

## Week One: Introduction to Philosophical Theories of Scientific Naturalism:

I. Plan:

1. Many philosophical problem-areas are local and bounded, deriving their interest from the way they fit into larger issues and programs. (I have, for instance, taught survey seminars like this one on such topics as propositional-attitude-ascribing locutions, indexicals and demonstratives, and metaphor.) Others are global, general, and ubiquitous, themselves providing the horizons within which other more limited concerns arise. Naturalism is one of the latter kind, providing an important perspective on the contemporary philosophical enterprise itself.

2. Our focus and concern in this seminar is with the current state of play, and as a result the vast majority of what we will read has been written in the last 15 years. (I'll discuss a few exceptions, and the rationale for them, further along.)

3. But we need to have a sense of the context in which the particular—often quite technical—issues we will be wrestling with arise and acquire their significance (so that you know the larger reasons why it is worth worrying about various definitions of supervenience, the details of Craig's theorem, and two-dimensional modal logic, for instance).

4. For that reason, I am going to start with a very wide-focus take on the historical run-up to the contemporary scene.

- I'll do that by starting with a broad brush-stroke account of what I see as the four phases of naturalism: a) Enlightenment naturalism, b) Nineteenth century pragmatism, c) Twentieth-century analytic philosophical naturalism, and d) Contemporary naturalism.
- I'll then tighten the focus a bit, to look briefly at the Vienna Circle version of twentieth-century philosophical naturalism.
- And then focus more finely on the moves and considerations that transformed their understanding of the problem into the situation we find ourselves in today.

5. Then I'll discuss what we'll be reading and thinking about in each of the four parts into which this course is roughly divided:

- a) Consideration of *physicalism, reduction, and supervenience*;
- b) Post-holing, for definiteness, in Frank Jackson's Locke Lectures: *From Metaphysics to Ethics*, which propounds and pursues a particular contemporary version of naturalism.
- c) Sellars's *scientia mensura*, the restriction of naturalism to “the dimension of *description and explanation*”, and the ontology-without-ideology, token-token identity approach he shares with Davidson. Topic: the *scientia mensura*: “In the dimension of description and explanation, science is the measure of all things: of those that are, that they are, and of those that are not, that they are not.” We will worry about every element of this claim: the preamble qualification, ‘science’, ‘measure’, ‘all things’, and whether the ‘are’ and ‘are not’ is restricted to objects only, or includes properties and (so) facts. Topic: the *scientia mensura*: “In the

domain of description and explanation, science is the measure of all things: of those that are, that they are, and of those that are not, that they are not.” We will worry about every element of this claim: the preamble qualification, ‘science’, ‘measure’, “all things”, and whether the ‘are’ and ‘are not’ is restricted to objects only, or includes properties and (so) facts.

d) Contemporary *expanded-nature naturalism, pragmatic naturalism, and the new non-naturalisms*. In connection with this, I will say something first about *traditional non-naturalism*:

- e)
  - i. Its Romantic, counter-Enlightenment basis in concern with art rather than science, feeling rather than thought, individuality rather than universality. Where society is considered, it is *Gemeinschaft* rather than *Gesellschaft*, that is, societies thought of as a kind of individual, rather than as the sum of a bunch of individuals.
  - ii. Basic claim: sovereignty of natural science *within its proper domain* gives it no claim to *hegemony* over *other* domains of discourse and inquiry. In particular, the human, hermeneutic sciences properly employ different *methods*, and use different *concepts*, in pursuit of what is and must be recognizable as true descriptions, genuine knowledge, correct explanations, and adequate understanding.
  - iii. On this view, natural science is sovereign within its own domain (however that might be delimited) but, first, that domain is limited, and second, that domain has, as such, no priority or privilege relative to other discursive domains or forms of life. As an analogy, Ryle considers his Oxford college Bursar, who claims that his financial record book *describes everything that goes on in the college*. Where, Ryle wants to know, is the representation of the increase in team spirit that has been noticeable for the rowing four? The charge for the food at the rally does not seem to suffice. [Note that Ryle seems to be denying that everything that happens in the college even *supervenes* on the Bursar’s accounts.] Heidegger, and Wittgenstein are other prominent deniers of *scientific* naturalism. The later Wittgenstein’s anti-scientistic non-naturalism is, I think, the principal reason that the biggest sociological-cum-intellectual cultural split in contemporary Anglophone philosophy is between those who think Wittgenstein is really important, and those who do not.
  - iv. To what extent the *ontological* authority of natural science is *exclusive*: that is, not just that what science says exists or is true, but that nothing else does or is. [Note that eventually (in the third quarter of the course) I want to focus on the strategy of driving a wedge between what there is and what is true, between ontology and explanation.]
  - v. To what extent the *epistemological* authority of natural science is *exclusive*. Cf the debate about whether and in what sense *Geisteswissenschaften* should be understood both to have a *different* methodology—say, a hermeneutic one, involving, broadly, the interpretation of *texts*—and nonetheless to be legitimate. (And what sense of ‘legitimate’ is at issue here: a matter of potentially yielding *knowledge*, or *understanding*? A matter of *ontological* import, in the sense that they let us find out about *non-natural* objects that are nonetheless *real*?)

vi. The issue of the *causal completeness* of natural science: what it means, is it true, and what follows if it is true. This is the sort of “sovereignty within its own domain” (“the dimension of describing and explaining” as the qualifying clause of the Sellarsian *scientia mensura* has it?) that may or may not entitle it to special authority (ontological, methodological, ideological?) over other kinds of discourse or inquiry.

6. Finally, I’ll say something about the housekeeping details of the course (including scheduling [shift to 3:00 starting time?], and for those of you taking the course for credit, how and when I want you to think about the topic for your term papers.

## II. Historical Run-up: Phase One, Enlightenment naturalism.

[Here I’ll be rehearsing things you already in some sense know, by way of setting up our topic.]

7. One of the reasons I find Hegel important and illuminating is that while all the big Enlightenment philosophers, from Descartes to Kant, contributed significantly to the body of concepts and theories that formed the fighting faith of modernity, Hegel was the first to take the titanic transformation that was the advent of modernity as his explicit topic. Belonging to the generation contemporary with the French Revolution, of whom Wordsworth said: “Joy was it then to be alive—Ah, but to be young was perfect bliss,” (a saying truer of the somewhat younger Shelley than of him), Hegel took it that only one really big thing had ever happened in the history of humanity, and that was the Great Change from the traditional to the modern that he was living through. By its end, he was confident that once “the last king had been strangled with the guts of the last priest,” (in Voltaire’s charming phrase), and God was finally dead (in the phrase Nietzsche borrowed from Hegel), humankind would finally stand up on its own feet, liberated by the realization that what we ought to do could not simply be read off of how things were in the non-human world, and set about the task of deciding what to become. As Hegel emphasized, the cultural transformation effected by the rising tide of modernity had social, political, and economic dimensions, as well as purely intellectual ones. But at its intellectual core lay Enlightenment science and philosophy.

