in epistemology* (1993). This allegory allows us to consider observational statements as being sustained partially by ostension, and also as always being related to other statements and established beliefs. There is not, says Haack, a single boundary between observational statements and theoretical statements: “Is there a privileged category of infallible observation statements, or of observable things? No, and no again. And yet the evidence of the senses ultimately anchors our theories in the world; and it is a real constraint” (Haack 2003, 125). Observational statements are not, in a strict sense, theoretical, because they can be learned through ostension. But this does not make them independent from other statements of the theory. There are semantic links between these observational statements and other statements of a language or theory. As regards theoretical statements, Haack does not deny that they possess specific properties which distinguish them from observational statements: “Neither is it to deny that, at any time, some statements attribute properties which are no way observable – “purely theoretical” statements, as we might say. Surely there are such statements; but the boundary of the “purely theoretical” constantly shifts with advances in instruments of observation” (Haack 2003, 129). In other words, there is always an exchange of information between the so-called observational statements—that can be learned, verified or falsified by ostension—and theoretical statements that sometimes are maintained as if they were *a priori* certain.

Less innocent realistic standpoints which make direct reference to a solution for scientific dilemmas concerning truth are also Haack’s target of criticism. Scientific language is closer to ordinary language than to formal language. There is no rigid designation for the terms of scientific language. Names are not harpoons to objects. For Haack, instead of thinking of scientific expressions as singular names that ‘point

to' well-defined singular objects in space and time, the harpoon picture (Haack 1978, 64) we should take scientific expressions as referring to objects as general expressions (generals), whose intensions and extensions change in line with the changes that occur in ordinary language or scientific theories. The changing meaning of general terms is related to imagination, which is one of the faculties that allow us to create new meanings to explain the world better. Once again, the allegory of crosswords gives us an indication of how we should regard a scientific explanation: it establishes links between general expressions, it always makes generalizations, and it shows us what particular objects (or sets of objects) have in common by determining the laws that govern their behaviour. We quote: "My approach is realistic about perception, about kinds and laws, about the world, about truth" (Haack 2003, 124).

Nevertheless, we should be cautious when interpreting this quotation. It is essential to observe that Haack does not assert that we cannot classify objects in different ways. In addition, she does not affirm that there is only one possible way of explaining or establishing causal relationships between events which we can truly say are real. It is this kind of liberalness in Haack's position which demands that she attaches the adjective 'innocent'—modest and not extreme—to the realism she maintains.

To understand the relationship between the notion of truth and the identification of 'generals'—a Peircean concept—according to Haack, one should examine how she approaches the problem of identification of 'natural kinds'. She denies that we need to hold a kind of essentialism in order to accept the reality of natural species or to accept the truth of statements that contain general terms. Because: "Whether a (synthetic) description is true or is false depends in part on what it says, which is a matter of human linguistic convention; but, given what it says, whether it is true or it is false depends on whether the things it describes are as it describes them" (Haack 2003, 140). So even if changes in the extensions or intensions of a given classification occur, it could still convey truths (partial ones at least) that could contribute to scientific progress.

Innocent realism is a philosophical perspective that assumes that we can acquire knowledge about the world without having the guarantee that there is a necessary and immutable correspondence between our classification of sets of objects, i.e. without the guarantee that our classifications actually correspond to sets of objects of one and the same kind because these objects are *the* "sets of objects" of one and the same kind given in reality. There is something conventional in our classifications, although they correspond to "knots of properties held together by laws." We do not need to assume that the aggregates of properties to which our general terms refer are such that they require from us the *discovery* of a single set of terminological classification. That is why, when using the example of natural kinds to illustrate her innocent realism, Haack claims that "there are real kinds; but this is only to say that some knots of properties are held together by laws" (2003, 124). On the other hand, if we did not assume the reality of "knots of properties," it would not be possible to explain how we classify objects and living beings. If that were not the case,

we couldn't categorize things or discover useful generalizations about them; nor could the natural sciences—deeper and more detailed than everyday empirical inquiry, far better unified, more accurate, yet still thoroughly fallible and imperfect—gradually have managed to identify real kinds of thing or stuff, discern their inner constitution, and discover laws of nature. (Haack 2005, 250).¹

Part of the problem of realism is indeed related to the question of the reference of our general terms for natural kinds. Haack takes a descriptivist position without denying the achievability of a precise reference to objects: "... we can acknowledge that reference is crucial without denying that kind-expressions have descriptive meaning" (2003, 134). Thus, Haack enters the discussion about the reference of names to kinds, without actually taking a radical position in favour of or against direct designation. She takes an intermediary position in which the possibility of a direct reference to individuals of a kind through expressions-for-kinds is not denied, but in which the reference can be made through a descriptive content connected to the expression: the net picture of fishing objects in the world (Haack 1978, 64). Her moderate stance about the opposition between descriptivists and advocates of direct reference has the purpose of avoiding, on the

one hand, to fall prey to an instrumentalist position in which predicates might be seen just as conventional stipulations restricted to a language context, and, on the other hand, of falling prey to a metaphysical realism in which the relation of reference determines the content of the expressions-for-kinds without the need to presuppose a sort of stipulation of the properties of the kind previous to the relation. In this way, Haack takes distance from more radical externalist approaches in epistemology, such as the viewpoint of the early Putnam (1975a), who for a long time led, in the field of philosophy, along with Saul Kripke (1981 [1972]), the discussions about natural kinds. As known, according to them, the causal relations between objects and between the knowing subject and objects would be the determinant aspects of the semantic relation, i.e. the determinant aspects of what general terms or terms for natural kinds mean. Haack's foundherentism does not entirely exclude this perspective since her approach requires the presupposition that there is a correspondence between what our terms for natural kinds mean and "real generals": "In fact, as I said earlier, the very possibility of scientific inquiry requires that there be, as Peirce would have put it, 'real generals'; otherwise, though we could describe particular things and events, we could neither explain nor predict" (Haack 2003, 129). However, what are "real generals"? Moreover, how do they differ from real natural kinds? It is in the definition of real generals that the proper realistic aspect in Haack's view, which is recovered from Peirce, appears more clearly:

I would say, as a rough first stab, that kinds are not simply properties or similarities, but more like congeries of properties held together by laws, i.e., clusters of properties co-occurring because they are lawfully connected; and that a kind is real just in case it is independent of how we believe it to be, i.e., the cluster of properties is lawfully connected independently of our classifications (Haack 2003, 131-132).

What stands out is that Haack's realism goes beyond the possible claim that there are groupings of properties that can receive a standard naming from us. She also claims that these clusters are ruled by laws that are independent of our classifications. In this way, realism gets an unexpected additional strength. However, she does not go as far as to claim that our classifications are always correlated to real natural kinds since classifications can change and be improved. So Haack (2005a) agrees that there is an evolutionary aspect in scientific classifications, i.e. the conceptual changes that are constant in science. However, she simultaneously holds a kind of correspondentism which, although it is not a metaphysical realism, affirms the existence of real kinds to which we get increasingly closer through gradual changes in our terminology.

III. AN INDISPENSABLE ART

Those who expect moderation to be mere conciliation are wrong. In any case, that would be a mistaken way of describing Susan Haack's art, which is not a preference for moderating positions, wherever their starting point, but which is about finding a moderate stance among those who take fundamental notions seriously. Notions like truth, reason, reality, falsehood and science. Notions without which the debate is empty and confusion reigns.

In a world fraught with clashes in which opponents place themselves as far apart as those who disdain science and those who trust it implicitly, Haack does not seek conciliation. With the detractors of the truth, there must be only patience to show that they are wrong. In this regard, one cannot deny, even in the most adverse and unfavourable scenarios, Haack's good disposition and formidable didactic to show to the nefarious detractors of the truth their mistakes. Although efforts to convert hidebound extremists is, more often than not, in vain, the fruits of such efforts may thrive among the novices. Students rescued by her work from the philosophical chatter of those who confuse the mitigation of truth with its denial.

Our tribute to Susan Haack pays homage to her sophisticated art of balancing philosophical positions, whose bases are within the scope of reason, as a means of approaching a more correct one, as a means of

favouring the arduous and gradual acquisition of knowledge. Today as yesterday and always, an indispensable art.

NOTES

1. Here, we do not intend to exhaust the analysis of Haack's use of the notion of "law of nature." In her thought, this notion seems to have a more realistic content than the notion of "knot of properties."

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Learning from Fiction

MEGGAN PADVORAC

Academic Success Center, Bellevue College

I began my Ph.D studies hoping to work with Dr. Haack in logic, but she didn't teach a logic class while I was there. She taught an epistemology class, and a Pragmatism class, and then one on philosophy of fiction. I may have known before I went to the school that she worked in philosophy of fiction, but it certainly wasn't part of my initial reason for wanting to work with her. How fortunate I was to find in Dr. Haack a fellow lover of good books, and someone whose other philosophical ideas created a valuable approach to the study of fiction!

Fiction is certainly not always the clearest way to convey truths; in fact, one might go so far as to say that the clearer, or, at least, the more baldly ideas are put in fiction, the more the fiction as a work of art suffers. But it is hard to beat fiction for memorability. So, even though one may be more able clearly to explain one's reasons for thinking something in, say, an essay or a letter, it may be a better choice to write a good story illustrating an idea if it is something one wants people to remember vividly.

Fictions can be a launching point for the discovery of truths (or new aspects of truths) about the real world. This is modeled beautifully by Dr. Haack in her paper "The Ideal of Intellectual Integrity, in Life and Literature."¹ In this essay, she has it before her to analyze certain aspects of epistemological character, with an emphasis on honesty and how it interacts with carefulness and diligence. There are a number of ways one might attempt such a task, but in this piece Dr. Haack draws examples from Ernest Pontifex's epistemological journey in *The Way of All Flesh*. Ernest isn't real, of course, but he is very interesting, and, with the aid of the narrator, his growth from a well-meaning but dogmatic parrot into an honest and introspective thinker is traced both clearly and memorably. What a fantastic picture to use as a starting point in investigating what it is to be intellectually honest, as a real person in the real world!

Certainly, some ideas communicated through fiction admit of truth in the real world—and they can be ideas about the real world. Here is an example of a true sentence that is communicated by a novel: Ernest Pontifex is a complex character that grows tremendously over the course of the novel. Why this is a true sentence is not at all complicated; to find out that it's true all one has to do is to read the book. But it's only a truth about a novel. Here's a much more interesting truth claim that is communicated by the same novel: Anyone espousing Victorian morals is likely to be a hypocrite. I don't know if that's true or not, and it's not my point here to go into the question. *The Way of All Flesh* certainly gestures in that direction, though, and it would be

a mistake to interpret the author as doing anything other than saying something about people *in the real world* who espouse Victorian morals. His domain of discourse, so to speak, should not be interpreted as being about only the fictional world that he created in the novel.

This raises an interesting question about justification: to what extent am I justified in believing a truth-claim about the real world that originates in a work of fiction?

One way to answer this is to say that because any truth-claims that occur in a fictional work are the result of the author's imagination and choice, and are technically only about the world of the fiction created by the author, the mere fact that a truth-candidate occurs in a fictional work lends no support at all to the truth of the claim. This is a possible way to approach it, that is almost correct, but not quite exactly right.

Here's another example, not quite like either of the two above: in a game show set within a television show², the host asks the contestant the name of Buchanan's vice president. She answers, "Breckinridge," and gets the question right. This example resembles the first in that the truth-claim in question is about a matter of fact that can be fairly easily verified, but is unlike the first example in that it occurs in the fiction, rather than being about the fiction.

Of course it is possible for a truth-claim like this one about Breckenridge, occurring within a fiction, to be an important causal factor in someone's coming to know it, but it is pretty clear that without further investigation, one would be unjustified in believing the claim, about the real world, just because one has found it in a fictional story. But context matters. I'd argue that there are cases in which occurrences like this do provide a little bit of evidence for the real-world truth of the relevant proposition—and the interesting thing about this is that it has as much to do with the context of occurrence in the fiction as it has to do with the content of the proposition. An off-the-top-of-my-head list of things that determine context in which a truth-candidate occurs is: who says it? Are they represented as being serious and undeceived, and reliable? Is the world of the fiction supposed to be like the real world in the relevant way(s)? What role is the proposition playing in the fiction? (i.e. does it seem to have been included to lend credibility to the story, or is it relied upon so heavily that it feels like it may have been made up to move the story along?)

Dr. Haack's foundherentism has some explanatory value here. The important idea behind foundherentism is that, while some beliefs are more basic than others (especially ones that are closely tied to experience), it is possible in principle for every belief to lend support to any other belief with which it is consistent and to which it is relevant. And, importantly, all beliefs end up relying in part on sensory experience, so that there is always something more than only consistency with other beliefs to provide reason to believe. In this way, propositions that, for some believer, originate from a fiction, can both become justified for that believer, and can provide justification for other beliefs, despite their origin. In the Breckinridge example above, even if the viewer has no other knowledge about Buchanan's presidency, there are mechanisms by which she can come to have a bit of justification in believing the proposition stated by the character in the show. Within this particular show, the question occurs in a string of questions: The first laws of planetary motion were known as... Kepler's Laws. The scientific name of parrot fever is... psittacosis. The islets of Langerhans are in... the pancreas. Hannibal crossed the Alps in... the second Punic War. Suppose that at least some of these facts are previously known by the viewer (which isn't unlikely, necessarily). I think, in that case, the viewer's certainty in the truth of the unknown fact-candidates is raised by the truth of the known facts. To make it true in the fictional world that Breckinridge was what he was in the real world was still completely within the control of the writer. But, given our viewer's other knowledge, that the writer chose to use a fact from the real world as fact in the fiction is clear in some cases, and makes it more likely than not that when the status of a proposition in the fiction is unknown, that it will follow the same pattern as other similar propositions in the same fiction.

So this is a case where some beliefs can raise one's confidence in propositions—which can be completely unrelated to each other by topic, even—by being used together as truths in a fiction. The fact that they occur together makes it so that some of them can lend support to others; but there are more general beliefs about the fiction itself that make it so the viewer can even consider whether fictional facts may be also true of the real world. If the game show from this example had taken place in an episode of *The Twilight Zone*,

for example, the ability of some propositions true in the fiction to raise justification in believing other such propositions would be broken; *The Twilight Zone* often (always?) starts with the mundane, ordinary and realistic, and ends up in the absurd. But because this game show bit occurs in a series in which background historical accuracy is apparently highly valued and generally attempted, mutual support between propositions is possible. (Of course, one would still not be justified in going around claiming that they know anything about Buchanan's VP if this was her only source of information about it, even if she is an authority on both the pancreas and the Punic Wars.)

It is not at all complicated to come by additional evidence about Breckinridge's Vice Presidency, if one knows how to look, just as it is easy to find out about Kepler's Laws, psittacosis, the Islets of Langerhans, and Hannibal. The narrator of Jules Verne's *Journey to the Center of the Earth* writes at one point, "Basalt is a brown rock of igneous origin." Jane Austen's novels all assume correct geography of England, including accurate travel times with the technology of the period. The novels of writers such as Tolstoy or Hugo often include lengthy digressions into matters of fact—the chapters about the Paris sewer system in *Les Misérables* being a notable case in point.³ That these things were and are true is uncomplicated and easy to verify, and while it is interesting to think about how these facts are at play in these various stories, and what role they have in helping the audience to imagine the story, it is not very interesting to think about whether or not they are true. Fact-claims on the order of "anyone espousing Victorian morals is likely to be a hypocrite," however, are interesting in that way. There is also a question of epistemology for these claims: to what extent is one justified in believing this sort of truth claim when, in a sense at least, a fiction offers these claims as truth?

I think such justification works exactly the same way for this more complicated kind of truth claim as it does for boring ones such as the one in the Breckinridge example: each individual member of the audience compares the fiction, including whatever implications and suggestions of truth that he has picked up on, with his experience of the real world, and if he finds that the fiction is generally consistent with what he knows of the world to the extent that he knows it, then he would be justified in tentatively accepting, as more likely than he might have otherwise accepted, the truth-claims the fiction makes regarding the world that is beyond his experience of it. As in the Breckinridge example, however, this tentative acceptance does not and cannot amount to knowledge; the stories that make these truth claims are not evidence for the truth of the claims. They rely on the audience's other beliefs about the real world for the epistemic impact that they do have.

Note, too, that the same fiction may lend justification to one person and not to another; someone who knows nothing of Kepler, psittacosis, the pancreas, or Hannibal can conclude nothing about Breckinridge from the story in the example above, because he cannot tell anything about the apparent intentions of the author in using apparent facts to make the story more realistic. And, of course, whatever small amount of justification one can have in believing a truth-claim that has originated, for a particular agent, in a work of fiction, is always fallible—precisely because the author is at liberty to make anything true in whatever fiction he creates—and so any truth-claim one comes across in fiction must be confirmed outside the fiction to count as anything approaching knowledge.