8. Modern philosophy is the history of engagement with the rise of science, as the attempt to fit us into the scientific world, to learn the lessons about us, the world, and the relations between them that ought to be drawn from the success of scientific description and explanation. So Enlightenment philosophy was all, in the broadest sense, philosophy of science. It was a response to the need to rethink our understanding of our own nature in the light of the discovery that, as Galileo put it, “the book of nature is written in the language of mathematics.” What could we find out about the world, ourselves, and our relation to the world based on the fact that the best way for us to understand the world is through mathematical physics? Again, given the radically new picture of the world delivered by the new science, how are we to understand our relation to that world, both as part of the nature revealed by science, and as the ones who reveal that nature by doing science? The philosophical topic of *naturalism* is made urgent by the Scientific Revolution. Insofar as Alexander Pope was right that “the proper study of mankind is

man,” what do we learn about *human* nature from what we have learned about *non-human* nature?

- Should we understand ourselves by the same *methods* used to understand nature? Enlightenment *empiricism* is one sort of positive answer to this question, emphasizing the role in the new science of *observation* through *perception*. Enlightenment *rationalism* is another sort of positive answer to this question, emphasizing the role of *reasoning* and *theorizing* in doing that science.
- Should we understand ourselves in the same *terms* we use to understand the rest of nature—that is, as part of that nature, to be made intelligible by developments of the very same theories used to make intelligible the motions of inanimate, inarticulate matter? Enlightenment *materialism* is one sort of positive response to this thought. In one way or another, all the great philosophers of this period took *naturalism* as their topic:
  - Descartes used the relation between algebraic formulae and geometrical figures (which Galileo had shown to be a powerful language for expressing kinematic relations) as the model of the relation between the human mind and what it represents and, in virtue of the systematic relations between those representations, understands.
  - Spinoza largely follows him in this. “The order and connection of things is the same as the order and connection of ideas.” He worked out a picture of finite human minds as cloudy, incomplete mirrors of nature, which by the practice of science could eliminate the error and ignorance that were on the one hand all that distinguished human minds from one another, and on the other hand were all that distinguished them all from the mind of Deus-sive-Natura. The scientist’s impersonal pursuit of universal knowledge, available to each through the use of his own natural light of reason, becomes the *moral* ideal in terms of which we are to understand human beings.
  - Leibniz takes it that a physics suitably enlarged from kinematics to dynamics will have to include the resources to describe mental activities.
  - Locke applies the methods of the empirical sciences to the study of the human mind.
  - Hume aspires to be “the Newton of the mind.”
  - And Kant both thinks through the consequences of moving from Aristotelian principles of individuation by substance and accident to Newtonian spatiotemporal principles of individuation, and the presuppositions, as he sees them, of the discovery of the modally fraught *lawfulness* of nature for our understanding of ourselves and our understanding.
  - Notice that *none* of these philosophers is a naturalist in the sense of a *materialist* about the mind. Each thinks that new principles of some kind, beyond those invoked in the natural science of their time, would be needed to deal with intentionality.

Philosophy is important because we have to come to terms with the achievements of modern science. Issues of *naturalism* are accordingly the principal philosophical issues:

- Is the world as revealed by natural science the *whole* world?
- Are the methods of natural science the *only* methods that yield true descriptions, genuine knowledge, correct explanations, and adequate understanding?
- Are *we* part of the world the truth about which we can expect to discover through natural scientific investigations?

On this last score, the two main problem areas on which philosophers have focused, then as now, are:

- The *mind*, intentionality and consciousness, sapience and sentience; and
- *Normativity* of all sorts, perhaps with special emphasis on the species of *moral* normativity that Enlightenment philosophers (looking back over their shoulders at the ancient Greeks) had invented as a successor notion to theologically based deontology—whose metaphysics they hoped to have made literally unbelievable.
- Another way of thinking about this latter issue is that orthogonal to the issue of whether there are two sorts of *theoretical* understanding (one for the Natur- and one for the Geisteswissenschaften [What is to the former as ‘hermeneutic’ is to the latter? Should not give the generic notion of explanation to the natural sciences without a fight for a qualifying adjective, nor reserve the notion of understanding to the latter likewise.]), there is the issue of how to think about the relation between *theoretical* reasoning (with the natural-scientific paradigm) and *practical* reasoning. The latter is, arguably, the domain made explicit by the use of distinctively *normative* vocabulary. Are these two kinds of *rationality*? What authority should natural science be taken to have with respect to the latter, practical kind? To be scientific naturalists about normative discourse (which Sellars apparently means explicitly to rule out by the preamble to his *scientia mensura*), must we claim the reducibility in some sense of practical to theoretical reasoning?

9. But the Scientific Revolution, the Bourgeois Revolution in civil society, and the French Revolution together turned out not to be as decisive in making the shift to modernity *final* and *irrevocable*, when compared to the Industrial Revolution, which was the technological arm of the Scientific Revolution institutionalized as a *business*. (Just as some people thought that the Terror was the practical *reductio ad absurdum* and refutation of the French Revolution, and so of modernity in politics, many thought that the Nazi concentration and slave labor camps and the Soviet gulags were the practical *reductio ad absurdum* and refutation of the technological impulse of the Industrial Revolution as applied to the understanding of human beings, and hence of modernity in that form.) But Enlightenment naturalism took a new form.

### III. Historical Run-up: Phase Two, Classical American Pragmatist Naturalism.

10. [There follow the first 12 ‘graphs of my “The Pragmatist Enlightenment...”] Classical American pragmatism can be viewed as a minor, parochial philosophical movement that was theoretically derivative and practically and politically inconsequential. From this point of view—roughly that of Russell and Heidegger (Mandarins speaking for two quite different philosophical cultures)—it is an American echo, in the last part of the nineteenth century, of the British utilitarianism of the first part. What is echoed is a crass shopkeeper’s sensibility that sees everything through the reductive lenses of comparative profit and loss. Bentham and Mill had sought a secular basis for moral, political, and social theory in the bluff bourgeois bookkeeping habits of the competitive egoist, for whom the form of a reason for action is an answer to the question “What’s in it for me?”. James and Dewey then show up as adopting this conception of a practical reason and extending it to the theoretical sphere of epistemology, semantics, and the philosophy of mind. Rationality in general appears as instrumental intelligence: a generalized capacity for getting what one wants. From this point of view, the truth is what works; knowledge is a species of the useful; mind and

language are tools. The instinctive materialism and anti-intellectualism of uncultivated common sense is given refined expression in the form of a philosophical theory.

The utilitarian project of founding morality on instrumental reason is notoriously subject to serious objections, both in principle and in practice. But it is rightfully seen as the progenitor of contemporary rational choice theory, which required only the development of the powerful mathematical tools of modern decision theory and game theory to emerge (for better or worse) as a dominant conceptual framework in the social sciences. Nothing comparable can be said about the subsequent influence of the pragmatists' extension of instrumentalism to the theoretical realm. In American philosophy, the heyday of Dewey quickly gave way to the heyday of Carnap, and the analytic philosophy to which Carnap's logical empiricism gave birth supplanted and largely swept away its predecessor. Although pragmatism has some prominent contemporary heirs and advocates—most notably, perhaps, Richard Rorty and Hilary Putnam—there are not many contemporary American philosophers working on the central topics of truth, meaning, and knowledge who would cite pragmatism as a central influence in their thinking.

But classical American pragmatism can also be seen differently, as a movement of world historical significance—as the announcement, commencement, and first formulation of the fighting faith of a second Enlightenment. For the pragmatists, like their Enlightenment predecessors, reason is the sovereign force in human life. And for the later philosophes, as for the earlier, reason in that capacity is to be understood on the model provided by the forms of understanding distinctive of the natural sciences. But the sciences of the late nineteenth century, from which the pragmatists took their cue, were very different from those that animated the first enlightenment. The philosophical picture that emerged of the rational creatures who pursue and develop that sort of understanding of their surroundings was accordingly also different.

Understanding and explanation are coordinate concepts. Explanation is a kind of *saying*: making claims that render something intelligible. It is a way of engendering understanding by essentially discursive means. There are, of course, different literary approaches to the problem of achieving this end, different strategies for doing so. But there are also different operative conceptions of what counts as doing it—that is, of what one needs to do to have done it. It is a change of the latter sort (bringing in its train, of course, a change of the former sort) that the pragmatists pursue. For the original Enlightenment, explaining a phenomenon (occurrence, state of affairs, process) is showing why what *actually* happened *had* to happen that way, why what is actual is (at least conditionally) *necessary*. By contrast, for the new pragmatist enlightenment, it is possible to explain what remains, and is acknowledged as, *contingent*. Understanding whose paradigm is Newton's physics consists of universal, necessary, eternal principles, expressed in the abstract, impersonal language of pure mathematics. Understanding whose paradigm is Darwin's biology is a concrete, situated narrative of local, contingent, mutable practical reciprocal accommodations of particular creatures and habitats. Again, the nineteenth century was “the statistical century”, which saw the advent of new forms of explanation in natural and social sciences. In place of deducing what happens from

exceptionless laws, it puts a form of intelligibility that consists in showing what made the events *probable*. Accounts in terms both of natural selection and of statistical likelihood show how observed order can arise, contingently, but explicably, out of chaos—as the cumulative diachronic and synchronic result respectively of individually random occurrences.

The mathematical laws articulating the basic order of the universe were for enlightened thinkers of the seventeenth and eighteenth century the ultimate given, the foundational unexplainable explainers—structural features of things so basic that this explanatory residue might even (as it did for the transitionally post-religious Deists) require and so justify a final, minimal, carefully circumscribed, nostalgic appeal to the Creator. Charles Sanders Pierce, the founding genius of American pragmatism, elaborated from the new selectional and statistical forms of scientific theory a philosophical vision that sees even the laws of physics as contingently emerging by selectional processes from primordial indeterminateness. They are *adaptational habits*, each of which is in a statistical sense relatively stable and robust in the environment provided by the rest. The old forms of scientific explanation then appear as special, limiting cases of the new. The now restricted validity of appeal to laws and universal principles is explicable against the wider background provided by the new scientific paradigms of how regularity can arise out of and be sustained by variability. The “calm realm of laws” of the first enlightenment becomes for the second a dynamic population of habits, winnowed from a larger one, which has so far escaped extinction by maintaining a more or less fragile collective self-reproductive equilibrium. It is not just that we cannot be sure that we have got the principles right. For the correct principles and laws may themselves change. The pragmatists endorse a kind of *ontological fallibilism* or *mutabilism*. Since laws emerge only statistically, they may change. No Darwinian adaptation is final, for the environment it is adapting to may change—indeed *must* eventually change, in response to *other* Darwinian adaptations. And the relatively settled, fixed properties of things, their *habits*, as Peirce and Dewey would say, are themselves to be understood as such adaptations. The pragmatists were naturalists, but they saw themselves confronting a new sort of nature, a nature that is fluid, stochastic, with regularities the statistical product of many particular contingent interactions between things and their ever-changing environments, hence emergent and potentially evanescent, floating statistically on a sea of chaos.

The science to which this later enlightenment looked for its inspiration had changed since that of the earlier in more than just the conceptual resources that it offered to its philosophical interpreters and admirers. In the seventeenth and eighteenth centuries, the impact of science was still largely a matter of its *theories*. Its devotees dreamed of, predicted, and planned for great social and political transformations that they saw the insights of the new science as prefiguring and preparing. But during this period those new ways of thinking were largely devoid of practical consequences. They were manifestations, rather than motors, of the rising tide of modernity. By the middle of the nineteenth century, though, technology, the practical arm of science, had changed the world radically and irrevocably through the Industrial Revolution. From the vantage point of established industrial capitalism, science appeared as the most spectacularly

successful social institution of the previous two hundred years because it had become not only a *practice*, but a *business*. Its practical successes paraded as the warrant of its claims to theoretical insight. Technology *embodies* understanding. The more general philosophical lessons the pragmatists drew from science for an understanding of the nature of reason and its central role in human life accordingly sought to comprehend intellectual understanding as an aspect of effective agency, to situate knowing *that* (some claim is true) in the larger field of knowing *how* (to do something). The sort of explicit reason that can be codified in principles appears as just one, often dispensable, expression of the sort of implicit intelligence that can be exhibited in skillful, because experienced, practice—flexible, adaptable habit that has emerged in a particular environment, by selection via a learning process.