There's another aspect to this process that also makes any conclusions drawn in this manner susceptible to mistakes, although this aspect is not about the fictionality of the origin of beliefs. I think that this is a fallibility that any purported knowledge has—it is a fallibility that makes knowledge susceptible to skeptical worries, should those be raised. It isn't a flaw of foundherentism through which this susceptibility is introduced, either; I'd argue that any theory of knowledge that purports to be impervious to skeptical attacks is flawed because it is unrealistic. I follow Dr. Haack in thinking that human knowledge *is* fallible, and I think that a theory of knowledge ought to make it clear how and why that is, instead of trying to hang on to some absolute certainty in the face of skeptical attack. As Dr. Haack writes, a fallibilist does not need indubitability in order to be able to maintain that "some beliefs are better warranted than others, [and] some cognitive methods more reliable than others".⁴ And being able to prefer some reasoning over others without demanding absolute certainty reflects how people actually work; everyone that is both healthy and hon-

est has held beliefs at some time or other that they have since come to believe were incorrect, but this should not lead anyone to conclude that he is incapable of grasping the facts of the matter about anything. Indeed, a person's ability to identify and correct errors in his own reasoning should make him *more*, not less, certain of his remaining considered beliefs.

To my mind, the least fallible part of human knowledge is the part that is most directly attached to experience. Such knowledge is certainly fallible, but, on the whole, when the insides of their heads are not being messed with by drugs, disease, evil geniuses, or other tricksters, humans do a pretty good job of navigating the physical world. Humans are less good, I would argue, about sorting out exactly what they believe. It is impossible, for example, to have the entire set of one's beliefs in one's conscious mind at once. This creates the possibility for there to be contradictory beliefs in one mind, which may have been arrived at independently and reasonably. It also means that beliefs can be overlooked or ignored when it is convenient to do so.

Foundherentism is not coherentism; it admits much more easily of the rejection and elimination of beliefs that are found to be false without disturbing the whole belief set, because, like the strands in a spider's web, each belief is supported by each one of the other relevant beliefs; if one is bad and has to drop out, the others are still there. So the mere existence of a pair of contradictory beliefs does not have the same effect for the foundherentist as it does for the coherentist; on the coherentist framework, a contradictory belief pair casts the whole structure into doubt. Even a foundherentist, though, would have problems with a tendency of a knower to overlook or ignore (or, perish the thought, rewrite or create) beliefs. And this is as it should be: overlooking, ignoring, rewriting, or creating beliefs out of thin air, so to speak, makes it not just possible but likely that contradictions will be created—an abundance of them.

Because fiction can pull so firmly on the heartstrings, one might suspect that it is particularly liable to induce agents to commit some of these epistemic errors. I think this suspicion is right, in part—I think that fiction can make people want to believe propositions, and because fiction can feel like experiential evidence, it can give people enough of what looks like reasons to get them to actually believe said propositions. This is a strength of fiction, in fact; it can force a person to see things from a perspective that is not his own, and introduce to his mind ideas that he might otherwise never entertain. Fiction can, then, lead him to believe ideas that contradict some of his other preexisting beliefs. But, if he is introspective enough to notice these contradictions and resolve them, it can also lead him to believe that some of his prior beliefs were mistaken, which can be a good thing.

NOTES

1. In *Putting Philosophy to Work: Inquiry and its Place in Culture—Essays on Science, Religion, Law, Literature, and Life*, 2008.
2. *Remember WENN*, episode #12, “Popping the Question”
3. My personal taste in fiction runs perhaps a little more towards American television of a few decades back than Dr. Haack would prefer. An example pretty similar to the Breckenridge quiz show might be made out of the Parisian sewer system from *Les Misérables*; given the context and the author (his other writings, his tone, and the import of the novel), I think one is fairly justified in believing what *Les Misérables* describes about Parisian sewers. I don't know that this part of *Les Misérables* is even accurately called fiction.
4. “Fallibilism and Necessity”, *Synthese* 41, 1979, 58.

Truth as Representation, Not Will: How Peirce's Modest Correspondence Theory Can Complement Haack's Innocent Realism

ROBERT LANE

Web: https://www.westga.edu/administration/profile.php?emp_id=410

For more than a quarter century, in numerous lectures, articles and books, Susan Haack has presented enlightening accounts of the concepts of reality and truth. Her Innocent Realism, briefly put, is the idea that there is *one* real world, meaning (negatively) that there is *only* one real world and (positively) that that world is *integrated* (Haack 2014b, p. 89).¹ She has also provided a compelling explanation of the various ways in which truth is valuable: epistemically, instrumentally, and morally (Haack 1998a, p. 21). Some of Haack's work on these issues has been influenced by Charles Peirce. For example, she has provided detailed explanations and extensions of what Peirce called "the first rule of reason"—that in order to learn, one must desire to learn—and of what he called "genuine inquiry"—investigation motivated by the desire to learn the truth, whatever that truth might happen to be (e.g., in Haack 1997 and Haack 2014a).

Like Peirce, Haack understands the concept of truth to be importantly connected to that of reality; she maintains that in order for truth to be valuable, to be worth pursuing, the idea of truth has to satisfy what she calls the Aristotelian Insight—Aristotle's dictum that "to say of what is that it is, and of what is not that it is not, is true" (1998a, pp. 21–23). On her view, this Insight conveys the one and only legitimate truth *concept*—a true proposition is one that says how things really are; and Haack has argued that, despite the fact that there is only one legitimate concept of truth, there are many *truths*—i.e., many different kinds of true proposition: truths of natural science, of social science, of mathematics, etc. (Haack 2005).

Still, Haack doesn't connect the ideas of truth and reality in exactly the same way as Peirce. She notes that Peirce gives the idea of reality "a pragmat[ic]ist twist, suggesting that, at the third and highest grade of clarity, the real is the object of the Final Opinion in terms of which he defines truth—a turn in which [she says she will] not follow him" (Haack 2016a, p. 43n59; the first bracketed insertion is Haack's).² As some commentators, including Haack (1976, pp. 232 ff.), have recognized, Peirce's account of truth is not limited to talk about "the Final Opinion," the opinion that would be permanently settled by sufficient investigation. Peirce provided what I have elsewhere called a *dual-aspect account of truth* on which a true proposition is *both* the content of a belief that would be permanently "fixed" by investigation *and* one that represents reality (Lane 2018a, chapter 1).³

So: Peirce was *some* kind of correspondence theorist. But Haack has hesitated to inflate the Aristotelian Insight into a full-blown correspondence approach to truth, Peircean or otherwise. On her view, some formulations

of the correspondence theory have *teeth*—they are very metaphysically ambitious—while others do not (Haack 1987, p.288), and neither toothy nor toothless forms of the theory are satisfying.

[F]or all its seductiveness the correspondence idea is misleading. *Either*, as in Russell and Wittgenstein, it has real metaphysical teeth, but draws us into an ontology of logically ultimate objects; or its “facts” are nothing more than the shadows of true propositions and its “correspondence” nothing more than a metaphysically pretentious way of saying “really, in fact,” and it gives us only the illusion of explanation. (Haack 2007b, p.235)

Haack’s understanding of “real” is adapted from Peirce’s definition of the word: “what makes something real ... is that it is independent of what you or I or anyone thinks about it” (Haack 2016a, p.49); but she says that the question how we should understand the word “about” in that definition is one of “many details [of her Innocent Realism that] remain to be worked out” (ibid., p.54).

One of my goals in this essay is to describe a way in which that detail might be worked out, and my motives—in addition to showing appreciation for Haack’s work and suggesting a way in which it might be supplemented—are as follows. First, I have been thinking recently about Bertrand Russell’s criticisms of William James’s and F. C. S. Schiller’s versions of pragmatism and about the kind of connection between reality and truth that a pragmatist theory must posit in order to withstand such criticisms. Russell attributed to James and Schiller what I call *willful pragmatism*: a willful pragmatist account of truth is one that omits talk of correspondence or representation and instead understands truth in terms of success, accomplishing a goal, bringing about some desired outcome. On Russell’s account, Schiller’s pragmatism in particular emphasizes “the primacy of the Will. ... There is no such thing as ‘mere’ knowing, in which we passively apprehend the nature of a merely ‘given’ object. All knowing is bound up with doing, and everything that we know has been in some degree altered by our agency” (Russell 1992 [1909], pp.277–278).⁴ Russell went on to argue that

the excessive individualism of the pragmatic theory of truth is inherently connected with the appeal to force. ... If ... the only way of discovering which of [a group of] disputants is in the right is to wait and see which of them is successful, there is no longer any principle except force by which the issue can be decided. ... [Pragmatism], therefore, although it begins with liberty and toleration, develops, by inherent necessity, into the appeal to force and the arbitrament of the big battalions. (Ibid., p.283)

The crux of Russell’s criticism is this: if the only standard of truth is success, then the only method of decisively settling disagreements about whether a claim is true is, not rational debate, but violence. He even went so far as to cite James’s pragmatism as a philosophical antecedent of fascism (Russell 1996 [1935], p.434).⁵

Another reason that I have been concerned with how a pragmatist can articulate the connection between the ideas of reality and truth is that some contemporary pragmatists have distanced pragmatism about truth from correspondence accounts in general and from representationalist accounts in particular. Haack does not err in this way; she recognizes that classical pragmatist accounts of truth—Peirce’s, James’s, and Dewey’s—while “stressing ... that [the truth of beliefs] is manifested by the beliefs’ survival of test by experience,” nonetheless assume “that the truth of a belief derives from its correspondence with reality” (1978, p.86; see also Haack 1976). But Richard Rorty (1990) characterized pragmatism as “anti-representationalism,” and more recently Michael Williams has described anti-representationalism as “[t]he heart of pragmatism” (2013, p.129). Even some Peirceans have made moves in this direction. Cheryl Misak, who acknowledges the realist tenor of Peirce’s account of truth, has nonetheless described pragmatism as “ar[ising] out of a rejection of the correspondence theory” (Misak 2016, p.284). Misak reads Peirce as defending a view of truth in which success is a key idea: “Peirce thought a belief’s consequences for action are central

not only to constituting it but also to determining its normative status. For the fundamental norm of belief is truth, and, for Peirce, roughly, beliefs are true if they would lead to successful action and false if they would not” (Misak 2016, p.26). This isn’t so extreme as to warrant Haack’s label “vulgar pragmatism” (2009, chapter 9)—maybe we should call it “indelicate Peirceanism”? Regardless, this reading of Peirce positions his views much too close to willful pragmatism.⁶

Generally speaking, the more tenuous a given philosophical theory makes the connection between the ideas of truth and reality, the more susceptible that theory is to Russellian criticisms. It is one thing—a good thing!—for a pragmatist to say that there is a real world, that inquirers can and frequently do have true beliefs about it, and that the ideas of truth and reality are intimately connected. But it’s another thing—an even better thing!—to be able to say in at least rough terms what that connection is and thus to better fortify their pragmatic accounts of truth against Russellian criticisms. What I am now going to suggest is that Peirce’s own approach to these issues is sufficiently realist to withstand Russellian criticisms and that it can also get around Haack’s concerns about toothy correspondence theories, on the one hand, and toothless ones on the other.

So how might we draw upon Peirce’s work to formulate a satisfying explanation of the “about” in Haack’s Peircean account of reality? Let’s start by recognizing that Peirce understood the “about” in his own definition of “real” as having to do with representation: “A real thing is something whose characters are independent of how any representation represents it to be. Independent, therefore, of how any number of men think it to be” (W2:439, 1870). What’s more, Peirce’s theory of truth is a form of *representationalist* pragmatism. As I’ve already mentioned, Peirce characterized a true belief both as one that would be permanently fixed as a result of sufficient investigation *and* as one that represents reality.⁷ An even perfunctory examination of his statements about truth should dispel any doubts about this. One of my favorites is this: “A proposition has a subject (or set of subjects) and a predicate. The subject is a sign; the predicate is a sign; and the proposition is a sign that the predicate is a sign of that of which the subject is a sign. If it be so, it is true” (CP 5.553, EP 2:379, 1906). As Haack has rightly noted, “Peirce’s pioneering work in semiotics, and his conception of truth as concordance with the ultimate representation, puts him about as far from ‘anti-representationalism’ as it is possible to be” (Haack 1998b, p.64).⁸

It is the representationalist aspect of Peirce’s account of truth that (to use Haack’s apt expression) “anchors” truth “to the world” (2005, p.99). Peirce seems to have understood that representationalist aspect to provide a verbal definition of “true,” something that one must be able to articulate in order for one’s idea of truth to be clear to the second degree (Lane 2018a, pp.46–47). Thus, on his view, a true proposition is *by definition* one that is anchored to the world by way of the relation of representation.⁹ Both the representationalist aspect and the investigative aspect of his account of truth are fully present in 1877’s “The Fixation of Belief.” Contrary to the received interpretation of his views, Peirce neither revised nor even added to his account of truth in that article’s sequel, 1878’s “How to Make Our Ideas Clear.” As I argue elsewhere (Lane 2018a, pp.38–39), it was only in around 1905 that he began thinking about the investigative aspect as the result of applying the Pragmatic Maxim to the idea of truth. That was *not* how he presented it in “How to Make Our Ideas Clear”; there he used it in support of his pragmatic clarification of the idea of *reality*: “The opinion which is fated to be ultimately agreed to by all who investigate, is what we mean by the truth, and the object represented in this opinion is the real” (W 3:273, 1878). So his pragmatic clarification of the idea of reality depends on the investigative aspect of his account of truth.¹⁰ It is in our investigative practices—our attempts to dispel doubt and settle belief by way of communal, rational, experiential interaction with what he called “the external permanency” (W 3:253, 1877)—that we are to find the pragmatic import of the claim that something is real. Here it is important to distinguish Peirce’s definition of “real”—that which is independent of what anyone thinks about it—from his definition of “external”—that which is independent of what anyone thinks, about that very thing or anything else (see, e.g., W 3:271, 1878). Given these definitions, everything external—“the external permanency”—is real, but there might be reals that are not external.¹¹

Peirce sometimes characterized reality in terms of *facts*, e.g., “[a] fact is so much of the reality as is represented in a single *proposition*. If a proposition is true, that which it represents is a *fact*” (CP 6.67, RLT p.198, 1898). And on at least one occasion he wrote that each fact has a structure: “What we call a ‘fact’ is something having the structure of a proposition, but supposed to be an element of the very universe itself” (EP 2:304, 1904).¹² Unlike the Wittgenstein of the *Tractatus*, Peirce did not maintain that a given fact has a structure that is independent of how it might ever be represented, and he did not maintain that a proposition must be isomorphic with a representation-independent ontological structure in order to be true. On Peirce’s approach, the world does not come carved up into logically-structured facts that propositions must then mirror in order to represent them. So Peirce is not giving us an example of the toothy metaphysics that Haack has abjured.

On the other hand, this might seem like the sort of toothless account of facts that she has also rejected, one on which facts are nothing but propositional shadows. If we take Peirce’s descriptions of facts as verbal definitions of the word “fact”—as providing only a second degree of clarity with regard to the idea of a fact—then that might be a fair criticism. And Peirce himself might have understood that account of facts in exactly that way; part of his *Century Dictionary* definition of the term is as follows: “that in the real world agreement or disagreement with which makes a proposition true or false.”¹³ But it seems to me that we can extend Peirce’s pragmatic treatment of the idea of reality to the related idea of a fact in order to arrive at an account of facts, and of correspondence with the facts, that navigates between toothy Tractarianism and toothless shadowiness, and that does so in a way that might helpfully augment Haack’s accounts of reality and truth. Here’s how.

Again, Peirce pragmatically clarified the idea of reality as follows: “*x* is real” means that sufficient investigation would permanently settle beliefs the contents of which are propositions that represent *x*. Pragmatically clarified along similar lines, “it is a fact that *x* is *F*” means that sufficient investigation—communal, rational, experiential interaction with the world that is external to the minds of all “scientific intelligences” (CP 2.227, c.1897)—would permanently settle the belief the propositional content of which represents *x* as being *F*. Note that the investigative aspect of the truth of a proposition is primary relative to the pragmatic meaning of the claim that what that proposition represents is a fact; it is primary in the sense that we understand the pragmatic import of the claim that it is a fact that *x* is *F* in terms of what investigative interaction with the external world would lead us to believe. This does not imply that investigators give structure to the facts by thinking that they are one way rather than another; a real fact is, by the very definition of the word “real,” independent of how anyone actually represents it to be. Rather, this Peircean view of facts implies that what we would end up believing as a result of experiencing the external world and jointly reasoning about our respective experiences—how we would end up representing the world, and thus the structure of the propositions that we would use to represent it—shows us how it *really* is. And that the facts *really are* structured in that way helps to explain why investigation would eventually settle beliefs the contents of which have that structure. The world forces certain beliefs upon us; the propositional contents of those beliefs have certain structures; and those structures reveal something about reality, something that helps explain why investigation tends in one direction rather than in another.

In 1906 Peirce wrote that “[a] *state of things* is an abstract constituent part of reality, of such a nature that a proposition is needed to represent it. ... A *fact* is so highly a prescissively abstract state of things, that it can be wholly represented in a simple proposition” (CP 5.549, EP 2:378). That might sound objectionably *Tractarian*: it might suggest the idea of elementary propositions mirroring atomic facts. But Peirce went on to say that “the term ‘simple,’ here, has no absolute meaning, but is merely a comparative expression” (ibid.). Some facts are simpler than others, which is why the structures of some true propositions are simpler than those of other true propositions. But there need not be ultimately simple logical atoms represented by absolutely elementary propositions.

Importantly, this approach to explaining the relationship between truth and reality need not be limited to any specific subject matter or area of investigation. It applies just as well to the physical and social sciences, to mathematics and philosophy, to ethics and the law—and it applies regardless of the logical form of

the propositions that are the contents of our beliefs—be they simple subject-predicate propositions, or conditionals, or disjunctions, etc. While Peirce *did* sometimes explain the truth of a propositional sign in terms of object signs and predicate signs, this does not preclude there being true propositions of other than simple subject-predicate form. On his view, any proposition whatsoever can be analyzed so as to have one or more subject terms—signs that either indexically indicate something in the real world or that serve as rules for arriving at such indexical signs—and a predicate term—a sign that calls to mind some image and that the propositional sign as a whole indicates is to be taken as a sign of the object(s) of the subject term(s) (see W 2:26, 1867; CP 5.542, c.1902; CP 2.318–320, EP 2:281–282, 1903).¹⁴

All of this indicates one important way in which Peirce's approach is in harmony with Haack's. Here is a lengthier statement of her Innocent Realism:

There is one real world ... a world largely, but not entirely, independent of us and our actions, beliefs, etc. This one real world is, manifestly, very heterogeneous—including ... particulars *and* generals: natural objects, stuff, phenomena, kinds, and laws; a vast array of human (and some animal) artifacts; mental states and processes, including our thoughts, dreams, etc.; social institutions, roles, rules, and norms; human languages and other sign-systems; a plethora of scientific, mathematical, and philosophical theories (and, in at least some instances, their objects); works of history and art criticism, etc.; myths, legends, and works of fiction, and the characters and places that figure in them. But ... this heterogeneity is not the end of the story; the world is also ... integrated. The one real world of Innocent Realism is, to borrow James's marvelously Janus-faced phrase, a pluralistic universe. (Haack 2016a, p.41; the reference is to James 1909)

The Peircean account of facts that I am suggesting allows for just this sort of pluralism. It places no limit on the kinds of fact there might be or the kinds of true proposition that might represent them, and so it is consistent with Haack's view that, although there is only one legitimate truth *concept* (that which is captured in the Aristotelian Insight), there are multiple kinds of true *proposition*: "particular empirical claims, scientific theories, historical propositions, mathematical theorems, logical principles, textual interpretations, statements about what a person wants or believes or intends, statements about grammatical, social, or legal roles and rules, etc., etc." (Haack 2005, p.88). Unlike Wittgenstein's toothy correspondence theory, this does not require that the world be a homogeneous expanse of logical atoms.

To sum up: The real is by definition that which is as it is whether or not anyone represents it to be that way, and the true is by definition a matter of representation. Investigation—i.e., "the method of science," of communal, rational, experiential interaction with the external world—would permanently settle some beliefs in the minds of inquirers, and the contents of those beliefs are true, i.e., they represent the real. The propositional sign that is the content of a true belief represents a fact. That fact shares the structure of that propositional sign, and this helps to explain why the sign has that structure: our experiential interactions with real facts lead us to have some beliefs rather than others, and the propositional contents of those beliefs have the specific structures they do because the real facts that give rise to those beliefs are really structured in a specific way. There are no disciplinary limits to investigation, no subject matter to which investigation cannot be applied, no fixed list of structures that facts can possess or of kinds of fact that there are, and thus no fixed list of structures that might be had by true propositions.

I have offered a modestly explanatory account of facts, according to which they are neither "the shadows of true propositions" nor arrangements of logical atoms; it is, I think, a heretofore unrecognized member of the family of correspondence theories. And being a form of representationalist pragmatism about truth, it steers clear of the aspects of pragmatism about which Russell fretted—it assumes that there is a real world that provides the norm for our beliefs, that genuine inquirers can settle our disagreements through experiencing that world and then jointly reasoning about our respective experiences rather than through the use of force. It recognizes facts and insists that the beliefs that represent them are *true*, i.e., that "there is something that is SO, no matter if there be an overwhelming vote against it"—and as Peirce pointed out, the

very question whether there *is* such a thing as a true belief “is a question of fact [that] experience alone”—not *a priori* arguments—“can settle” (CP 2.135, 137, 1902).

Haack has justifiably expressed concern about what Peirce called the problem of buried secrets, “that statements about the past which would not be settled however long inquiry were to continue must be deemed neither true nor false” (Haack 1998a, p.22). Peirce wrestled with this problem, trying out at least three different solutions to it at various times (Lane 2018a, chapter 6), and none of them is clearly adequate. Perhaps the best we can say at present is that the truth of such statements has no pragmatic bearing for us that we can envision or articulate at this time. But we should remember that we have not yet necessarily attained the maximum degree of clearness when it comes to our ideas of reality and truth. Each level of clearness is itself a matter of degree, and as Peirce wrote late in his life, there is no reason why the different levels cannot be further developed simultaneously with regard to the same idea (CP 8.218, 1910). So, for example, there is no reason why increasing clearness at the third level of our idea of reality should not lead us to improve our verbal definitions of the words “real” and “true” and thereby increase the second-level clarity of those ideas.

Finally, as Haack has admonished us, “that we have not yet devised a completely satisfactory and fully general statement of the Aristotelian Insight is no reason to conclude that it isn’t an insight at all” (1998a, pp.22–23). If our ideas of reality and truth are not yet maximally clear (and who’s to say that there even *is* an upper limit to clarity with regard to those, or any, ideas), what *is* clear, I hope, is that pragmatist accounts of those ideas must anchor truth to the world in order to avoid Russellian criticisms. With or without the Peircean supplement that I have suggested, Haack’s views of truth and reality do just that.

NOTES

1. Haack has developed Innocent Realism across a number of papers, beginning in 1996. See Haack 1996, 2002, 2007a, 2007b, 2013, 2014b, 2016a, 2016b, and 2018.
2. Here Haack is alluding to Peirce’s account, most famously presented in 1878’s “How to Make Our Ideas Clear,” of the three different degrees or “grades” of clarity that a given idea can have for a given thinker. If an idea of mine is clear to the first degree, then I have a strong sense of recognition—“a subjective feeling of mastery”—whenever I encounter the idea. If it is clear to the second degree, then I can provide a verbal definition of the word corresponding to the idea. Peirce’s so-called Pragmatic Maxim tells us what is required for a belief to be clear to the third degree of clarity: “Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object” (W 3:266, 1878). So if I have an idea that is clear to the third degree, I have a concept of the “practical bearings” of the things to which the idea applies. Peirce’s examples indicate that by “practical bearings” he had in mind the experiential consequences that would result were someone to interact with those things.
3. The dual-aspect account of truth that I attribute to Peirce is importantly different than the “double aspect theory of truth” that Mark Migotti (1998) attributes to him.
4. Haack describes Schiller’s concept of truth as being a matter of “practical working; it is human truth, incapable of coming into being without human effort and agency” (introduction to Haack 2006, p.44). And since Schiller’s pragmatism doesn’t divorce truth from reality, it makes not just truth but also reality dependent on us: “As truth is dependent on us, relative to our purposes, so is reality; facts are not discovered but selected, even made, by us” (ibid., p.45).
5. Cheryl Misak says she arrived at a view somewhat like Russell’s before learning that he had gotten there first (Misak 2016, p.111n18). Russell expressed the point like this: “In the absence of any standard of truth other than success, it seems evident that [on James’s account of truth] the familiar methods of the struggle for existence must be applied to the elucidation of difficult questions, and that ironclads and Maxim guns must be the ultimate arbiters of metaphysical truth” (Russell 1992 [1909], p.282; and he was not alone in seeing a connection between pragmatism and fascism. In an April 1926 interview with the Sunday Times of London, Benito Mussolini himself cited

James's pragmatism as an influence: "The pragmatism of William James was of great use to me in my political career. James taught me that an action should be judged rather by its results than by its doctrinary basis. I learnt of [sic] James that faith in action, that ardent will to live and fight, to which Fascism owes a great part of its success. . . . For me the essential was to act" (quoted in Perry 1935, v.2 p.575, and in Livingston 2016, p.35). A few months later Mussolini again cited James as an influence in an interview with *New York Times Magazine* (see Livingston 2016, pp.35, 179n55). As Livingston recounts, the later interview motivated Horace Kallen to interview Mussolini about James's influence. But when Mussolini was unable to name a single work of James's that he had read, Kallen "conclude[d] that the dictator 'was clearly far more aware of William James's name than his teachings'" (Livingston 2016, p.36; Livingston quotes from Kallen 1927, p.212). For more on the alleged influence of James's pragmatism on Mussolini, as well as on its clear influence on the Italian pragmatists Papini and Prezzolini, see chapter 2 of Livingston 2016.

6. Elsewhere I have argued that one sort of success does play a role in Peirce's account, but contra Misak, it is a very specific sort of success—success in dispelling doubt and permanently "fixing" belief. See Lane 2018a, pp.34–37, and Lane 2018b, pp.403–404.
7. Note the emphasis on *would*—were this aspect of his account to instead characterize truth in terms of what *will* be believed, it would be less realistic and thus tend toward *willful* pragmatism.
8. Although Peirce did on occasion describe a true belief as one that accords with the ultimate representation, he more frequently described it as one that accords with reality; and, after all, if it accords with the ultimate representation, then, on the assumption that what's represented in the ultimate representation is reality, a true belief also represents reality.
9. As I have put the point elsewhere, "any account of truth that denies that truth amounts to representation of the real world is guilty of changing the subject, of providing an account of something other than truth" (Lane 2018a, p.50).
10. Peirce could not pragmatically clarify the idea of the real in a way that depends on the other aspect of his account of truth—the representative aspect—since that aspect is itself dependent on the idea of reality. See Lane 2018a, pp.42–43.
11. On Peirce's view, reals that are not external are internal, items and events that are dependent on the thinking of some mind or other. For more on Peirce's treatment of these and related concepts, see Lane 2018a, pp.1–7.
12. Here I am correcting a mistake I made when I wrote that on Peirce's view a given "fact need not share a form with the proposition that represents it" (Lane 2018b, p.401). As I explain here, I now understand Peirce to hold that while a fact does share a form with a true proposition, that form is not one that obtains independently of how the fact might be represented. Atkins (2016, p.1176) quotes EP 2:304 and notes that Peirce is "not explicit about how facts and propositions are structurally isomorphic. Once we do understand how they are structurally isomorphic, we will find that Peirce has a fairly straightforward argument against the claim that there are facts beyond the ken of discovery and so truths beyond the ken of discovery."
13. The full definition is: "A real state of things, as distinguished from a statement or belief; that in the real world agreement or disagreement with which makes a proposition true or false; a real inherence of an attribute in a substance, corresponding to the relation between the predicate and the subject of a proposition" (CD p.2112, 1889–1891). See CP 1.427, c.1896 for a lengthy treatment of fact as part of the triad quality/fact/law.
14. Peirce sometimes compares the image called to mind by a propositional predicate to a "composite photograph," e.g.: "The predicate [of a proposition] is a word or phrase which will call up in the memory or imagination of the interpreter images of things such as he has seen or imagined and may see again. Thus, 'gave' is the predicate of the [proposition 'Anthony gave a ring to Cleopatra'] and it conveys its meaning because the interpreter has had many experiences in which gifts were made; and a sort of composite photograph of them appears in his imagination" (CP 5.542, c.1902; see also CP 2.435, c.1893; CP 3.621, 1901; CP 2.317, EP 2:281, 1903; CP 7.634, 1903; CP 4.447, c.1903).

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Perception, Abduction, and Foundherentism

AARON BRUCE WILSON

Web: <https://aaronbrucewilson.weebly.com>

INTRODUCTION

Susan Haack's Foundherentism (1993, 2009) is her best known and deservedly praised contribution to modern epistemology. It is a *dual aspect* theory of epistemic justification that treats both experiential anchoring and explanatory coherence with other beliefs as necessary and only jointly sufficient for the justification of any belief.¹ It is not sufficient that a belief is based on sensory experience in some right sort of way, and there is no class of beliefs that are non-inferentially justified by experience alone (or non-inferentially justified by anything else). Likewise, integration or coherence with other beliefs is insufficient; our beliefs also need to be connected to the world in some right sort of way to be justified to some degree.

Haack does a sufficient job explaining why experiential anchoring and explanatory coherence are necessary for the justification of any belief, though her explanation is more multifaceted than I can recount here. But to offer some motivation: first, as our beliefs are about the world, or about things existing independently of our beliefs about them, whether or not a belief is a *response* to the world, an *effect* of it, would seem to figure into some part of that belief's epistemic status. Even Bonjour (1985) recognizes this with his "observation requirement," which Haack argues shifts his theory toward Foundherentism (1993, 60). Yet, regardless of its connection to the world, it seems that any given belief can be directly supported or opposed by other beliefs that reinforce one another and provide an increasingly comprehensive explanation of the world. One might indeed have a veridical perception of a surreal scene defying all accepted physical law, yet one would seem hardly justified in believing what they saw. Certainly, if we can accommodate both experiential anchoring and explanatory coherence in our account of epistemic justification, it would seem unwise not to do so. And why refer to this combined account by anything other than Haack's portmanteau?

Not surprisingly, Foundherentism seems particularly suited as an account of epistemic justification that can be conjoined with the epistemological views we find in Charles S. Peirce—Haack's "intellectual grandfather."² Writing many decades before Gettier, Peirce was more concerned with accounting for the nature of signification/representation ("speculative grammar"), for different forms of inference ("critic"), and for the norms by which inquiry ought to be conducted ("methodeutic") than he was with accounting for the structure of epistemic justification.³ However, the concerns that modern theories of epistemic justification address can be motivated within the context of Peirce's philosophy.

In particular, I argue that Foundherentism can fill certain lacunae in Peirce's account of perception and, relatedly, in his account of abduction, both key parts of his epistemology. The lacunae concern the *justification* of perception and of abduction, and these are subjects of scholarly controversy. While Peirce appears to reject the idea that uncontrollable processes (like those in perception and, as I argue, in abduction) require any sort of appraisal, there are good reasons to reject this rejection and consider how perceptual judgments can amount to knowledge and how abductive inferences can result in pursuit-worthy hypotheses.

In what follows, I take a critical approach to Peirce, focusing primarily on the accounts of perception and abduction found in his 1903 Harvard lectures on pragmatism (henceforth, *the Lectures*), though I do not limit my textual resources to those lectures, as it is in these lectures that Peirce provides his most sustained single account of knowledge in which both perception and abduction figure prominently. In the first section, I consider his three “cotary” propositions of pragmatism, with emphasis on the third one, and I draw out a number of problems in Peirce's account, particularly with his claim that perceptual judgments are “absolutely beyond criticism.” Having good reasons to reject that claim, we make room in Peirce's account for a notion of perceptual *justification*.

In the second section, I examine the exact ways in which Peirce regards perception and abduction as similar and as different. Here I argue that if he regards perceptual judgments to have, like the conclusions of abductive inferences, the epistemic status of hypotheses (he does not say whether or not he does), then it is unclear how, within Peirce's account, we can have knowledge. If perceptual judgments have the epistemic status of hypothesis, testing a hypothesis against experience would amount to nothing but the generation of more hypotheses. Whether or not this is his view, there is a need to provide an account of perceptual justification, and Foundherentism fits well with Peirce's emphasis on the sensory and on the interpretive aspects of perception. After defending an account of Peircean abduction in section 3, the final section presents more details of Haack's Foundherentist account and applies them to explain not only perceptual justification but also, and analogously, the justification of the selection of the hypothesis in abductive inference.

I. PROBLEMS IN PEIRCE'S ACCOUNT OF PERCEPTION

When Peirce returned to developing his pragmatism after the turn of the (twentieth) century, he also returned to developing his views on perception. An account of perception would become one of the pillars of his later pragmatism, as we find most clearly in the 1903 Harvard lectures (*the Lectures*). There, Peirce claims that, for the pragmatist, perception is one of the “gates” through which the elements of any concept must pass in order for the concept to be “authorized by reason.”⁴ He also defends three propositions concerning perception as “whetstones” for pragmatism, sharpening its meaning. These propositions are:

1. There is no element of any concept that is not first in a perceptual judgment.⁵
2. General elements, or elements of *thirdness*, are directly perceived.⁶
3. Abductive inference shades into perceptual judgment “without any sharp line of demarcation between them,” such that perceptual judgments “are to be regarded as an extreme case of abductive inferences, from which they differ in being *absolutely beyond criticism*.”⁷

These “cotary propositions of pragmatism” have been analyzed by me and others elsewhere.⁸ I draw focus to them here because they present peculiar problems in the later Peirce.