Like their Enlightenment ancestors, the pragmatists were not only resolutely naturalist in their ontology, but also broadly empiricist in their epistemology. For both groups, science is the measure of all things—of those that are, that they are, and of those that are not, that they are not. And for both, science is not just *one* sort, but the very form of knowing: what it knows not, is not knowledge. But in place of the atomistic sensationalist empiricism of the older scientism (which was later rescued and resuscitated by the application of powerful modern mathematical and logical techniques, to yield twentieth century logical empiricism) the pragmatists substituted a more holistic, less reductive, practical empiricism. Both varieties give pride of place to experience in explaining the content and rationality of knowledge and agency. But their understandings of that concept are very different, corresponding to the different characters of the science of their times.

The older empiricism thought of the unit of experience as self-contained, self-intimating events: episodes that constitute knowings just in virtue of their brute occurrence. These primordial acts of awareness are then taken to be available to provide the raw materials that make any sort of learning possible (paradigmatically, by association and abstraction). By contrast to this notion of experience as *Erlebnis*, the pragmatists (having learned the lesson from Hegel) conceive experience as *Erfahrung*. For them the unit of experience is a Test-Operate-Test-Exit cycle of perception, action, and further perception of the results of the action. On this model, experience is not an *input* to the process of learning. Experience *is* the process of learning: the statistical emergence by selection of behavioral variants that survive and become habits insofar as they are, in company with their fellows, adaptive in the environments in which they are successively and successfully exercised. (This is the sense of 'experience', as Dewey says, in which the job ad specifies "Three years of experience necessary.") The rationality of science is best epitomized not in the occasion of the theorist's sudden intellectual glimpse of some aspect of the true structure of reality, but in the process by which the skilled practitioner coaxes usable observations by experimental intervention, crafts theories by inferential postulation and extrapolation, and dynamically works out a more or less stable but always evolving accommodation between the provisional results of those two enterprises. The distinctive pragmatist shift in imagery for the mind is not from mirror to lamp, but from telescope and microscope to flywheel governor.

These new forms of naturalism and empiricism, updated so as to be responsive to the changed character and circumstances of nineteenth century science, meshed with each other far better than their predecessors had. Early modern philosophers notoriously had trouble fitting human knowledge and agency into its mechanist, materialist version of the natural world. A Cartesian chasm opened up between the activity of the theorist, whose understanding consists in the manipulation of algebraic symbolic representings, and what is thereby understood: the extended, geometrical world represented by those symbols. Understanding, discovering, and acting on principles exhibited for them one sort of intelligibility, matter moving according to eternal, ineluctable laws another.

On the pragmatist understanding, however, knower and known are alike explicable by appeal to the same general mechanisms that bring order out of chaos, settled habit from random variation: the statistical selective structure shared by processes of evolution and of learning. That structure ties together all the members of a great continuum of being stretching from the processes by which physical regularities emerge, through those by which the organic evolves locally and temporarily stable forms, through the learning processes by which the animate acquire locally and temporarily adaptive habits, to the intelligence of the untutored common sense of ordinary language users, and ultimately to the methodology of the scientific theorist—which is just the explicit, systematic refinement of the implicit, unsystematic but nonetheless intelligent procedures characteristic of everyday practical life. For the first time, the rational practices embodying the paradigmatic sort of reason exercised by scientists understanding natural processes become visible as continuous with, and intelligible in just the same terms as, the physical processes paradigmatic of what is understood. This unified vision stands at the center of the pragmatists' second enlightenment.

A number of these master ideas of classical American pragmatism evidently echo themes introduced and pursued by earlier romantic critics of the first enlightenment. Pragmatism and romanticism both reject spectator theories of knowledge, according to which the mind knows best when it interferes least and is most passive, merely reflecting the real. Knowledge is seen rather as an aspect of agency, a kind of doing. Making, not finding, is the genus of human involvement with the world. They share a suspicion of laws, formulae, and deduction. Abstract principle is hollow unless rooted in and expressive of concrete practice. Reality is revealed in the first instance by lived experience, in the life world. Scientific practice and the theories it produces cannot be understood apart from their relation to their origin in the skillful attunements of everyday life. Pragmatists and romantics accordingly agree in rejecting universality as a hallmark of understanding. Essential features of our basic, local, temporary, contextualized cognitive engagements with things are leached out in their occasional universalized products. Both see necessity as exceptional, and as intelligible only against the background of the massive contingency of human life. Both emphasize biology over physics, and see in the concept of the organic conceptual resources to heal the dualistic wound inflicted by the heedless use of an over-sharp distinction between mind and world. Where the European enlightenment had seen the “natural light of reason” as *universal* in the sense of *shared*, or *common*, so that what one disinterested, selfless scientist could add as a brick to the edifice of knowledge, another could in principle do as well, the pragmatists, looking at

the division of labor in what had become a modern industrial economy saw the enterprise of reason as *social* in a more genuine, articulated, *ecological* sense, in which the contributions of individuals are not interchangeable or fungible, but each has potentially a unique contribution to make to the common enterprise, which requires many different sorts of skills, responses, ideas, and assessments, which all collectively serve as the environment in which each adapts and evolves. Here too they made some common cause with the romantics on some general issues, while offering their own distinctive blend of rationalism, naturalism, and Darwinian-statistical scientism as a way of filling in those approaches.

Nonetheless, pragmatism is not a kind of romanticism. Though the two movements of thought share an antipathy to Enlightenment intellectualism, pragmatism does not recoil into the rejection of reason, into the privileging of feeling over thought, intuition over experience, or of art over science. Pragmatism offers a conception of reason that is practical rather than intellectual, expressed in intelligent doings rather than abstract sayings. Flexibility and adaptability are its hallmarks, rather than mastery of unchanging universal principles. It is the reason of Odysseus rather than Plato. But both are thought of as part of the natural world—in the sense in which natural science is acknowledged to have final authority over claims about nature. The pragmatists are also materialists—though theirs is Darwinian, rather than Newtonian materialism. Evolutionary natural history aside, the biology that inspires them is the result of the shift of attention (largely effected in Germany in the first half of the nineteenth century) from anatomy to physiology, from structure to function. The climate of German romanticism may have provided an encouraging environment for this development, but the vitalistic biology that provided their organic metaphors was only a by-then-embarrassing, prescientific precursor of the recognizably modern sort of biology pursued in the German laboratories in which William James trained.

#### IV. Historical Run-up: Phase Three, Twentieth Century Analytic Naturalism

[The first 5 ‘graphs of Chapter One, “Extending the Project of Analysis” of my *Between Saying and Doing: Towards an Analytic Pragmatism*]

I think of analytic philosophy as having at its center a concern with semantic relations between what I will call ‘vocabularies’. Its characteristic form of question is whether and in what way one can make sense of the meanings expressed by one kind of locution in terms of the meanings expressed by another kind of locution. So, for instance, two early paradigmatic projects were to show that everything expressible in the vocabulary of number-theory, and again, everything expressible using definite descriptions, is expressible already in the vocabulary of first-order quantificational logic with identity.

The nature of the key kind of semantic relation between vocabularies has been variously characterized during the history of analytic philosophy: as analysis, definition, paraphrase, translation, reduction of different sorts, truth-making, and various kinds of supervenience—to name just a few contenders. In each case, however, it is characteristic of classical analytic philosophy that *logical* vocabulary is accorded a privileged role in specifying these semantic relations. It has always been taken at least to be *licit* to appeal

to logical vocabulary in elaborating the relation between *analysandum* and *analysans*—target vocabulary and base vocabulary. I will refer to this aspect of the analytic project as its commitment to ‘*semantic logicism*’.<sup>1</sup>

If we ask *which* were the vocabulary-kinds whose semantic relations it was during this period thought to be important to investigate, at least two *core programs* of classical analytic philosophy show up: *empiricism* and *naturalism*. These venerable modern philosophical traditions in epistemology and ontology respectively were transformed in the twentieth century first by being transposed into a *semantic* key, and second by the application of the newly available *logical* vocabulary to the self-consciously semantic programs they then became.

As base vocabularies, different species of *empiricism* appealed to *phenomenal* vocabulary, expressing how things appear, or to *secondary-quality* vocabulary, or, less demandingly, to *observational* vocabulary. Typical target vocabularies include objective vocabulary formulating claims about how things actually *are* (as opposed to how they merely appear), primary-quality vocabulary, theoretical vocabulary, and modal, normative, and semantic vocabularies. The generic challenge is to show how what is expressed by the use of such target vocabularies can be reconstructed from what is expressed by the base vocabulary, when it is elaborated by the use of logical vocabulary.

As base vocabularies, different species of *naturalism* appealed to the vocabulary of *fundamental physics*, or to the vocabulary of the natural sciences (including the special sciences) more generally, or just to objective descriptive vocabulary, even when not regimented by incorporation into explicit scientific theories. Typical targets include normative, semantic, and intentional vocabularies.

#### 11. Analytic Scientific Naturalism:

- a) Carnap and C.I. Lewis were neo-Kantians, downstream from Karl Fisher’s reading of Kant (which is what Frege was taught, too) as principally a philosopher of science. England, so far as I can see, had no comparable figure.
- b) Manifesto: Traditional empiricism-and-naturalism are to be pursued by adding to the raw materials a new sort of ‘glue’: Frege-Russell quantificational predicate logic with identity.
- c) Russell is naturalist in *Analysis of Matter* and empiricist in *Analysis of Mind*. Moore is an empiricist, but, famously, a *non-naturalist* about moral [and aesthetic?] properties. But naturalism is very much an *issue* for him.
- d) One of the ways to see that, however important they were for the development of analytic philosophy, Frege did not belong to the tradition of *Anglophone* analytic philosophy I am tracing, is his *lack* not only of *commitment* to, but by and large even explicit *interest in* issues of empiricism and naturalism. He did *not* in the way of his Anglophone brethren, think of himself as continuing the tradition of Locke and Hume.

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<sup>1</sup> In this usage, the logicism about mathematics characteristic of Frege’s *Grundgesetze* and Russell and Whitehead’s *Principia* is semantic logicism about the relations between mathematical and logical vocabularies.

The Vienna Circle:

- e) Naturalism in ontology;
- f) Empiricism in methodology;
- g) Unity of Science reductive physicalism;
- h) Collision between (e) and (f), for instance on the issue of *modality* and *lawfulness* leads to two wings of the movement. Schlick led the *empiricist* wing of the Vienna Circle, and Neurath led the *naturalist* wing, with Carnap the *mediating, synthesizing, irenic* center. All thought and hoped that empiricism and naturalism could be integrated compatibly in the end. The disagreement was over what to do if not. One thing that bound them together was *unity-of-science physicalism*, for Schlick a *methodological* thesis, and for Neurath an *ontological* one.
  - i. Schlick keeps empiricism.
  - ii. Neurath keeps naturalism.
  - iii. Carnap keeps working for both.

#### IV. Historical Run-up: Phase Four, After Reductionism

##### 12. Arguments against high-church unity-of-science reductive physicalism (HCUSRP):

- a) Claim was twofold:
  - i. On the side of *description* or *ontology*: that all the *concepts* of all legitimate discourses are *definable* in the terminology of 'science'; and
  - ii. On the side of *explanation* or *ideology*: that all the *laws* (counterfactually robust inferences) of all legitimate discourses are *derivable from* the laws of 'science'.
- b) The arguments against HCUSRP are twofold:
  - i. Against the unity-of-science reducibility even of the rest of *physics* to fundamental physics: *many levels* argument, Putnam on round pegs in square holes.
  - ii. Against even the definability claim for intentional phenomena: *multiple realizability* argument. This is the argument from *functionalism*: even valve is not definable in physicalistic terms.

##### 13. To fill in these two arguments in more detail (with some references): The two biggest objections to high-church unity-of-science reductionist physicalism are:

- a) "Many levels": Even within the triad of *general* natural sciences, physics, chemistry, biology, definitional-descriptive and explanatory reductionism do not seem to be true. Here is Putnam's example as characterized by Block ("Anti-Reductionism Slaps Back", in *Philosophical Perspectives* [<http://www.nyu.edu/gsas/dept/philo/faculty/block/papers/AntiReductionism.html>]):

Another influential analogy was Putnam's (1975) explanation of why a solid rigid round peg 1 inch in diameter won't fit through a square hole in a solid rigid board with a 1 inch diagonal. We can contrast the "upper level" explanation in terms of solidity, rigidity and geometry with the "lower level" account in terms of the specific elementary particle constitutions of a specific metal peg and wooden board. The upper level account is more general in that it applies to any solid rigid peg and board with that geometry, including materials that are composed of glass (a supercooled liquid) instead of the lattice structure of metals or the organic cell

structure of wood. But the lower level account is more powerful in that it explains the specific cases of solidity and rigidity themselves. Further, it is more general because it explains details of the interaction between the peg and the board, including cases where the peg crumbles or the board breaks or tears.

b) Multiple realizations: Here is Block again:

Fodor and Putnam initiated the anti-reductionist consensus thirty years ago by noting the analogy between computational states and mental states (Fodor, 1965, 1974; Putnam, 1965, 1967). Any computational property can be "realized" or "implemented" in a variety of ways (electronic, mechanical, hydraulic), so it would be a mistake to identify any computational property with, say, an electronic property, since the same computational property can be implemented *without* the electronic property, for example mechanically. If thought is computational or functional, then for the same reason it would be a mistake to identify thought with any neural state; for thought can be implemented non-neurally, e.g. electronically. It would be wrong to identify thinking with a brain state if a device without a brain could think.