In the third proposition, Peirce claims that perceptual judgments are “absolutely beyond criticism.” If we take this in conjunction with the first proposition, Peirce can be read, not unreasonably, as endorsing an empiricist form of *Foundationalism*, on which perceptual judgments comprise an *in corrigible* set of beliefs from which the rest of our knowledge is derived. Being “absolutely beyond criticism” suggests being incorrigible, for if a judgment were capable of being corrected, then it would also seem capable of being criticized. Perhaps Peirce regards perceptual judgments as first-person appearance reports, such as “there appears to be a yellow chair,” or perhaps he regards the subjects of perception as infallible authorities on

the contents of their own perceptions. Here lies an initial problem: *virtually all Peirce specialists would rebuff such a reading of Peirce*. Even non-specialists would not expect such Cartesianism from a philosopher whom they may know for having repudiated major elements of Cartesian philosophy.⁹

These specialists and non-specialist are vindicated by other passages indicating that Peirce holds perceptual judgments to be corrigible or fallible. For instance, in the same paragraph in which he claims that they are absolutely beyond criticism, he goes on to say that, with perceptual judgments, “the abductive suggestion comes to us like a flash. It is an act of insight, although of extremely *fallible* insight” (5.181, EP2:227; my emphasis). Here he seems to refer, not to abductive inferences generally (on which I will focus later), but to perceptual judgments in particular. However, the problem then becomes explaining how Peirce could plausibly regard perceptual judgments to be beyond criticism. He must be using “criticism” in a sense where something can be subject to correction yet *not* subject to criticism.

I am able to find, in Peirce, three different senses in which perceptual judgments are “absolutely beyond criticism” that have nothing to do with incorrigibility or infallibility. Yet, as I will explain, none of these senses entirely solves the problem.

Another indication that Peirce regards perceptual judgments as fallible or corrigible appears a year earlier, in a draft of what would have been the second chapter of the *Minute Logic*. He claims that “[perceptual judgments] may be downright untrue to the percept.” (2.141, 1902). However, he goes to explain...

... But I have no means whatever of criticizing, correcting or recombining them, except that I can collect new perceptual [judgments] relating to new percepts, and on that basis may infer that there must have been some error in the former reports[.]” (Ibid.)¹⁰

A perceptual judgment can be untrue, but whether or not *it is* can be known only by inference from other perceptual judgments. Moreover, *that* we can know perceptual errors only by inference from other perceptions even seems entailed by the first cotary proposition, that judgments can have no conceptual elements that are not derived from perceptual judgments. If that is so, then we cannot “get behind” perceptual judgments altogether to check the veridicality of any perception. We find a similar argument in the 1903 manuscript on perception and telepathy (R 881); Peirce writes:

We know nothing about the percept otherwise than by the perceptual judgment, excepting that we feel the blow of it[.] ... But the moment we fix our minds upon it and think the least thing about the percept, it is the perceptual judgment that tells us what we so “perceive.” (7.643, 1903)

The first sense, then, in which perceptual judgments are “absolutely beyond criticism” though are not incorrigible, is that we have no grounds on which to criticize their accuracy *as a whole class of judgments*. Any such criticism will presuppose the truth of *some* perceptual judgments. This fact entails neither that any given perceptual judgment is true nor that perceptual judgments generally are true.

A second sense is found back in *the Lectures*, where Peirce makes perhaps another surprising claim, that perceptual judgments are not actually *truth-apt*, but instead can only be more or less “veracious” depending on the “effort made” in the act of observation in which the judgment occurs:

In the first place, all our knowledge rests upon perceptual judgments. These are necessarily veracious in greater or less degree according to the effort made, but there is no meaning in saying that they have any other truth than veracity, since a perceptual judgment can never be repeated. At most we can say of a perceptual judgment is that its relation to other perceptual judgments is such as to permit a simple theory of the facts. I may judge that I see a clean white surface. But a moment later I may question whether the surface was really clean, and may look again more sharply. If this second more veracious judgment still asserts that I see a clean surface, the theory of the facts will be simpler than if, at my second look, I discern that the surface is soiled. Still, even in this last

case, I have no right to say that my first percept was that of a soiled surface. I absolutely have no testimony concerning it, except my perceptual judgment, and although that was careless and had no high degree of veracity, still I have to accept the only evidence in my possession. Now consider any other judgment I may make. That is a conclusion of inferences ultimately based on perceptual judgments, and since these are indisputable, all the truth which my judgment can have must consist in the logical correctness of those inferences. ... To say that a proposition is certainly true means simply that it never can be found out to be false, or in other words, that it is derived by logically correct arguments from veracious perceptual judgments. (5.142/EP2:204)

Here we find one of Peirce's epistemic accounts of truth, which although it can be regarded as a version of the "final opinion" account,¹¹ is unique among them for regarding "truth" as applying properly only to propositions *inferred* from perceptual judgments. If veraciousness concerns only the care, focus, or attention of observation with which a perceptual judgment occurs, then perceptual judgments might be "absolutely beyond criticism" in the sense that they are not even truth-apt.

However, perceptual judgments still can be criticized for failing to be veracious, and Peirce only denies that perceptual judgments are truth-apt in the *pragmatic sense* that goes beyond the mere *verbal definition* of "true" (of which he endorses a correspondence formulation at several places in his writings¹²). Moreover, the claim that perceptual judgments are not truth-apt because they are incapable of verification does not seem to appear elsewhere in his writings. As it also seems very implausible, we might consider it a fleeting mistake. The reason he says, in *the Lectures*, that we could never verify a singular perceptual judgment is that perceptual judgments represent only a momentary percept that vanishes the moment we look *again*. However, not only could we infer from our knowledge of anatomy, physics, etc. whether or not one really did perceive what the perceptual judgment represented at that moment, in the 1903 manuscript (R 881) he contradicts this claim where he argues that any given perceptual judgment represents, not only a momentary percept, but also the "ponecept" and the "antecept": the past percept and the future percept (7.648, 1903).

The third and primary sense in which Peirce claims that perceptual judgments are "absolutely beyond criticism" is that they are *uncontrollable*. While we can control *whether* we look, hear, and so on, we cannot control *what we judge* when we do look, hear, etc.. And Peirce regards controllability over a mental process as necessary for rational criticism of the agent in whom that process occurs. He argues that "to criticize" means "to apportion praise or blame" (5.55), where to criticize some action is to praise or blame the person who commits the action. But a person cannot be praised or blamed for actions over which they have no control—e.g., sub-personal cognitive processes. And Peirce repeatedly claims that processes resulting in perceptual judgments are immune to self-control:

It is idle to attempt to criticize by any logic that part of the performance of the intellect which draws that judgment from the percept. 7.198, 1901

All that I can mean by a perceptual judgment is a judgment absolutely forced upon my acceptance, and that by a process which I am utterly unable to control and consequently am unable to criticize." 5.157, 1903

While in the 1903 manuscript Peirce suggests that a perceptual judgment might be controlled indirectly by training (7.647), "for the purposes of logic" he continues to regard perceptual judgments as uncontrollable.

However, Peirce's use of "criticism" as referring to the apportioning of praise or blame also seems implausible, as he generalizes this sense of "criticism" to cover *all forms of evaluation*. Haack (1994) recognizes that Peirce limits the objects of criticism to self-controllable processes; but it is unclear whether she recog-

nizes that, for Peirce, to say anything is *good* or *bad* in any sense is to “criticize” it and to apportion praise or blame:

Now I say that taking the word “criticize” in the sense it bears in philosophy, that or apportioning praise and blame, it is perfectly idle to criticize anything over which you can exercise no sort of control. You may wisely criticize a reasoning, because the reasoner, in light of your criticism, will certainly go over his reasoning again and correct it if your blame of it was just. But to pronounce an involuntary operation of the mind *good* or *bad*, has no more sense than to pronounce the proportion of weights in which hydrogen and chlorine combine, that of 1 to 35.11 to be *good* or *bad*. I said it was idle; but in point of fact ‘nonsensical’ would have been an apter word. (5.55)

As with Peirce’s denial that perceptual judgments are truth-apt, we might also hesitate to accept this claim, that it is “nonsense” to evaluate uncontrollable processes. It is unclear whether, even during his time, “criticize” in philosophy only referred to the apportioning of praise or blame. Moreover, we obviously *can* make sense of pronouncing an involuntary operation good or bad. We often *do* pronounce involuntary operations good or bad; to use one of Peirce’s own examples, we might say that the growth of our hair or fingernails is *bad* when that growth exceeds a certain comfortable limit. Also, if we were to learn that the sun will explode tomorrow, it would be perfectly sensible to pronounce that *bad*, even though it would be uncontrollable.

While such attributions of value to objects or actions must be habitually related to some type of voluntary conduct in order for them to have *pragmatic* meaning, that conduct might be nothing but the willful *resignation* to an inevitable outcome. Thus, contrary to Peirce’s claim in *the Lectures*, we *can* evaluate the process by which perceptual judgments are formed with respect to our epistemic values or standards, despite our having no direct control over that process: it would be bad if these processes tended to result in false perceptual judgments, and it would be good if they tended to result in true perceptual judgments. Furthermore, we might recognize certain features of that process as affecting the *epistemic status* of such judgments. Peirce offers us a starting point here, with his claim that the perceptual process is structurally analogous to *abduction*.

II. ABDUCTION AND PERCEPTION: A FURTHER PROBLEM

Peirce’s concepts of abduction are subjects of on-going scholarly discussion and dispute. I say “concepts” because it is arguable that more than one concept of abduction can be found across Peirce’s writings. For instance, we can distinguish abduction as a *form of inference* and abduction as *step of inquiry*, the latter of which could include conduct not included in the former.¹³ Here, I am mainly interested in abduction as an analogy for the cognitive process resulting in a perceptual judgment, and, as I will explain, this seems particularly related to Peirce’s concept of abduction as an *instinct* for making good guesses. As I read Peirce, this “instinct” is generally coupled with, but could be decoupled from, the making of formal abductive inferences. As I do not think that “abduction” in Peirce must be only one exact type of thing, I do not think that *abduction as an instinct* and *abduction as an inference* are in conflict.¹⁴

Moreover, while I agree with most commentators that Peircean *abductive inference* is not *inference to the best explanation*, as the epistemic status of the abductive conclusion can never amount to knowledge—that is, *without further testing*—abductive inference still involves a selection process that employs *epistemic* criteria, and *not* just, as McKaughan (2008) and others have argued, *practical* criteria. The conclusion of an abductive inference is selected, at least in part, for characteristics related to its likelihood of being true. But regardless of its likelihood of being true, it retains the doxastic and epistemic status of a *hypothesis*: while it does not have sufficient justification to justify belief in it, it has sufficient justification to be accepted for “trial.” However, the selective process is not a *formal* part of the inference that appears in the abductive schema. Rather, the selective process consists in our “guess”—in the use of an instinctive capacity for em-

ploying learned rules or shortcuts to determine the likeliest explanation.¹⁵ This feature may carry over to perception, via the third cotary proposition of pragmatism, which I now turn to examine.

So far as I can tell, four claims regarding the relation between perception and abduction are clear from *the Lectures*:

1. The formation of the perceptual judgment is uncontrollable, while an abductive inference is controllable (Peirce uses “inference” here to refer to certain controllable acts).¹⁶
2. However, abductive inference is distinct from perception only by a matter of degree.¹⁷
3. Abductive inference and perception are both “interpretive”: *what* they represent depends on contextual or background conditions of the perceiver or reasoner.¹⁸
4. Both abductive inference and perception can introduce new “ideas” or conceptions, although the elements of any new conception introduced by an abductive inference must have been first introduced by perception.

Claims 1 and 2 together imply that *controllability* is a matter of degree, although it is likely that Peirce means that perception and abductive inference are separated by degree in other ways too. If degree of controllability were the only difference between them, then the perceptual process would have the same logical form as abductive inference. But Peirce seems to stop short of that claim, and he insists only that “logical analysis” would *represent* the perceptual process as having the form of abductive inference. His analogy to the sophism of Achilles and the tortoise (EP2:227) is supposed to show that, just as movement does not actually require passing through discrete points, so too the perceptual process does not have to pass through discrete abductive inferences. But just as we can represent movement as the passing through discrete points, so we can represent the perceptual process as discrete abductive inferences. Indeed, Peirce says that the perception “does not have to make separate acts of inference but performs its act in one continuous process” (EP2:227). Thus, another gradation between abductive inference and perception ranges from discrete processes (abductive inferences) to continuous processes (perception).

Note that, in describing the perceptual process as continuous, Peirce does not necessarily mean that there are no discrete operations in that process. Rather, he might mean that these discrete operations, including nerve interactions, form such a complex unity that they’re hardly distinguishable, particularly as quasi-abductions, when considering the process as a whole.

Despite Peirce’s taking perception to be an uncontrollable continuous process, while regarding abductive inference as a controllable discrete one, he places them on the same spectrum for at least two reasons. First, he treats both perception and abductive inference as *interpretive processes* (claim 3, above), although in a *narrower* sense of “interpretation” than the sense in which he holds *all* signification or representation is interpretive—namely, with his concept of the *interpretant*, or the “proper significate effect” of a sign.¹⁹ In the narrower sense, the perceptual judgment is significantly co-determined by the perceiving subject’s store of concepts and knowledge. Peirce recognizes that perception involves both bottom-up (sensory to conceptual) and top-down (conceptual to sensory) processing, and he does not explicitly limit the range of concepts that can interact with sensory signals (the percept) to determine the perceptual judgment. In consequence, several people can see the same object at the same time, and from the same angle, and each could still form a different judgment. Abductive inferences are interpretive because people with very different backgrounds will tend to offer different explanations for the same phenomenon. Of course, none of this should be understood as meaning that, for Peirce, the truth of any hypothesis is *relative*. While initial hypotheses can widely differ, there remains one true hypothesis that all inquirers would eventually settle upon.

The main reason that Peirce places abduction and perception on the same spectrum is likely the fourth claim, that each perception and abduction can introduce new “ideas” or conceptions, although the latter does so by drawing from “elements” introduced by perception. The nature of this generative aspect of per-

ception and abduction is likely complex, but I will consider it briefly further on, in relation to their selective aspect.

Of greater epistemological concern is whether or not Peirce regards perceptions to be like abductive inferences also with respect to *the epistemic status of their conclusions*. Is a perceptual judgment just like the conclusion of an abductive inference in having the status of a mere *hypothesis* or a mere *guess*? That is, does Peirce regard perceptual judgments as “suspicions” intended to be tested but surrendered should they fail the tests? Some authors have taken Peirce’s comparison of perception to abduction as showing that he regards perceptual judgments as having the epistemic status of hypotheses.²⁰

However, here we encounter the central problem for Peirce’s account of knowledge in *the Lectures*: if he regards perceptual judgments epistemically as hypotheses, how then can knowledge be obtained from perceptual judgments? If, as Peirce argues, *all* knowledge is based inferentially upon perceptual judgments, then, it seems, that some perceptual judgments must count as knowledge and confer it by valid inference. Otherwise, if perceptual judgments are themselves all mere hypotheses, then the empirical testing of any hypothesis would just be the testing of it against *other* hypotheses (i.e. perceptual judgments). And how can mere hypotheses be verified by other mere hypotheses?

Peirce believes that we have knowledge. He does not suppose our epistemic lives consist of nothing but conjectures or guesses. So, if we read Peirce as regarding perceptual judgments as having the epistemic status of hypotheses, then we must suppose that, for him, the *knowledge-making quality* occurs through inferences themselves—for instance, through *coherence* conditions. However, so far as I can tell, whether he thinks (A) *that perceptual judgments are not mere hypotheses but can themselves count as knowledge* or (B) *that knowledge arises from the right sort of inferential integration of perceptual judgments*, is underdetermined by his actual writings.

Whichever it is, (A) or (B), I believe a Foundherentist model of justification can be successfully employed to explain how there is knowledge within Peirce’s framework. As I argued in section 2, while Peirce broadly rejects normative claims about perception because of its uncontrollability, if some perceptual judgments count as knowledge—option (A)—then the features of the perceptual process that confer knowledge or justify the judgment would consist *both* in its causal-indexical connection to the percept and in the concept/belief-habits that interpret the percept. Alternatively, if perceptual judgments have only the status of hypotheses, and knowledge must somehow be obtained by inference—option (B)—then perceptual judgments as a whole may provide the experiential anchoring (the “clues” in Haack’s crossword analogy) for a given belief, while other beliefs, or the “already-completed entries,” provide the support that is also necessary for the justification of that belief.

If we reject (A), we can still apply Foundherentism both to perception and to our “abductive instinct” to explain each one’s selection process (which coincides with the generative process). The sort of justification involved in perception is not necessarily the sort that suffices for *knowledge*; instead, it might suffice for *worthy hypotheses*. As Haack articulates it, Foundherentism is not necessarily an account of the sort of justification that amounts to *knowledge*. However, if we accept (A), that perception amounts to knowledge, then we still might apply Foundherentism to our “abductive instinct” to justify our guesses: while the degree of justification might result in “knowledge” in the case of perception, it might only result in “acceptable hypotheses” in the case of our abductive instinct.

So, in the remainder of this paper, I will address the justification of abduction generally, and then I will elaborate on the Foundherentist justificatory structure in each of the above cases, where it can be applied to explain *knowledge* as well as *worthy hypotheses* within Peirce’s framework.

III. ABDUCTION: INSTINCT AND INFERENCE

As Peirce holds that, for the purposes of “logic,” perception can be *represented as* an abductive inference, sharing with abduction both an interpretive quality and an ability to originate new “ideas,” I will proceed with the assumption that whichever features make abductive inference or perception “good,” or whatever

“justifies” one or the other’s conclusion, we can identify analogous features in the other that make *it* good or justify *its* conclusion.