Fodor, J. A. 1965. "Explanation in Psychology" in *Philosophy in America*, Max Black, ed., Muirhead Library of Philosophy

Fodor, J. A., 1974 "Special Sciences" *Synthese* 28, 97-115. Reprinted in Block 1980a

Putnam, H., 1965 "Brains and Behavior" in *Analytical Philosophy* Vol 2, R. J. Butler, ed. Oxford:Blackwell. Reprinted in Block, 1980a

Putnam, H. 1967 "The Nature of Mental States, in W. Capitan and D. D. Merrill, eds., *Art, Mind and Religion* Pittsburgh, 37-48. Reprinted in Block, 1980a

Block:

I keep speaking of realization. What is it? As Kim notes, we can think of realization this way. Suppose we have a family of interconnected macro-properties (e.g. mental properties or economic properties) of a given system (say a person). Suppose that corresponding to each of these macro properties there is a micro property in this system, and that the family of interconnected micro properties provides a mechanism for explaining the connections among members of the macro family. Then the micro properties realize the macro properties. (Of course, this talk of macro and micro is relative; properties that are micro relative to one set of properties can be macro relative to another.)

Fodor and Putnam were reacting against the Unity of Science movement, a positivist ideology whose ultimate expression was Oppenheim and Putnam (1958), "Unity of Science as a Working Hypothesis". Oppenheim and Putnam divided all of science into levels, starting at the bottom with elementary particles and building up to molecules, cells, individuals, and societies. They argued that the science at each level was reducible to the next lower level, and thus that the laws of micro-physics are the basic laws of all

sciences. By contrast, Putnam and Fodor advocated what might be called the Many Levels doctrine, the view that nature has joints at many different levels, so at each level there can be genuine sciences with their own conceptual apparatus, laws and explanations. Fodor's (1974) key article emphasizing the autonomy (which we can take to be just irreducibility) of the special sciences was subtitled "The Disunity of Science as a Working Hypothesis".

Oppenheim, P. and Putnam, H. 1958 "Unity of Science as a Working Hypothesis". In H. Feigl, M. Scriven & G. Maxwell eds, *Minnesota Studies in the Philosophy of Science* Vol II, Minneapolis: University of Minnesota Press.

14. Response to the failure of reductionism: From type-type to token-token identities, on side of description or ontology (but have to give up the explanatory aspirations).

15. From reduction to "partial reduction formulae": Carnap himself described a trajectory of weakening of this notion of reduction, in the face of various reasons to think that it is implausible in its full-blown form. For there are reasons to think From "Testability and Meaning" (1936) through "The Methodological Character of Theoretical Concepts" (1956) (though these concerned his *instrumentalist* formula: "*all terms must be reducible, by means of definitions or reduction sentences, to the observational language*". But this proved to be inadequate. K. R. Popper showed not only that some metaphysical terms can be reduced to the observational language and thus fulfill Carnap's requirements, but also that some genuine physical concepts are forbidden."

[<http://www.iep.utm.edu/c/carnap.htm>] He moved from the full-blown *reduction sentences* of the Aufbau: "For example, if A, B, C and D are observational terms and Q is a dispositional concept, then

(x)[Ax → (Bx ↔ Qx)]

(x)[Cx → (Dx ↔ ~Qx)]

are reduction sentences for Q." to *partial reduction sentences*, which only determine *part* of the meaning of, e.g., theoretical terms.

16. From token-token identities to global supervenience.

17. Demarcating the natural: This story has to do with the *relations* between the *target* and *base* vocabularies or phenomena. But there is also an issue about the nature of the *base* vocabulary, and how it is picked out:

- a) What language (whose objects or concepts) is to be privileged by naturalism?
  - i. Fundamental physics;
  - ii. Natural sciences conceived narrowly: physics, chemistry, biology; If we give up (for Putnamian reasons) the idea that the rest of physics, chemistry and especially biology—think of population biology, which is what Mendelian genetics became once molecular biology about the realization of the *functional role* (cf. multiple realizations) *gene* is split off from it)—are *reducible* to fundamental physics, we might include these *general* natural sciences in the base vocabulary.
  - iii. Also special natural sciences: geology, astronomy, natural history, meteorology...; (But notice that Fodor will claim that there is no reason *semantics* should not be considered such a special science. Is the criterion of inclusion

*methodological?* If so, how can it be formulated? Is it an epistemological, ultimately, an *empiricist* criterion?)

- iv. Also empirical (observation-based) descriptive uses of ordinary, non-technical vocabulary, on the basis that science is a sophisticated extension of ordinary ways of finding out about how things are.
- v. What about the *social* sciences: population biology, psychology, sociology, political science...? Is it these only insofar as they are *empirical* rather than *hermeneutic*? Does economics get in insofar as it is empirical rather than purely mathematical?
- vi. If logic and mathematics are allowed in, is that merely as auxiliaries to the genuinely empirical-natural sciences? Or are they on a par? Saying the latter would require acknowledging that there really are mathematical objects, even though our contact with them is not causal and observational.
- vii. What about the human-hermeneutic sciences—the ‘soft’, text-based, more literary wing of the *Geisteswissenschaften*? If so, is that because they do not really have a different form of knowing-understanding, but, properly pursued, are methodologically of a piece with the *Naturwissenschaften*?

I’m going to take this set of views seriously, but not take it to be a decisive *objection* to naturalism. It is a *problem* or a *challenge* to the *definiteness* of any naturalistic thesis. One will only have as clear and precise a naturalistic claim as one has a specification of the natural and its relation to various sciences. But lots of issues in the vicinity can be addressed even if we don’t have a good answer to this (nonetheless important) question. So we should keep it in mind, but not take it as relieving us of the obligation to consider other issues about naturalism.

- b) Whatever choice we make on that issue, and however it is motivated (methodologically, so involving commitment to some kind of empiricism as a *condition* of our naturalism, or of the criterion of demarcation of the natural), is it the *current* versions of those sciences that are to be considered ontologically authoritative, or some *ideal* or *eventual* versions?
  - i. The principal consideration against plumping for the current version is that it seems arbitrary. Every previous theory has turned out to be wrong, at least in its details, and often in its fundamentals. What reason could we have to rule out the possibility of a more authoritative revolutionary successor? This was not so much an issue in pre-Kuhnian days, when we had a more Whiggish picture of the progress of science. But if there are and by rights ought to be conceptual revolutions, even quite fundamental ones, even in fundamental physics, but also in all the others (Are there really such progressive revolutions at the softer end of the spectrum in (a)? Hegel thinks that the Great Change of modernity is one, for sure.) what business would we philosophical naturalists have to privilege our current perspective?
  - ii. The principal consideration against granting the ontological authority or privilege to an ideal or later version is that it is difficult on the one hand to define the ideal, and on the other to exclude perverse actual contingent developments of the scientific tradition. Scientific institutions *might* be taken over by theological fanatics who introduce explanatory desiderata such as *pleasingness to God* or *fidelity to scripture*. What *actually* happens to those institutions does not seem

worthy of privileging in our understanding of what is real or really exists. On the other hand, how do we define the ideal in a non-circular, hence non-question-begging way? Peircean views have this trouble, and so do even quite sophisticated contemporary counterparts such as Wright's superassertibility.

18. How are we to make this delineation of the base?
  - a) If ontologically, why does the real get defined here? One possible answer: the *causal completeness* of physics. (But remember the limits Craig's Elimination Theorem puts on this claim.)
  - b) If methodologically, it is on broadly *empiricist* grounds, that the *method* of 'science' is *the* method for acquiring genuine knowledge. But now the tensions between *empiricism* and *naturalism*, particularly over the issue of *modality*, must be taken into account, as well as the fundamental difficulties with empiricism itself (which involves a kind of *reductionism* to an *empiricist* base language, with all of the problems of *naturalist* reductionisms, plus some more [cf. my piece on Sellars's arguments against empiricism]).
  - c) What basis would we have for claiming that the method of *empirical sciences*, paradigmatically the *natural sciences*, is the *only* way of gaining genuine *knowledge* or *understanding* of things? Cf. the debate over Natur- vs. Geisteswissenschaften.

19. There seem to be four areas where naturalism faces challenges:
  - a) Mathematics;
  - b) Sentient subjectivity—e.g. what red looks like to us (or me);
  - c) Normativity, perhaps especially *moral* normativity (if—as natural kind skeptics about morality such as myself deny—this is indeed a *kind* of normativity);
  - d) Intentionality.

To make things more manageable, we are only going to think about (c) and (d). This is, for instance, the reason we won't read Jackson's fourth chapter. Consciousness theorists, such as Chalmers and Galen Strawson think that the biggest challenge to naturalism, and the one most distinctive of the contemporary scene, is (b).

Stroud suggests a deep connection between (b) and (d), and perhaps (b) and (e). I think there are deep connections between (c) and (d), in that there is a kind of normativity that is distinctive of the discursive-intentional. Kant and Hegel thought that that kind of normativity is enough to underwrite specifically *moral* norms.

20. Today:
  - i. Here the striking thing is that *naturalism* has gone beyond dogmatic acceptance to something like invisible background assumption. (It needs to *recover* its status as dogma, so that heterodoxy at least becomes an *issue*.)
  - ii. Empiricism, however, recedes into the background. Austin's, Quine's, Sellars's, criticisms in the '50s, and in particular the difficulties of the *foundationalism* that seemed to be part and parcel of epistemological empiricism (cf. the Agrippan trilemma) have led to a situation in which contemporary self-avowed empiricists are pretty thin on the ground. And where you do find them, they are heterodox, non-foundationalist empiricists. Thus van Fraassen is a neo-instrumentalist: the issue he is addressing is the epistemological (and hence, for him ontological)

status of observable and theoretical objects. And McDowell's transcendental empiricism is really a *semantic* empiricism, modest in its concern to argue for the *necessity* of observational contributions to content, rather than its *sufficiency* (which would put one in foundationalist territory).

iii. Another reason for the doldrums of empiricism (besides epistemological foundationalism) concerns *modality*. Naturalism is easy with it (in fact, cannot live without it, Quine's empiricist aspirations to the contrary notwithstanding), and empiricism is not. But with the modal revolution, *naturalism* helps itself to the riches of *formal* modal logic and semantics (and wants to use modal notions as the basis of a naturalistic *philosophical* semantics, as in Dretske, Fodor, Millikan), and it looks as though empiricism cannot get easy with modality. A proper fourth-wave empiricism would treat modal logic and the formal intensional semantics that grew out of it the way Russell and Carnap treated Frege-PM first-order extensional logic: as a new 'glue' for understanding how empirical contributions to content are elaborated into propositional contents of various sorts. But this project is, so far as I can see, currently a gapingly empty box on the table of philosophical possibilities.

iv. Another element in the motivation for falling contemporary interest in empiricism is the apparent failure of *semantic reductionism* of the unity-of-science sort. This casts doubt on the *semantic foundationalism* that Sellars pointed out was the soft underbelly of empiricism, and a much deeper (hence harder to root out) element than *epistemological* foundationalism. This consideration, however, turns out to threaten various otherwise tempting forms of *naturalism* every bit as much as it does *empiricism*. This issue will be one of our main themes in the course.

v. And it is not as though empiricism has gone away. It is much more that it has gone underground. Fodor is evidently still in important ways an empiricist (the admiration of Hume in his recent Hume book [which—full disclosure—I have not read] is not, I think, just for the “Newton of the mind” naturalism, but *also* for the empiricism—as was the great critic of empiricism, Quine, since his objections to *modal* notions, insofar as they are not merely formal (no completeness result, lack of intuitions to settle, e.g. S4 vs. S5), are developments of Hume's. Indeed, taking *observational* concepts to be the paradigm in terms of which we are to understand semantic contentfulness is a kind of empiricism. (It is one that McDowell accepts.) One might instead, as Dummett, Wright, and the author of *MIE* do, take *logical* concepts as the paradigm. Or, with Peacocke, one might try to see the contribution of *both*. In seeing these as alternatives, one is just following out what Carnap made of traditional empiricism, adding logical glue to empiricist Erlebnisse as bricks. And surely there are other alternatives, as the classical pragmatist semantic theories that focus on learning and development show. Fodor's “divide and conquer” strategy assumes that he can get horse right first (in terms of, say, nomological locking and asymmetric dependence), and then move on to think of the meaningfulness of necessary in other terms later.