What exactly makes an abductive inference good, or what justifies its conclusion as an acceptable hypothesis, depends on the nature of abductive inference, and there has been much disagreement in the literature concerning the nature of abductive inference. Distinguishing between *justificatory* interpretations of abductive inference as “inference to the best explanation” (e.g. Lipton, 2004), which more or less just pay lip service to Peirce, and *generative* interpretations, McKaughan (2008) defends a “pursuitworthiness” interpretation that regards abduction as the selection of hypotheses upon practical/economic but *not* epistemic criteria. Kapitan (2000) argues similarly that abductive inference is a special type of “practical inference,” though he regards its formal structure as deductive.

In one respect, my interpretation is closer to Mohammadian (2019), who argues for a combined generative and pursuitworthiness account, combining abduction *as insight* and abduction *as inference*. This is the correct approach; however, Mohammadian mistakenly views abductive *insight* as merely generative, and he mistakenly views the inference as a type of “hypothesis-ranking” resting only on economic criteria. To the contrary, epistemic or truth-indicative criteria are also employed during abductive insight, and the abductive inference, in itself, has nothing to do with hypothesis ranking. Recognizing that the “logical form” of abductive inference that Peirce presents in *the Lectures* (see further on) does not display any hypothesis ranking, Mohammadian dismisses it, claiming “the logical form of abduction is at best marginal and very probably of no significance in Peirce’s mature theory of abduction” (154). I think this is mistaken.

The justificatory account that McKaughan rejects takes abductive inference to justify a conclusion in the same general way that, on Peirce’s view, induction does—namely, by providing evidence for a hypothesis. It is clear from several passages that Peirce does not take abductive inference to be evidential in this way. However, this is not to say that, on his Peirce’s view, there is nothing analogous to evidential processes that occur in our abductive *insight*. On the purely generative interpretation, an abduction is good or “justified” just so long as it generates some hypothesis or other that gets adopted. Supporting this are a few passages at which Peirce says that abduction *generally* is justified by the fact that it is the only inference that generates any new ideas.²¹ However, we need to be able to distinguish *better or worse* abductive inferences. McKaughan’s pursuitworthiness interpretation attempts to do this, but by excluding truth-indicative criteria it runs afoul of several claims that Peirce makes regarding abduction.

For instance, in *the Lectures*, Peirce remarks: “Think of what trillions of trillions of hypotheses might be made of which only one is true; and yet after two or three or at the very most a dozen guesses, the physicist hits pretty nearly on the correct hypothesis.” (5.172, EP2:217). Peirce’s famous example of an abductive inference, displaying its logical form, is another instance showing that, on his view, abduction involves truth-indicative criteria with the selection of the hypothesis. We find that the conclusion is not that the hypothesis explains the “surprising fact,” but *that we have reason to suspect that the hypothesis is true*:

Premise 1. surprising fact C is observed

Premise 2. if A were true, C would follow;

Conclusion. there’s reason to suspect that A is true.²²

Where does the “reason to suspect” that A is true come from? It cannot come just from the second premise, “if A, then C,” because, as others have observed, we would, then, have reason to suspect many different but absurd explanations are true.²³ A “reason to suspect that A is true” would be an *epistemic* justification to select A over other hypotheses. However, this justification and selection is not transparent in the premises of the abductive inference, and, as others have observed, neither is the *generative* aspect that Peirce clearly holds is essential to abductive inference.

My solution is that the generation and selection of A, or the hypothesis “suspected to be true” in the conclusion, is the product of “abductive insight” or the “abductive instinct” to guess things right—of which Peirce often speaks, especially in *the Lectures*²⁴—which is not itself the abductive inference. They are distinct, however, they are also regularly *conjoined* and complementary. In the *inference*, the minor premise (“surprising fact C”) *asserts* the motivation to engage our abductive instinct to generate a hypothesis, while

the major premise *asserts* that the (generated) hypothesis explains the explanandum; but the *selection* of that hypothesis is *asserted* only in the conclusion. The premises and the conclusion are *key assertions* of the abductive process, where, for Peirce, “to assert that proposition is to make oneself responsible for it” (5.543, 1902).²⁵ That is, the premises and the conclusion are *the points in the abductive process that we voluntarily accept and endorse*: the *motivation*, the *generated hypothesis*, and its *selection*. However, we do *not* control much of the generative and selective processes themselves. We actively seek some insight, but the insight itself is not (directly) up to us. Thus, an “abductive inference” is just the train of the propositions for which we make ourselves responsible during the abductive process, the rest of which occurs at an “instinctive” sub-personal level that is not unlike perception. In theory, the inference and the instinct can come apart, as we can assert propositions that, combined, take the form of the inference but which don’t occur to us through the abductive instinct.

Taking this approach to Peircean abduction, we find that abductive inference and perception *are* on a continuum with respect to controllability, as a controllable abductive inference generally occurs upon uncontrollable “instinctive” generative and selective processes. Thus, the focus here, relating perception and abduction, must be on these instinctive processes.

In *the Lectures*, Peirce abstains from accounting for the reliability of the generative and selective processes in abduction, just as he does with perception:

However man may have acquired his faculty of divining the ways of Nature, it has certainly not been by a self-controlled and critical logic. Even now he cannot give any exact reason for his best guesses. It appears to me that the clearest statement we can make of the logical situation—the freest from all questionable admixture—is to say that man has a certain Insight, not strong enough to be oftener right than wrong, but strong enough not to be overwhelmingly more often wrong than right, into the Thirdnesses, the general elements, of Nature. An Insight, I call it, because it is to be referred to the same general class of operations to which Perceptive Judgments belong. This Faculty is at the same time of the general nature of Instinct, resembling the instincts of the animals in its surpassing the general powers of our reason and for its directing us as if we were in possession of facts that are entirely beyond the reach of our senses. It resembles instinct too in its small liability to error; for though it goes wrong oftener than right, yet the relative frequency with which it is right is on the whole the most wonderful thing in our constitution. (EP2:217-18)

So, how exactly are abduction and perception so relatively reliable? First, note that neither necessarily requires the actual representation and relative weighting of multiple rival hypotheses. The generative mechanisms can coincide with selection mechanisms simply through rules that exclude certain hypotheses from being generated. *Language* certainly excludes many hypotheses, as one will tend not to represent any hypothesis that cannot be represented within one’s repertoire of predicates.²⁶ Very likely, we also employ “rule-based shortcuts” or heuristics by which we do not represent and weigh vast swaths of representable hypotheses. Such rules might include one that automatically excludes *supernatural* or *fantastical* hypotheses, and the belief-habit that *there are no supernatural causes* might suffice as such a rule in actual practice. In fact, there may not be any special mechanisms for the production and weighting of hypotheses other than pathways through which our current belief-habits exert either generative or inhibitive influence. Recall how Peirce regards abduction as *interpretive*: the generation and selection of a hypothesis always occurs within a nexus of belief-habits, and, other than that nexus, hypothesis generation and selection might not require anything besides a cognitive stimulus and special cognitive pathways eliciting acquired belief-habits.

The main difference between perception and abductive insight would lie, then, with the stimulus. In the case of perception, the stimulus is the *percept*, which triggers a certain conceptual response, which response depends on pathways or connections between our (mainly inherited) sensory habits and our (mainly acquired) belief-habits,²⁷ and where the selected response, the perceptual judgment, is co-determined by

both types of habits. Note that these belief-habits are the same ones through which perception is *interpretive*. In the case of abduction, the stimulus is the “surprising fact,” which could be a perceptual judgment or a judgment formed by deduction from perceptual judgments.

Granting both a causal stimulus and a doxastic network form the generative-selection processes in perception and in abductive insight, those processes can be evaluated upon their epistemic qualities. The belief-habits through which a perceptual judgment or hypothesis is generated-selected—and in virtue of which perception and abduction are interpretive—can be understood as providing various degrees of epistemic support (justification or warrant) to that judgment or hypothesis. Further, the process can be evaluated according to its experiential connection via its stimulus or input. While, at the time of *the Lectures*, Peirce opposes evaluations of uncontrollable or sub-personal processes, I have argued that this is based on an implausible analysis of evaluation that takes it to be inseparable from attributions of praise and blame. If we can look past this, then we find that the Foundherentist model fits well with Peirce’s theory.

IV. A CROSSWORD MODEL OF ABDUCTION AND PERCEPTION

On the Foundherentist account, the criteria for justification are truth-indicative and they “rest in part on facts about human capacities” (2009, 266); however, unlike in Reliabilism, a determination of how well a given belief satisfies Foundherentist criteria does not directly entail any particular probability that the belief is true. As Haack argues, while this is a superficial advantage of Reliabilism, Reliabilism has the problem of determining which of the many types of processes instantiated in a token case justifies the resulting belief.²⁸ Foundherentism is an internalist or evidentialist theory, and not an externalist one. While a subject’s “experiential S-evidence” for a belief that *P*—the experiential²⁹ states or processes that causally sustain the belief and provides its “experiential anchoring”—are relevant to the belief’s justification, it is the “experiential C-evidence”—*the propositions expressing that S-evidence*—that count toward the total “C-evidence” for the belief.³⁰ Besides the experiential C-evidence, one’s total C-evidence includes one’s “C-reasons,” which are the same beliefs that causally sustain the belief (the “S-reasons”) but with respect to their *content* (hence, “C-reasons”). For the Foundherentist, the degree to which a belief that *P* is justified depends on (a) the degree of evidential support for the belief that *P* (total C-evidence), (b) the independent security of one’s C-reasons for believing that *P*, and (c) how comprehensive those beliefs are, collectively, about the world.

As explained here, Peirce’s accounts of perception and abduction are suitable for Foundherentist treatment concerning the justification of the perceptual judgment or the abduced hypothesis. First consider perception. The *percept* provides the experiential S-evidence for the perceptual judgment, while the nexus of belief-habits that co-determine the perceptual judgment (and give it its interpretive quality) are the perceptual judgment’s S-reasons. The content of the S-reasons and the propositions expressing the experiential S-evidence amount to the total C-evidence for the perceptual judgment. Beyond this, its justification, then, is a matter of the independent security of the C-reasons as well as their comprehensiveness.

Next, consider abduction, or the instinctual process that generates and selects a hypothesis for testing. While the direct stimulus for an abduction seems to be a doxastic state (the belief in “surprising fact C”) rather than an experiential state (a percept of some type), it is likely that memory and other non-doxastic internal states (such as the “irritation of doubt”) are direct causal contributors to the generative and selective processes resulting in the hypothesis. So, some type of experiential S-evidence can be identified for abduced hypothesis. The S-reasons are the belief-habits that enter into the generative and selective process resulting in the hypothesis and sustaining it as the candidate for testing; with respect to their content, the S-reasons are the C-reasons for the hypothesis. Other than this total C-evidence for the hypothesis, its justification, *as a hypothesis worthy of testing*, is a matter of the independent security of the C-reasons as well as their comprehensiveness.

How does this help us with the problem concerning how *knowledge* arises on Peirce’s account? Recall that Peirce’s placing perception on the same continuum with abductive inference suggests that perceptual judgments are themselves nothing but hypotheses that must be tested, where, then, there is nothing to test

a hypothesis *against* other than more hypotheses. One solution I mentioned, (B), is that knowledge might still arise through coherence criteria, where a hypothesis could rise to knowledge with sufficient types and a sufficient amount of inferential support from other hypotheses. However, in that case, no single “test” could be said to refute a hypothesis unless the perceptual judgments (of that test) are shown to have themselves sufficient inferential support.

Since Peirce is clear that abductively inferred hypotheses do not count as knowledge (that is, without further testing), if we go with solution (A), that perceptual judgments *can* count as knowledge (without further testing), then we must justify treating perception and abductive inference differently. Applying Foundherentist criteria, we find that that *the difference in experiential anchoring* might be sufficient to treat them differently with respect to the epistemic status of their products. Perceptual judgments are directly sustained by sensory processes or percepts, while the conclusions of abductive inference are sustained only indirectly by percepts and perhaps by less reliable experiences like memory and introspection. So, the difference in epistemic status between perceptual judgments and abducted hypotheses could be explained as follows: one has much weaker experiential support than the other, so the degree of justification in one allows it to count as knowledge, while the degree of justification in the other allows it to count only as an acceptable hypothesis to test.

Further supporting this solution is the fact that Peirce frames abductive inference in a way that seems to presuppose that perceptual judgments generally have a higher sort of epistemic status than hypotheses. “Surprising fact C,” the motivation for an abductive inference, is generally a perceptual judgment or near inference from perceptual judgments. Peirce’s calling it a “fact” suggests that it is of a higher status than a hypothesis. Moreover, if “C” were itself a mere hypothesis, then “A,” the pursuit-worthy hypothesis for C, should almost always be that *this surprising fact didn’t really occur*. If C conflicts with better tested hypotheses than C itself, then the most likely hypothesis explaining C is that C is in error.

Again, we might suppose that, in Peirce, knowledge arises only through inference; however, as this conflicts with his emphasis on experimental testing, the best solution seems to be the one that treats perceptual judgments, or at least *some* perceptual judgments, as bona fide cases of knowledge. If we can disregard Peirce’s insistence that it is “nonsense” to evaluate uncontrollable processes, then we can use the tools that Haack provides to make sense of how perceptual judgments can be products of processes structurally analogous to those involved in abductive insight and yet not be, like abductive insights, hypotheses worthy only of further testing. In the case of abductive insight, the experiential anchoring condition is barely met, while in perception that condition is met with full force.

Some will insist that Peirce’s rejection of evaluations of uncontrollable events as nonsense simply cannot be disregarded; and nor can other claims that Peirce made which I argued could be dismissed as fleeting mistakes (e.g., his claim that perceptual judgments are not truth-apt). They might see my effort here as a sort of cherry-picking of Peirce in order to fit his views with Haack’s. It is true that the Peirce-Haack hybrid theory I propose here is neither fully Peirce nor fully Haack. But it does not follow, from that, that it is not a good theory. As I see it, the best way for students to honor the intellectual legacies of their teachers is not to embrace *all* that their teachers said or to spend their lives debating what their teachers really meant. It is to move inquiry forward by utilizing the greatest insights from their teachers, and to help weave humanity’s intellectual quilt using various threads of their teachers’ thoughts. In this paper, I hope to have approximated to something like that end.

NOTES

1. Haack's language is in terms of beliefs, but it should be extendable to judgments, claims, theories, etc.
2. See de Waal 2005, 163.
3. EP2:260, 1903.
4. 5.212/EP2:241.
5. "There are no conceptions which are not given to us in perceptual judgments, so that we may say that all our ideas are perceptual ideas" (EP2:223). Also see EP226-227.
6. "[P]erceptual judgments contain elements of generality, so that Thirdness is directly perceived" (EP2:224). "The second is that perceptual judgments contain general elements, so that universal propositions are deducible from them in the manner in which the logic of relations show that particular propositions usually, not to say invariably, allow universal propositions to be necessarily inferred from them" (EP2:227).
7. "[T]he abductive faculty, whereby we divine the secrets of nature, is, we may say, a shading off, a gradation of that which in its highest perception we call perception" (EP2:224). "[A]bductive inference shades into perceptual judgment without any sharp line of demarcation between them[.]" (EP2:227).
8. For instance, see Wilson (2012) and Atkins (2017)
9. While Peirce's most sustained attack on Cartesian philosophy was written over thirty years earlier than the 1903 lectures were delivered, as recently as 1901 Peirce rejected the claim that we know internal states mostly by inference from knowledge of external facts (8.144). See Wilson (2016, 79-89).
10. Note that, in the *Minute Logic*, Peirce uses the term "perceptual fact" instead of "perceptual judgment" to refer our first judgments concerning percepts, and I decided to substitute "fact" with "judgment" to be less confusing to the casual reader. Since Peirce's description of "perceptual fact" aligns very closely with his description of "perceptual judgment," and since "perceptual fact" appears nowhere simultaneously with "perceptual judgment," I regard them to be equivalent terms, notwithstanding some minute differences that might account for Peirce'
11. Most readers are familiar with this account, but see, for instance, 8.12, 1871; 5.407-408, 1878; 5.553, 1906.
12. For instance, see W3:282, 1878 and 5.553/EP2:379-380, 1906.
13. For instance, in "On the Logic of Drawing History from Ancient Documents" (1901), Peirce describes abduction as "the process of choosing a hypothesis", and his subsequent description of abduction suggests that there are many more deliberate steps involved in that process than just an single inference, including consideration of testability and economy, and a hope that we will find the right answer.
14. The view that abduction as an instinct for "guessing thing's right" and abduction as a form of inference are distinct but connected parts of abduction in Peirce can be found already, in various forms, in a number of authors. For instance, see Kapitan (1990, 507), Hoffman (1999), and Tschaepe (2014).
15. As Kapitan (1990) argues: "Peirce's ideas easily allow for discovery being rule-stimulated if not rule-governed" (508).
16. "[J]ust as Achilles does not have to make the series of distinct endeavors which he is represented as making, so this process of forming the perceptual judgment, because it subconscious and not amenable to logical criticism, does not have to make separate acts of inference but performs its act in one continuous process" (EP2:227).
17. "[T]he abductive faculty, whereby we divine the secrets of nature, is, as we may say, a shading off, a gradation of that which in its highest perception we call perception" (EP2:224). Also, "abductive inference shades into perceptual judgment without any sharp line of demarcation between them" (EP2:227).
18. E.g. "I should tire you if I dwelt further on anything so familiar, especially to every psychological student, as the interpretiveness of the perceptual judgment. It is plainly nothing but the extremest case of Abductive Judgment.
19. See, for instance, 5.475, 1905. In Wilson (2016, ch.7), I argue that semeiosis or signification, in Peirce, is an interpretive process generally, such that signs stand for objects only by being so interpreted, but one by which a sign tends toward being interpreted to stand for a fixed object (the "dynamical object").
20. For example, Campos (2010).
21. For instance, 5.171, 1903; 7.219.
22. 5.189/EP2:231.

23. As Kapitan (1992) puts it in regards to this passage: “There are any number of ‘wild’ hypotheses why I am now reading this paper, but that alone does not provide reason to think that any particular one is true” (6). For instance, if the observable universe were being pulled apart by the tentacles of invisible squid a trillion light years across, then we’d observe that the universe is expanding at an accelerated rate. This conditional could be true, and its antecedent might be testable, but we do not have sufficient reason to suspect there’s squid-like monster accelerating the expansion of the universe.
24. For instance, see 5.175-179, 5.181, 6.471, 6.526, and 7.219-20.
25. Also, see R 599:5, 1902; R 454:5, 1903; and 5.30-31, 1903.
26. Our conceptual space may not be limited by our predicate space.
27. There is no firm distinction between concepts and beliefs in Peirce. Concepts are nodes within doxastic-habit network. As Peirce indicates in 1878 “How to Make Our Ideas Clear”, our concept of wine, for instance, is just various predications of wine (5.401). That is, to possess the concept of wine is to believe certain things about wine.
28. Feldman (1998).
29. By “experiential” Haack includes not only sensory experiences but other possible sorts of experiences, such as memories and introspective experiences.
30. Haack claims “[I]t is sentences and propositions, not states of a person, which support or undermine each other” (2009, 124).

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Blocking Inquiry in the Name of Science: The Dispute About Nothing

CORNELIS DE WAAL

Web: <https://liberalarts.iupui.edu/about/directory/dewaal-cornelis.html>

Susan Haack has written a great book with great title: *Defending Science—Within Reason: Between Scientism and Cynicism*.¹

At face value, this title may seem a bit odd. Given its track record it seems that science does not need a defense, and that if any defense were needed it would by nature be a reasonable one. It is rather the *unreasonables* as exemplified by the flat-earthers, anti-vaxers, and creationists that science needs to be defended from. Though I agree that science is under attack from such quarters, especially in an age where misinformation reigns supreme, the story does not end there. Science needs to be defended also from some of its most vocal proponents—from scientists who defend their trade in ways that are decidedly unreasonable. Often this takes the shape of people claiming, boldly, that the natural sciences can solve any question about the world that is worth asking, and that philosophy and the religious tradition have nothing to contribute to this at all, but are at best an obstacle to be avoided. As Haack astutely observes, “we need to avoid *both* under-estimating the value of science, *and* over-estimating it.”² Hence, the final part of the title—*Between Scientism and Cynicism*—between being overly deferential to science and being naively dismissive. The current paper focuses on the first faulty extreme. Though historically successful, science is not perfect, nor is it the only way that inquiry can be conducted. This is true especially given that those who overestimate the value of science also tend to be most restrictive in what they consider science; a certain inquiry, say within sociology, may only be called scientific when it emulates the methods that physicists have so successfully deployed within *their* domain.

Put briefly, in this paper I aim to discuss a case where science becomes unreasonable in its defense of itself, and does so in part by uncritically disparaging the religious tradition from which it ultimately derives.³ This should not be taken, however, as an attempt at returning to a religious reading of nature. There was a time when references to God, say as the designer of the universe, gave us the best explanation for a great variety of natural phenomena. But those days are clearly over. That does not imply, however, that the inquiries of old have nothing left to contribute to today’s questions, nor does it leave us with science—especially when conceived narrowly—as our only resource for all questions we can possibly ask about the world. To this we can further add that various religious notions have survived, in a secularized garb, in ways that can be counter-productive. The case I focus on in this paper provides an example of this.

This case concerns recent attempts by physicists to show how the universe could have emerged out of nothing—*ex nihilo*. In my discussion, I focus on one book in particular: *A Universe from Nothing: Why There Is Something Rather than Nothing* by the American physicist Lawrence M. Krauss.⁴ Some may object that in focusing on Krauss I am setting up a straw man. This would certainly be justified were my purpose that of criticizing recent attempts within physics to show how the universe could have emerged out of nothing.⁵ But that is not my goal. My goal is rather that of providing an example of an unreasonable defense of science, one where science is cordoned off so as to exclude anyone from contributing to it except fellow scientists. To that purpose Krauss's book serves very well. In fact, one of the elements his book shares with books on familiar pseudo-sciences, such as creationism, is that its intended readership is a non-scientific, or non-specialist one.

The nineteenth-century American scientist and philosopher Charles Sanders Peirce (who, incidentally, also argued that the universe spontaneously emerged out of nothing)⁶ claimed, emphatically, that we should not block the road of inquiry because doing so violates what he called the first rule of reason: to learn one must desire to learn.⁷ True, this is a rather pedestrian rule, as it merely states that when we ask a question we should try to answer it. But it is also an important one, as it is so easily and so often violated. We may be lazy or simply don't care, we may dislike where a question leads us, or we may be driven by ulterior motives, such as a desire to become famous, to appease the financial interests that funded the research, to reaffirm an already firmly held belief, or to make it consistent with some broader worldview. It is, moreover, as Haack aptly observes, not a black-and-white issue that enables us to neatly separate the bad guys from the good guys:

In real life, of course, people's motives are usually mixed; and what we find is not so much a clean, sharp demarcation between pseudo-inquiry and the real thing as a continuum from less to more commitment to arriving at a predetermined upshot, from less to more openness to all the evidence.⁸

In this paper, I will show that Krauss violates Peirce's first rule of reason in a significant manner, and that he does so to the detriment of the physics that he seems to hold dear. At least in part what lies behind this is that Krauss does have an ulterior motive: he wants to prove that we no longer need to refer to a god to explain the existence of the universe. In an odd way this makes *A Universe from Nothing* a book in theology rather than physics—a negative theology perhaps, as its main focus is proving that the god that theologians talk about cannot exist, but a theology nonetheless.⁹ Moreover, it appears that such a negative theology also has its fundamentalists, and *A Universe from Nothing* makes one suspect that Krauss is one of them.

The point where Krauss violates the first rule of reason is where he off-handedly refuses to take seriously competing conceptions of nothing against the backdrop of which his own version of nothing turns out to be not truly nothing. These competing conceptions come mostly from theological and philosophical quarters. Krauss is well aware of his refusal. As he boasts in the preface, philosophers and theologians, following the creationists' playbook, have gone out of their way to “define and redefine ‘nothing’ as not being any of the versions of nothing that scientists currently describe,” replacing it at best with “some vague and ill-defined” concept of “nonbeing” (xiv).¹⁰

Now it is easy to see that his is obviously a straw man, because Krauss happily compares the best that science has to offer with rather crude views he ascribes to philosophy and religion. However, it does raise the broader question whether philosophy and theology have still something useful to contribute to the physicist, and whether to offhandedly dismiss their contributions truly counts as blocking the road of inquiry. This question is especially interesting because of another normative tenet in Peirce's theory of inquiry, which pertains to the economy of research. Briefly put, should the contemporary cosmologist still pay attention to the arguments of theologians and philosophers, or is that simply a waste of time?¹¹

It seems to me that biologists who seriously engage with creationists, or Intelligence Design theorists are indeed wasting their time, and that those who refuse to do this are not in violation of Peirce's first rule

of reason. This because these self-proclaimed alternative approaches have nothing to offer to the questions that biologists are actually asking, given what they already know about nature, and given the tools they developed within their own discipline for answering those questions. Here I side again with Peirce, who called for a *natural* rather than an artificial division of the sciences.¹² On such view, biology is a historically grown organic clustering of questions, combined with attempts to resolve these questions and the methods developed to resolve them. Though biologists may borrow questions and methods from other disciplines (or they may be imposed upon them externally) what comes out of such questions and methods is only relevant to biologists when it has become part of their discipline—in all of this keeping in mind that biology may change in the process, even revolutionary so. Briefly put, until the creationist's views are shown to be relevant to *biology*, the biologist would not be blocking inquiry when refusing to take them on. There remains, of course, the issue of the public acceptance of biology, especially evolutionary biology, in the face of a hostile and politically savvy religious fundamentalism, but that is a socio-political issue, not a scientific one.

There are times when Krauss admits that philosophy still has something of value to offer. Responding to critics he writes that he never meant to issue “a blanket condemnation of philosophy as a discipline.”¹³ But in making this concession he pulls back the rope as much as he extends it. Insofar as philosophy is not scientific,¹⁴ it is reduced to issues “that are relevant to making decisions about how to function more effectively and happily as an individual, and as a member of a society.”¹⁵ Far from a desire for cross-fertilization, this is a demand for total control: unless you accept our ways, you cannot contribute. Philosophy is of value to physics only to the extent that it has become physics. The problem with this is that Krauss simply takes it for granted that all *philosophical* questions, insofar as they have any bearing upon physics, have already been settled, so that physics is no longer in need of philosophy.

In essence, what we are talking about is the issue of interdisciplinarity. When should people be embraced as capable of making genuine contributions, or voicing serious objections, and when should they not? This is a question that may be very difficult to answer when one is not a specialist in the disciplines that those contributions and objections come from. This can be seen, for instance, from the at times tense relationship between psychology and neuroscience, especially when addressing specific topics, such as depression.¹⁶

A better way perhaps of looking at the question, and here I am taking my cues from Peirce and Haack, is not in terms of disciplines and the insights acquired by them, but in terms of inquiry, more precisely by drawing a distinction between genuine inquiry and pseudo-inquiry.¹⁷ We can characterize genuine inquiry as any inquiry engaged in with the desire to have one's questions answered, no holds barred and with no axe to grind. That is to say, there are no questions that we are prohibited from asking, nor any answers that are from the outset unacceptable. It can be argued that, at least in principle, questions about what counts as evidence, which methods are appropriate, and what is the best terminology can all be resolved within inquiry itself. Importantly, the methods used in inquiry are not externally imposed upon it, but are generated within inquiry—they are part of the inquiry itself. It is because of this that we can say, as I did earlier, that the biologist can, and even should, ignore the creationist's views as long as they have nothing to offer to the questions that biologists are actually asking given what they already know about nature, and given the tools that they have developed within their discipline for answering those questions. It is against this backdrop of existing questions, answers, and methods that new questions acquire their meaning. It is typical for science that one must possess certain knowledge to be able to adjudicate why a question is worth asking, what it entails, and how to go about answering it. In fact, formulating the right questions is key to scientific progress, whereas asking the wrong questions can be a true hindrance.

Inquiry would *not* be genuine if its aim is different than having one's questions answered, and it would not be genuine *even if* it were to rely on methods, pieces of evidence, and terminology that were derived from genuine inquiry.¹⁸ Someone engages in *pseudo*-inquiry when an activity that is not inquiry is made to look as if it is inquiry. The situation here is not any different than when we feel the need to say that a belt or a purse is made from genuine leather rather than from something that is made to look like leather. Importantly, genuine leather, is not some special kind of leather, or some higher grade of leather, quite the oppo-

site, genuine leather is just leather. The same is true for inquiry. When using the phrase “genuine inquiry,” the adjective is only a reminder that there is such a thing as counterfeit inquiry and that we must make sure that what passes for inquiry truly is inquiry. In short, we use the phrase mostly when we feel at risk of being duped. When we are not, we just call it inquiry.

The distinction between inquiry and pseudo-inquiry is broader than the one typically drawn between science and pseudoscience. This is because the word science has acquired a far more narrow usage, especially in English. Its usage is so narrow, in fact, that to our purpose—which concerns the relations between science, theology, and philosophy—it is less useful and may even be counterproductive, as neither philosophy nor theology should be conceived as part of science if science is conceived in this narrow way.¹⁹ That being said, what differentiates science from pseudoscience is precisely that whereas the former is characterized by genuine inquiry, the latter is characterized by pseudo inquiry. Consequently, we can identify a certain scientific-sounding book, or article, as pseudoscientific if it can be shown to be a product of pseudo-inquiry, and we can show the latter by showing that in some significant manner it violates Peirce’s first rule of reason by blocking the road of inquiry. It is important to keep in mind that scientific methods, and reasoning more generally, are easily abused. Consequently, we cannot conclude from the fact that someone combines reason with established scientific methods and scientifically confirmed findings that we are dealing with a work of science.

Having pointed out that one should not block the road of inquiry, Peirce lists “four familiar shapes in which this venomous error assails or knowledge,” the first of which is “the shape of absolute assertion.”²⁰ (Haack later shows that all four shapes reduce to this one.²¹) In his review of *A Universe from Nothing*, David Albert effectively claims that Krauss’s argument takes this first shape,²² and there are certainly moments where we find Krauss making the kind of absolute assertions that Peirce dreaded so deeply. “My real purpose here,” Krauss writes in the introduction,

is to demonstrate that in fact science *has* changed the playing field, so that these abstract and useless debates about the nature of nothingness have been replaced by useful, operational efforts to describe how our universe might actually have originated. (xv)

In a single claim, boldly made and question begging, the door to philosophy and theology appears firmly and permanently shut.

With all of this in mind, let’s “put philosophy to work” (another great phrase of Haack’s)²³ and turn to *A Universe from Nothing* to see whether the road of inquiry is indeed being blocked, if so where and with what consequences, and whether this justifies calling it pseudoscience.

NOTHING CONCEIVED AS EMPTINESS

In Krauss’s discussion of the claim that the universe emerged from nothing we can discern three steps. In the first, nothing is conceived as empty space, or a vacuum. In the second, Krauss considers what he calls a “more fundamental nothing” that precedes and gives rise to space in accordance with the laws of physics (174). In the third and final step, Krauss entertains the idea that nothing precedes even the laws of physics. Like many physicists, Krauss becomes less and less comfortable the further he moves away from the idea that nothing means empty space. Not only do his chapters become shorter and less assured, but also when introducing his third concept of nothing, he begins by reaffirming that the first two remain perfectly legitimate interpretations, while expressing doubt that there is much to be said about the third (ibid). Perhaps this lack of assurance is because the further Krauss moves away from the idea of nothing as empty space, the more the established theories in physics need to go out on a limb, making the result less scientific and more speculative. This notwithstanding, Krauss insists, without much of an argument, that physics is still adequate to address the issue, whereas philosophy and theology are not (146).

Key to Krauss’s dismissal of philosophy and theology is his rejection of any conception of nothing that is conceived a priori. As he puts it in the preface,

When it comes to understanding how our universe evolves, religion and theology have been at best irrelevant. They often muddy the waters, for example, by focusing on questions of nothingness without providing any definition of the term based on empirical evidence. (xii)

In a subsequent article for *Scientific American*, Krauss further adds: “sticking firm to the classical ontological definition of nothing as ‘the absence of anything’—whatever this means ... strikes me as essentially sterile, backward, useless and annoying.”²⁴ Instead, he writes: “If ‘something’ is a physical quantity, to be determined by experiment, then so is ‘nothing.’”²⁵ So, for Kraus, “nothing” must be looked upon as a physical quantity that can be empirically determined. With this in mind let’s look more carefully at Krauss’s argument.

The first conception of nothing Krauss entertains is that of empty space. “For the moment, I will assume space exists,” he writes, “with nothing at all in it, and that the laws of physics also exist” (149). He calls this “the simplest version of nothing” (id.), and he believes, mistakenly, that this was historically the standard view (xiv).²⁶ The central intuition behind it, however, is indeed simple and straightforward. On this first conception, nothing is what we are left with once we have emptied a region of space of all it contains—“dust, gas, people, and even the radiation passing through” (58). The question that needs to be raised here is whether this emptiness is to be interpreted empirically, as a state that is obtained after performing certain acts of removal, or normatively, as some goal or ideal to be worked toward and of which our specific acts may fall short. If the latter, then we must subsequently ask whether this norm itself is extrapolated from our past attempts, which makes it again empirical, or whether it is derived from some abstract ideal, such as the a-priori stipulated absence of anything that Krauss dreads so much.

Robert Boyle’s experiments with the vacuum pump clearly fall within the empirical camp, as Boyle believed that it gave us empirical proof that space could be empty. The problem of this approach, however, is that removing from a region of space everything that we suspect that is in there, does not by itself prove that nothing remains—that it is truly empty. Consequently, a good case can be made for conceptualizing nothing in terms of an a priori ideal, as in that way it can guide empirical science and prevent it from calling out prematurely that it arrived at nothing. In brief, nothing is not some empirical quantity to be discovered in the way one discovers a new particle, or a new species of termites, but it is rather a regulative ideal that can be used to set the course of inquiry. Sometimes such ideals can be reached, and at other times they cannot.