21. Supervenience naturalism-physicalism:

- Historically ('70s, early '80s), the pendulum swung away from reductionism, all the way to *global supervenience*. Cf. Haugeland, and earlier paper (by Penn State

guy). This is a very clear notion, and the global supervenience of everything on the physical seems very plausible. (Even McDowell does not deny it—though he does not assert it either. He says “Yeah, that could be true.”) Note that it is a relation between *vocabularies*, or between *total sets of facts* specifiable in them. This move started out in philosophy of mind, but quickly spread to include discussions of semantics and of (moral) normativity.

b) But it then came to seem that supervenience is just *too weak* to satisfy naturalist impulses. Horgan’s “Supervenience and Superdupervenience” is a good survey—particularly striking for his pointing out that global supervenience on the physical is compatible with Cartesian dualism, and hence with ectoplasm (which I’ll use as generic for any kind of spooky supernatural stuff that we want to rule out). Kim had been arguing all along that supervenience is just too weak.

22. So what people look for is a Goldilocks solution: not too hot (too committive, hence not likely to be *true*, as reductive naturalism is) nor too cold (not restrictive enough, hence not likely to be *interesting*, as supervenience naturalism is), but just right: a *via media* between the two. One popular kind of view that has seemed promising to many in this regard says that all *objects* (particulars) are physical *objects*, but not all *facts* are physical *facts*. This requires allowing that one cannot *say* in the language of, say, physics, what one can *say* in the special sciences and in ordinary discourse, but that wherever what one says in those other terms is *true*, one is talking *about* something that can be specified in physical terms. [I don’t have a good label for this genus of views: ‘*object naturalism*’ or ‘*particular naturalism*’?]

- a) This seems to have been Sellars’s view, already in the late ‘50s. (Cf. his nominalism, and Jumblese in aid of it.)
- b) It is Davidson’s view in “Mental Events”.
- c) It is a genus that includes token-token identity theories in the philosophy of mind, which succeeded the implausible, reductionist type-type theories done in by the multiple realizability arguments of the functionalists.
- d) For—and this may be the principal virtue of this approach—these token-token identity theories seem to be immune to multiple-realizability objections. They take seriously that all valves are physical objects, while what they have in common in virtue of which they are *valves* is *not* specifiable in physicalistic terms. So the *property* of being a valve is *not* a physical property. But there are no spooky things, no ectoplasm.

23. Objects, Facts, and token-token identity theories:

- a) One big metaphysical issue that is lurking in the vicinity (of the *object physicalism*) is whether the world should be thought of as world of *facts* (as Wittgenstein has it in the *Tractatus*), i.e. as being everything that is the case, or as a world of *objects*, with the facts just being something like *arrangements* of objects. The properties, thought of as *sets* of (possible) objects (comprehensions), may group the objects there are in orthogonal sets. (Cf. my model of Spinoza in terms of non-reciprocally-recursive sets of numbers.)
- b) Or if (as McDowell is sometimes inclined to say), we should say *both* (though obviously in somewhat different senses), the question is: how should we understand

the *relations* between the sense in which the world is a world of facts and the sense in which it is a world of objects?

- c) For the shape of the compromise between reductionism and supervenience that is being offered is that not all *facts* are physical *facts* (hence not all *properties* are physical *properties*), but all *objects* are physical *objects*.
- d) Note that if one says nonetheless, all the genuine non-physical facts must be *made true* by the physical (natural) facts, one means *either*:
  - i. *All* the physical facts settle *all* the non-physical facts, which is just global supervenience, *or*
  - ii. Each true non-physical claim is *made true* by some more restricted range of physical facts. If there is type-type definability, then this is reductionism. If not, it would seem to have the same weakness as global supervenience.

Notice further that **the issue of whether one can say in the language of physics, which physical facts are truth-makers for non-physical facts is a question about the reducibility of the semantics of the non-physical discourse to physical discourse, and for this (the question of whether we can say in the language of physics which things go into the non-type-type disjunctions) the mere supervenience of semantics on the physical will not suffice.**

- e) This view comes in two flavors, which may not be sufficiently distinguished:
  - i. All *objects*, but not all *properties*, or, therefore, all *facts*, are physical. (Object naturalism).
  - ii. What the terms *and predicates* used to formulate *true* claims (state facts) *refer to* is always physical-natural, but the *senses* of those true claims, in that sense, what one is *saying about* the physically-naturally specifiable things one is *talking about* need not be expressible in the language of physics. (Referent naturalism).

These are *quite* different views, and represent quite different forms of compromise of reduction (which does go as far not only as facts and properties, but as senses) and global supervenience (which at any rate has nothing to say about senses).

- f) I have a suspicion that this sort of compromise is ultimately unstable. For I suspect that the possibility of being naturalist-physicalist either about *objects* but not *properties* or *facts*, or about *referents* but not about *senses* (though as indicated in (e) above, these views must be considered separately) only seems open because one has a bad, ultimately untenable semantics. And there is a question, of the sort indicated at the end of (d) above, even about the *coherence* of the claims of the *object-naturalism* or *referent-naturalism* with the semantics that they presuppose (i.e. are intelligible only on those semantic assumptions). It may be that one *must* be fully reductionist about semantics even to *state* these views. In that case they would be incoherent as *global* naturalist claims.

24. Thus we should distinguish *global* naturalisms from *local* ones. One might, for instance, be a reductionist about intentionality, but an eliminativist about moral normativity.

25. Backlash:

- a) But: Kim is still a (very sophisticated) reductionist about the mental, having been convinced (see below) that nothing weaker will satisfy naturalist intuitions.
- b) And the Australians offer a kind of “new reductionism”:

- i. David Armstrong (whose stuff we will not read) insists that all legitimate discourse must make truth claims, and that the ultimate *truth-makers* must be specifiable in naturalistic (indeed, physicalistic) terms. If truth-makers are thought of as being at the level of *facts* [which is what I think his view is, without having really looked at it], then this is reductionism. If they are thought of just as the *objects*, then we have a kind of token-token identity theory (see below).
- ii. Frank Jackson (whose stuff we will read), and following him, David Chalmers, is committed to a stronger *conceptual reducibility* claim, articulated in terms of the second dimension of two-dimensional modal semantics. (Recall that I will criticize the assumption built into this about the independence of these ‘tensions from collateral beliefs/facts.)
- iii. Cf.: *The Canberra Plan*, edited by Robert Nola and David Braddon Mitchell.