Now if we interpret nothing in terms of empty space, then we must pay attention to what is meant by “something,” because if there is still something left, then the space was obviously not empty. Recall that Krauss said that “something” is an empirical notion, calling it, “a physical quantity, to be determined by experiment.”²⁷ It is not wholly clear what this means. A physical quantity, to the physicist, is any physical property that can be quantified—that is, measured using numbers—such as length, temperature, velocity, mass, etc. For instance, we determine the length of a table by experiment by holding a ruler right next to it and say “37 inches.” I’m not sure, however, how *being something* could be a property, let alone a property that can be quantified, as what would it be a property of?²⁸ So Krauss’s concept of something may not be vague, but it is certainly ill defined. It is easier, and I think more appropriate, to conceive of something as anything that has some (physical) quantity—anything that is somehow positively measurable. Thus, the table can be said to be something because it has length and a room can be said to be “not empty” when it has a table in it. It seems though that not everything that can be quantified as such counts. For instance, we can say that the empty room still contains four areas where the table would fit. But that parts of the room can thus be physically quantified does not thereby make the room any less empty. Of course, we could maintain that space itself is something on the ground that *it* can be physically quantified, but that would be to deny that Krauss’s first conception of nothing—as “empty space”—even qualifies as a candidate. Conversely, one can think of things that cannot be quantified that still count as something. For instance, my dread about going to the dentist is still something (not nothing), irrespective of whether that dread can be (physically) quantified. In sum, the idea of empty space is much less self-explanatory than may have seemed at the outset. This, however, is by no means a recent insight. In fact, much of what motivated the medieval notion that

nature abhors a vacuum was that the very notion of empty space was considered incoherent. As it turns out, it was modern physics that opened up the possibility of empty space. For instance, in his Scholium to the *Principia* Newton envisioned absolute space in a manner that does enable us to think of it as empty.²⁹

Perhaps a better way of conceptualizing “something” is by saying that it applies to whatever we can ascribe a quantity, quality, or relation to, and that if we can ascribe a *physical* quantity, quality, or relation to it, then it will be a *physical* something. Again, this would be an a priori notion of something—it tells you what something must be like for it to count as something—and it is a pretty comprehensive one at that. One will be hard pressed to find anything that isn’t something. In fact, as the example of the table showed, even the *absence* of something can be something. On this view, empty space can then be conceived as space that is devoid of anything of which anything whatsoever can be ascribed, and empty *physical* space as space that is devoid of anything of which anything physical can be ascribed.

To sum up the above, in defining nothing as empirically certifiable empty space, Krauss is making various unwarranted assumptions that a more careful analysis of the concepts involved quickly bring to the surface. These assumptions relate not only to what these concepts stand for, but also to what role they play within scientific inquiry. By refusing to take into account conceptual issues like these, Krauss is de facto blocking the road of inquiry. His situation differs from the biologists who are ignoring the creationists, because Krauss’s off-handed dismissal of a philosophical analysis of what we (can) mean by nothing does have a direct impact on what physicists are doing, as they are purportedly trying to prove how the universe could have emerged from nothing. It is, furthermore, quite clear why he does this. He wants to exclude a *a priori* certain answers to the question of the origin of our universe.

Since the aim of the whole enterprise is to explain how something (more specifically, our universe) could have emerged from nothing, Krauss spends quite a bit of time and energy explaining how things can appear in empty space, apparently out of nothing, and without violating the laws of physics:

Sometimes conditions are such that real, massive particles can actually pop out of empty space with impunity. In one example, two charged plates are brought close together and, once the electric field gets strong enough between them, it becomes energetically favorable for a real particle-antiparticle pair to “pop” out of the vacuum with the negative charge heading toward the positive plate and the positive part toward the negative one. (154)

However, from the fact that two particles appear to come out of nothing it does not follow that they actually do. It might very well be that the space they emerged from wasn’t truly empty, but only seemed that way. In fact, Krauss appears to agree with this. He writes, “empty space is complicated. It is a boiling brew of virtual particles that pop in and out of existence in a time so short we cannot see them directly” (153; see also 97). However, the point that Krauss seems to be driving at here is not that the vacuum isn’t truly empty, but that given what we know about quantum mechanics, we cannot conceive physical space to ever be completely empty. Because of Heisenberg’s uncertainty principle we cannot cognize zero energy, so that the emptiest physical space that we are able to conceive will always emit some energy. And because of Einstein’s famous formula, $E = mc^2$, on which energy and mass are the same thing, such non-zero-energy empty space must continuously be producing particles to carry this mass—particles which, because of their extremely brief existence, are called virtual.³⁰ Consequently, though we may still be able to conceive of, say, a *mathematical* space that is absolutely empty, we cannot conceive of a *physical* space that is absolutely empty, and it is the latter, not the former, that is relevant when talking about the origin of the universe. A consequence of this is that we either have to forgo on equating nothing with empty physical space or redefine nothing such that it is equivalent to empty physical space with all that is brewing within it. If we opt for the former, the nothing we are speaking of is no longer a physical nothing; it is, so to speak, not of this world. Krauss opts for the second on the ground that he wants to do physics and that this is about as empty as physical space can possibly get. Quantum mechanics further comes with a conceptual infrastructure that allows particles to escape from this virtual brew and become real so to speak, as happened in the example of the two charged plates. In that case we would have something emerge from nothing, where nothing is quite jus-

tifiably defined as physical empty space. The question that remains, though, is whether nothing should indeed be defined as empty space, as it can be plausibly maintained that space, no matter how empty, is never nothing; it is something—namely, empty space. In line with the theme of trying to explain how the universe emerged from nothing, this raises the question where did this physical empty space come from. It is to this question that we turn next.

NOTHING CONCEIVED AS SPACELESS EMPTINESS

The second view concerns recent theories in physics that can account not only for things emerging within space, but also for the emergence of space itself, where the latter is taken to have emerged from what Krauss now calls a “more fundamental nothing” (174).³¹ Importantly, space is still conceived as emerging in accordance with the laws of physics. This is crucial, because the aim is still that of showing that physics, or natural science more generally, is adequate to address not only the emergence of things within space, but also the emergence of space itself, as only then is physics capable of proving that the universe emerged from nothing and did so in a purely naturalistic manner.

The big bang theory is typically understood as having the universe emerge in an event that should *not* be conceived as happening within space, whether empty or not, but as an event that itself *originated* both space and time—a view that goes back to St. Augustine.³² On this view, space is as much a product of the big bang as anything that we may find within that space. Crudely put, the process through which space is now taken to emerge out of nothing is mirrored on how things were conceived to emerge out of empty space. A quantum theory of gravity, which combines the general theory of relativity with quantum mechanics, is taken to allow for the creation of small compact spaces out of nothing as virtual universes that are theoretically on a par with the virtual particles that were taken to emerge within empty space, so that now, as Krauss puts it, “space itself is forced into existence” (161). However, the lifetime of such universes would need to be extremely short, roughly 10^{-44} seconds, as otherwise it would entail a violation of the laws of physics as we know them. Hence, an additional argument is needed to show how our universe could have emerged—that is to say, an explanation for how our universe managed to endure beyond those 10^{-44} seconds and grow out to its current proportions. Here inflationism comes into play, a theory that was developed in reaction to three well-defined problems that had plagued the big bang theory: the flatness problem, the horizon problem, and the monopole problem.³³ On the whole we can say that general relativity, quantum mechanics, and inflationism provide an avenue for contemporary physics that shows that it is at least in principle possible to have the whole universe, not just the things within it, emerge from nothing.

Leaving technicalities aside, there are still conceptual problems that need to be resolved. The idea of nothing that drives these theories still trades on the notion of empty space, which is now conceived as zero-dimensional—a mere point—that subsequently expanded into the universe as we know it. In brief, having first emptied space as much as we could, we are now making it as small as we can. This zero-dimensional space is further considered subject to the same laws of physics that were found to apply to the expanded (physical) space. Now, the same reason why we cannot conceive space to be absolutely empty also precludes us from conceiving space as truly zero-dimensional. Due to Heisenberg’s principle, any point will be smeared out, so to speak, in both time and space. Hence, on Krauss’s second view, nothing thus becomes a near-zero-dimensional boiling brew of virtual spaces, subject to the laws of physics. In brief, whereas Krauss earlier conceived nothing to be the emptiest physical space possible, now he is making that space as small as it can possibly be. Taken in this way, Krauss’s view that the first two views are *both* perfectly legitimate interpretations of nothing becomes clearer (174).

To all of this, however, philosophers or theologians can again plausibly reply that this does not adequately capture what we mean by nothing, most importantly because it still entails that there is something; a recognition that allows us to repeat the question: Where did it come from? Or better, how did it come to be? The same philosophers and theologians can further argue that we do not necessarily need an *empirically* grounded notion of nothing, which continues to be Krauss’s major concern, and that there is no need

to restrict what nothing can be to what the current laws of physics allow it to be. What suffices is a notion that is consistent with our established empirical findings, and if we want to stick to Krauss's attempt to prove that the universe emerged out of nothing (and as I will show it is by no means clear that we should), it must enable us to conceptualize how our universe (could have) emerged from it. In any case, Krauss seems to realize that his second conception of nothing does not go far enough, and this brings us to his third view.

NOTHING CONCEIVED AS LAWLESS, SPACELESS EMPTINESS

On the third view, nothing precedes not only things in space, or space itself, but also the laws of physics that were taken to govern this empty space and its emergence. On this third view, the nothing from which the universe emerged is not in any way subject to the laws of physics. This means that if we want to maintain, as does Krauss, that physics, or science more generally, is capable of addressing whether the universe emerged from nothing (146), then physics, or science more generally, must be able to account for the emergence of the laws of physics out of nothing also. The laws of physics, again, are clearly something, even though arguably they don't have any measurable properties.

Regarding the origin of the laws of physics, it appears that Krauss has painfully little to offer, stating that they "may have come into existence ... by some yet unknown but possibly purely physical process" (142); a view that does not put him in a substantially better position than those theologians who suggest that the laws of physics could be the product of a divine intelligence, about which they too admit they know very little.

The claim that nothing *precedes* the laws of physics, however, must not be taken to imply that these laws somehow emerged from nothing before being applied to anything, but rather that they emerged together with what they applied to. It means that the laws of physics as we know them evolved from more primitive laws—that in its evolution the universe became more lawful, with the first laws possibly emerging, not from nothing, but from lawless something. Such an evolutionary conception of the laws of physics also goes back to Peirce, who posited it in the early 1890s in conjunction with his claim that the universe emerged from nothing.³⁴

In his discussion of the third type of nothing, Krauss relies heavily, if not entirely, on multiverse theory.³⁵ The emergence of our universe is not some unique and unprecedented event, he writes, rather nothing is continuously spawning universes of various shapes and duration. The multiverse idea allows us to say that the emergence of *our* universe is not some inexplicable singular event, but a logical consequence of a somehow well-behaved random process that is physical, and which sooner or later necessitates the emergence of a universe such as ours. As Krauss puts it, "Under the general principle that anything that is not forbidden is allowed, then *we would be guaranteed*, in such a picture, that some universe would arise with the laws that we have discovered" (176; emphasis added). In this way multiverse theory can explain the origin of *our* universe; it can explain why, seemingly against all odds, *our* universe had to emerge.

There are various problems with multiverse theories, and many physicists find them so unscientific that they prefer to shove them onto the philosopher's plate, which does not bode well for Krauss's insistence that physics is up to the task (146).³⁶ However, I don't think I want them on my plate either. A crucial point where Krauss and cosmologists like him seem to go wrong is that they believe (tacitly or not) that a true theory of the origin of our universe must explain how a universe like ours was guaranteed to arise, since it is the origin of *our* universe that they are seeking to explain, and since explaining something, at least for the physicist, seems to mean showing it a product of the laws of physics. Taking the view that something like our universe is guaranteed to emerge makes sense for the theist, for whom our universe is the one that God presumably intended, but much less so for the physicist. In fact it can be argued that physicists that take this view simply fail to break loose from the theist's playbook. Nothing may be unstable, as Krauss claims it is, but that doesn't mean it had to generate *our* universe, or even something like it; it only means that something had to come out of it, and that what happened to come out of it, possibly among other things, or instead of other things, is our universe. Now, to admit that our universe may be contingent doesn't make it inexplicable. The Battle of Waterloo was a contingent event. Things could have turned out such that it never

happened, or that it happened very differently. But we can still explain after the fact why it happened the way it did. To acknowledge that the emergence of our universe was not necessary, and take a historical-evolutionary approach, allows us to avoid the conceptual overkill that furnishes multiverse theories.

What I want to focus on, however, is an aspect of multiverse theory that echoes the discussion so far. Krauss describes the multiverse as follows: “In a multiverse of any of the types that have been discussed, there could be an infinite number of regions, potentially infinitely big or infinitesimally small, in which there is simply ‘nothing,’ and there could be regions where there is ‘something’” (177). Hence, for Krauss, a multiverse has regions. Some of them are big, others small; some of them are empty, others not, etc. This shows that he is still trying to conceptualize nothing in terms of empty space. Put briefly, this third view of nothing is conformant with the second view, which had the universe emerge from a point, albeit that this point is now given a location in what Krauss calls “a landscape of universes” (176), and that in the process of this the laws of nature somehow emerged. There is, however, no mechanism put in place to explain how this is supposed to work beyond the observation that our universe is a possible outcome, so that in the end it had to emerge. Crucially, no argument is given for why the laws of statistics would apply to this “landscape of universes.” In brief, nothing is reduced to a space where universes are spawned spontaneously and in large numbers. So it seems that in the end Krauss is simply unable to conceptualize nothing in any other way than as an empty space. To this philosophers and theists can again plausibly respond that claiming that our universe emerged within a landscape of universes, even if correct, falls far short of proving that it emerged out of nothing. In fact, by maneuvering ourselves into a position where we now have to prove that the entire multiverse emerged out of nothing, we seem to have made our task quite a bit more complicated. No wonder that more down-to-earth physicists want to excise it from their discipline.

A RETURN TO PURE NOTHING?

Where does this all leave us? Physics has done a great job, and is still doing a great job, exploring the workings of the universe and tracing its origin. It seems, though, that claiming, as Krauss has done, that it has proved, or is close to proving, that the universe emerged from nothing is a gross overstatement and is misleading. It is the product of changing what we mean by the word nothing—a change that is mostly supported by revisionist history, a lack of understanding of how a priori concepts work, and deliberately ignoring how the term is actually used. I hope to have at least indicated that there is still valuable (philosophical) work to be done interpreting what can be meant by nothing, and that Krauss has continuously tried to make something out of nothing. Most significantly, by failing to properly come to terms with the concept, Krauss continued to conceptualize nothing as empty space, to which the natural response is that this is not how the term is used and that empty space does not even qualify as nothing—it is empty space, which is something. The result is that in the end Krauss begs the question: The problem of how something could have emerged from nothing is solved by making nothing mean a particular kind of something; the question is answered by defining it away. Hence, rather than confronting the theologian, as Krauss claims to be doing, he changed the subject while pretending that he did not.

Krauss can retort to this, as he has done, that the conceptions of nothing as theologians and philosophers entertain them are meaningless or nonsensical. To this there are basically two responses. One can say that the term *does* have meaning, or one can admit that it does not. Both spell trouble for Krauss. If it is the first, he should not have ignored it; if it is the second, if nothing spells meaningless gibberish, he should have rejected the very idea of trying to prove that our entire universe emerged from it. Concisely put, in the first case he is blocking the road of inquiry; in the second he is setting it on the wrong path.

With regard to the road that is being blocked, opening it up requires importing into physics a concept that is not derived from its theories. It requires taking seriously the idea, conceived a priori, of nothing as “the absence of anything,” and to seriously explore what can be done with it. This is likely to be an a priori philosophical/mathematical project aimed at connecting this notion of nothing with the simplest or emptiest something that physics can come up with. Physicists may balk at this, as it lacks a much-needed cor-

rective influence of hard fact, but all that all that would be needed is one plausible account of how the earliest state of our universe, as described by physics, could have emerged, unconditionally, from a state of pure nothing. All we need is one theory, or model, that is clearly more parsimonious than the current alternatives, whether they are versions of intelligent design theory, or posit an endlessly spawning multiverse. This task is further greatly facilitated when we relinquish the rather haughty hypothesis that once nothing is granted something like our universe is guaranteed to emerge.

With regard to setting physics on the wrong path, one can try to get it back on track by returning to the question that spurred it all—the attempt to explain why there is something rather than nothing—and the physicist’s claim that this question can be answered while remaining within the realm of physics.

The question “Why is there something rather than nothing?” famously goes back to Leibniz and was motivated by a feeling that the world we find ourselves in demands some sort of explanation—or, in Leibniz’s words, the world by itself does not present a sufficient reason for its existence.³⁷ The existence of the world is not self-explanatory, because it seems at least possible, and perhaps even more likely, that there would not have been anything at all. In fact, immediately following the question, Leibniz tells us why he is asking the question. He is asking it, he writes, because “nothing is simpler and easier than something.”³⁸ Leibniz’s phrasing is interesting because of what it does not imply. It does not imply that nothing requires no explanation at all—suggesting that once we have shown how the universe emerged out of nothing we have somehow fully explained why the universe exists. Far from it, it seems that, for Leibniz at least, nothing needs an explanation too. Consequently, if we could conceptualize pure nothing—the “nonbeing” that is so abhorrent to Krauss (xiv)—and show how the universe could have emerged from it, then our explanation would *still* be incomplete. We must also be able to account for this nothing from which the universe purportedly emerged.

This suggests that perhaps a better way of approaching the entire issue is to start by asking whether this nothing from which the universe is said to have emerged is a possible physical state of being to begin with. If we take this course, then we discover fairly quickly that if there were truly nothing, then there would be absolutely nothing to keep it absolutely nothing, making it, so to speak, the ultimate unstable equilibrium. If there is nothing, then there is nothing to prevent anything from happening, possibly including the creation of virtual universes, though they seem too elaborate as a “first step.” If this is correct, if nothing is indeed inherently unstable, then Leibniz had it wrong. As long as we think of something as there “being anything at all,” and not as there “being anything in particular,” then it is *something* rather than nothing that is simpler and easier, as something can more easily be conceived to remain something. This means that we do not need to prove that the universe came out of nothing to *disprove* the claim that the universe needs a divine creator, which is what Krauss is trying to do. Quite the opposite, one would need a divine creator, and a mighty powerful one at that, for nothing to be sustainable. We’ll have to imagine a god who continuously has to work really hard at *preventing* anything from happening. Put differently, that our universe exists, with all its peculiarities, is much more likely than that there is absolutely nothing at all. But if that is the case, then we cannot *explain* our universe by showing how it emerged from nothing. The purpose of such an explanation would be to show that the universe is a likely outcome of something simpler and perhaps self-explanatory. But the exact opposite seems to be true here: we would be trying to explain something by showing how it can be conceived as a natural outcome of a state that is so unlikely as to be virtually inexplicable. Consequently, it appears that the physicist’s quest to prove that the universe emerged from nothing (and to claim that this shows that therefore there is no longer any need for a divine designer) is a red herring.

However, to claim, as Krauss has done, that we are better off replacing this utopian notion of nothing with an empirical one, seems neither necessary nor advisable; it is, to adapt a venerable British expression, like flogging a red herring.³⁹ If we accept that nothing and something are the only two options, and find that nothing is extremely unlikely to ever be, then we are left with the conclusion that there has to be something—and that the question to be answered is not “why is there something rather than nothing?” but rather: wherefrom comes the order that we perceive in the universe—how could this enormous, law-governed and practically empty space have emerged from something that may have been none of that?⁴⁰

Perhaps it is good to recall at this point why theologians found it necessary to argue that God created the universe out of nothing. They did so, not because Scripture decrees it, or nature suggested it, but because they thought that any other account of creation would run counter the belief that God is omnipotent. If God created the world out of something, then there was something out of which he created the world; that is, then there was some medium he had to struggle with and adapt himself to, as if he were a mere carpenter, sculptor, or painter. In contrast, the more modest claim that God, or an intelligent designer, created the world *without* this being a creation out of nothing, can be considered to have long been a scientific claim that was directly inspired by nature, as until only recently it was the best if not the only credible explanation for the order that we perceive within the world.⁴¹ Put differently, the claim that God created the world “out of nothing,” or *ex nihilo*, has always been a purely theological claim, as it is grounded not in the perceived order of nature but in the dogma that God is omnipotent. Consequently, the physicist who is trying to prove that the universe emerged from nothing is unwittingly following the theologian’s research agenda rather than his own—a research agenda that is inspired not by anything found in the domain of physics (i.e., nature), but by the claim that God exists and is all-powerful. This leads to the interesting situation that physicists who ignore the theologian on this point are not blocking the road of inquiry, whereas physicists, like Krauss, who take up the challenge they perceive the theologian posing are blocking the road of inquiry. They do so by introducing into physics something that does not belong there and let *it*, rather than the findings of physics itself, determine what the debate should be like in physics—what questions to pursue, what counts as an answer to certain questions, etc. It is on a par with biologists letting their discipline be infected by creationist presuppositions, or gerontologists who take their cues from legends about the Holy Grail.

In sum, we can conclude that when Krauss is seeking to make his case that the universe emerged out of nothing, he is truly engaging in pseudoscience. Without giving much of an argument, he dismisses non-physicist approaches to nothing as nonsensical, while at the same time insisting, again without much of an argument, that the concept that these approaches aim to capture is not nothing: there really is such a thing as nothing, it is just that philosophers and theologians are wrong when they are trying to explain what it is. In addition to this, Krauss is arguing, again without much of an argument, that this concept is of value to physicists who are studying the history of the universe. That is, he makes showing how the universe emerged from nothing an explicit part of their mission.

In response to this I argued that the term nothing as envisioned a priori by non-physicists is not nonsensical and that Krauss’s attempts to redefine it are unacceptable because they tacitly reduce nothing to a kind of something, and that his blind rejection of all that has been said about nothing by theologians and philosophers is unjustified. I have further shown how the concept as envisioned by philosophers and theologians could be meaningfully deployed in a physical account of the history of the universe, while at the same time showing why such an account fails as an explanation. As I have shown, though it may be logically possible for our universe to have emerged out of nothing, this state of nothing from which it is supposed to have emerged is such an anomaly that it is far harder to make the case for nothing than it is to make the case for something (as long as we are not making the case for any *particular* something). You cannot explain something by showing it the product of something else, something that not only lacks an explanation, but which is also far more difficult to explain than what you are trying to explain.

None of this must be taken to imply that there was always something, as if the universe were infinitely old. The reason for this is that time, like space, requires a certain type of order, and that the concept of something by itself does not necessitate that the conditions for such a type of order are met. In other words, time, like space, is not the kind of thing that can be ascribed to the something that the universe emerged from—at least not without argument. Put concisely, it is far more plausible to say that our universe did not emerge from nothing—this odd state necessitated by the requirement of an omnipotent God—but that it emerged from something, because (and here I disagree with Leibniz) something is simpler and easier than nothing.

Pseudoscience often commits two epistemic evils: refusing to ask certain questions, and making people ask the wrong ones. Both violate Peirce’s first rule of reason and risk blocking the road of inquiry. As we

have seen, in *A Universe from Nothing* Krauss commits *both* evils: the theologian Krauss blocks inquiry by refusing to take seriously classical conceptions of nothing; the physicist Krauss blocks inquiry by pushing physics in the wrong direction, by forcing upon it, *ex cathedra* (no argument is given) the theologian's research agenda—that of reconciling the dogma of God's omnipotence with the world we encounter. In doing so, Krauss has left science proper and entered into the shady netherworld of pseudoscience. *A Universe from Nothing* is a work that should be treated with great caution, not so much because its author leads us to the wrong answers, but because he is forcing us to ask the wrong questions, which is far worse.⁴²

NOTES

1. Amherst: Prometheus Books, 2003.
2. Susan Haack, "Six Signs of Scientism," *Logos & Episteme* 3.1 (2012): 75–95, p.75. Whereas in *Defending Science*, Haack primarily criticizes those who under-value science, in both "Six Signs" and her 2016 Agnes Cuming Lectures, *Scientism and Its Discontents* (London: Rounded Globe, 2017), her main focus shifts to those who over-value science.
3. Even a cursory acquaintance of the history of science will bear this out. For a more detailed account, see e.g., Peter Harrison, *The Bible, Protestantism, and the Rise of Natural Science* (Cambridge: Cambridge University Press, 1998).
4. Lawrence M. Krauss, *A Universe from Nothing: Why There Is Something Rather than Nothing* (New York, Free Press, 2012). After this paper was substantially completed I learned that several women accused Krauss of sexual harassment, and later that year it came out that Jeffery Epstein, a convicted pedophile who Krauss publicly defended, was a major donor to his Origins Project. (See e.g., Matthew Haag, "Lawrence Krauss to Retire From Arizona State After Sexual Misconduct Accusations," *The New York Times*, 22 October 2018, and Peter Aldhous, "Jeffrey Epstein's Links To Scientists Are Even More Extensive Than We Thought," *BuzzFeed*, 26 August, 2019.) It seems, though, that poor choices regarding his relations to women and financiers, assuming the accusations correct, should not preclude one from revealing his poor intellectual choices.
5. See e.g., Edward P. Tryon, "Is the Universe a Vacuum Fluctuation?" *Nature* 246 (1973) 396f.; Alexander Vilenkin, "Quantum Origin of the Universe," *Nuclear Physics B* 252 (1985): 141–52, and "Creation of Universes from Nothing," *Physics Letters* 117B, 1–2 (4 November 1982): 25–28; David Atkatz and Heinz Pagels, "Origin of the Universe as a Quantum Tunneling Event," *Physical Review D* (15 April, 1982): 2065–73; J.B. Hartle and Stephen W. Hawking, "The Wave Function of the Universe," *Physical Review D* (1982): 2960.
6. See e.g. *The Collected Papers of Charles S. Peirce* 8 vols, edited by Charles Hartshorne, Paul Weiss, and Arthur Burks (Cambridge: Harvard University Press, 1931–58), cited by volume and paragraph number: CP 6.189–209 (1898).
7. CP 1.135 (1898).
8. Susan Haack, *Evidence Matters, Science Proof, and Truth in the Law* (Cambridge: Cambridge University Press, 2014), p. 12. A fascinating case in point is that of the French microbiologist Didier Raoult. See Scott Sayare, "He Was a Science Star, then He Promoted a Questionable Cure for Covid-19," *The New York Times Magazine*, 12 May 2020.
9. I have capitalized "god" where it can be interpreted as the name of a divine being that is referred to in canonical texts within the Judeo-Christian-Islamic tradition on the ground that names are normally capitalized; otherwise it is lowercased.
10. Lawrence M. Krauss, *A Universe from Nothing*, op. cit.; references to this work are given in-line by page number only.
11. For Peirce discussion of the economy of research, see e.g., *The Writings of Charles S. Peirce*, edited by the Peirce Edition Project (Bloomington: Indiana University Press, 1981–) 4:72–8.
12. Charles S. Peirce, "On Science and Natural Classes," in *The Essential Peirce* Vol. 2, edited by the Peirce Edition Project (Bloomington: Indiana University Press, 1998), pp. 115–132.
13. Lawrence Krauss, "The Consolation of Philosophy," *Scientific American*, 2012.

14. See Haack, 2017, *passim*.
15. Lawrence Krauss, 2012, *op. cit.*
16. See e.g., Seth J. Schwartz, Scott O. Lilienfeld, Alan Meca, and Katheryn C. Sauvigné, “The role of neuroscience within psychology: A call for inclusiveness over exclusiveness,” *American Psychologist* 71.1 (Jan 2016): 52–70.
17. The Catholic theologian Matthew Lamb expresses the same idea quite nicely when he writes: “The roots of dogmatism and nihilism in modernity, as in other epochs, is the fallacy of misplaced normativeness. It is the process of making *the products* of intelligence and reason as normative rather than *the questioning praxis* of intelligence and reason.” See Matthew Lamb, *Eternity, Time, and the Life of Wisdom* (Naples, FL: Sapientia, 2007), p. 132; emphasis added. However, given Lamb’s position regarding the Magisterial teachings and his insistence on the *mandatum*, he can be rightfully accused of falling victim to the fallacy himself.
18. My conception of pseudo-inquiry is, I think, broader than Haack’s, who writes, “The distinguishing feature of pseudo-inquiry is that what the ‘inquirer’ wants is not to discover the truth of some question but to make a case for some proposition determined in advance,” in that my conception includes both sham and fake reasoning. See *Manifesto of a Passionate Moderate* (Chicago: University of Chicago Press, 1998), p. 8.
19. Much of Haack’s *Scientism and Its Discontents* (*op. cit.*) is directed against those who want to make philosophy scientific in the narrow sense, while retaining the idea that philosophy can be conceived as part of science if science is conceived broadly in a Peircean manner.
20. CP 1.136f.
21. Susan Haack, “Do Not Block the Road of Inquiry,” *Transactions of the Charles S. Peirce Society* 50.3 (2014): 319–39.
22. David Albert, “On the Origin of Everything,” *The New York Times* (25 March 2012): BR20.
23. Susan Haack, *Putting Philosophy to Work*, 2nd expanded edition (Amherst: Prometheus Books, 2013).
24. Lawrence Krauss, 2012, *op. cit.*
25. *Ibid.*
26. For a detailed account of the history of the concept of nothing and its relation to that of a vacuum, see Edward Grant, *Much Ado about Nothing: Theories of Space and Vacuum from the Middle Ages to the Scientific Revolution* (Cambridge: Cambridge University Press, 1981).
27. Krauss, 2012, *op. cit.* There are various problems with this view. For instance, when I’m thinking of a school bus, I’m thinking of something, I’m clearly not thinking of nothing, even though the school bus I’m thinking of is unlikely to be the kind of thing that can be captured in terms of one or more physical quantities. One would have to subscribe to a pretty radical form of reductive materialism that has yet to be properly argued for, especially if one takes the empirical route.
28. Interestingly, Krauss’s view that something is some kind of property removes a key objection of Anselm’s ontological argument for the existence of God.
29. “Scholium to the Definitions,” *Philosophiae Naturalis Principia Mathematica* 1 (1689); trans. Andrew Motte (1729), rev. Florian Cajori (Berkeley: University of California Press, 1934), pp. 6–12. And, importantly, this was not an empirical discovery.
30. The only way something can escape the time constraint set by the Heisenberg principle is where particles cancel each other out so that the law of the conservation of energy is not violated in the process.
31. Though the aim of this second step seems that of addressing those who deny that nothing is empty space, the choice of words indicates that rather than rejecting that nothing is empty space, Krauss continues to identify it as such, albeit that this nothing is somehow less fundamental. In a sense the difference that is being drawn is the ages-old distinction between the intra-cosmic and the extra-cosmic vacuum (or void). See Grant, *op. cit.*, *passim*.
32. In *The City of God* (early 5th century AD) and elsewhere Augustine tries to interpret the opening chapters of *Genesis* so that they agree with the idea of God creating the universe *ex nihilo*. In the process Augustine runs into some of the very same issues that Kraus is raising. See e.g. Bk. XI, Ch. 4–6.
33. See e.g., Alan Guth, *The Inflationary Universe: The Quest for a New Theory of Cosmic Origins* (Reading: Addison-Wesley, 1997).
34. *The Writings of Charles S. Peirce*, *op. cit.*, 8:107 (1890).

35. The notion of multiverse has been used to discuss the existence of other universes existing beyond the observable universe, which is now identified as being our universe. Some have conjectured that very different laws of physics can govern such other universes, which is possible because they are in no way connected to our universe given the speed of light. The notion of a multiverse used here, however, is different, in that it has to explain the big bang itself, hence it must simultaneously explain the origin of the observable universe and anything that might exist beyond it.
36. One could even go as far as to say that in all of this the physicist does not fare any better than the theist. True, the theist can be accused of violating Occam's razor by frontloading his account of the origin of the universe with a designer-god, but the multiverse hypothesis, which postulates a large and possibly infinite number of universes, does plenty of frontloading too. Moreover, there is no empirical proof for either, and the prospects of obtaining it are dim.
37. See esp. G.W.F. Leibniz, "The Principles of Nature and Grace, Based on Reason [1714]," in Philip P. Wiener, *Leibniz Selections* (New York: Charles Scribner's Sons, 1951). Leibniz was certainly not the first to ask the question. Already in the 4th century, St. Augustine asked (*De Civitate Dei*, Bk. 11, Ch. 21) why God created the universe (which Augustine considered to be a *creatio ex nihilo*). Since God might as well have not created it, he must have had a reason for doing it. Augustine's answer was that God did create the universe because God thought it was good. Hence, Augustine's answer, inspired by *Genesis* 1:1–5, was that the universe exists because it is *better* than nothing. See *The Works of Aurelius Augustine*, edited by Marcus Dods (Edinburgh: T&T Clark, 1871–83), 1:461.
38. Leibniz, op. cit., p. 527.
39. Note further that if we take an *empirical* approach to nothing, the response to the question "Why is there something rather than nothing?" will not be that Leibniz's presupposition was wrong (i.e., the idea that nothing is easier and simpler than something), but that the question itself is wrong, because with a average density of less than a handful of protons per cubic meter, the conclusion has to be that on all reasonable accounts the universe is empty, so that there is *nothing* rather than something, and that the reason why Leibniz thought otherwise is due to him being biased. It is as if he were to sit on a little speck of dust floating in an empty room pondering why the room isn't empty, rather than realizing that his presence, and that of the speck, are so insignificant that they do not demand any explanation.
40. It is further worth noting that the claim that the universe emerged out of nothing privileges linear over cyclical time, which too has its origin in theology—linear time having been inspired by the idea that cyclical time would require Jesus to die on the cross over and over again, which was considered absurd. The result was that the universe was envisaged to run in a straight line from Creation to Apocalypse. See e.g. Pascal Richet, *A Natural History of Time* (Chicago: Chicago University Press, 1999), p. 29f.
41. In that sense cosmological design arguments for the existence of God are very different from the idea of a creation *ex nihilo*.
42. Though the universe may have emerged out of nothing, this paper certainly did not, and in many ways its Big Bang was caused by a powerful fusion of the views of Charles S. Peirce and those of his sympathetic and insightful critic, Susan Haack. I further want to thank Kelly de Waal, and Mark Migotti for their insightful comments. An earlier version of this paper was read at the *American Philosophical Association, Central Division*. Meeting in Denver, Colorado, 20–23 February 2019.

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Studies in Emergent Order and Organization
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