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PRAGMATISM *AND* REALISM: A MODEST PROPOSAL

I

According to a long and distinguished tradition in the philosophy of science, there are strong grounds for abstaining from full belief in the tenets of even our most successful scientific theories.   Those who subscribe to this tradition maintain that it is philosophically appropriate to remain agnostic about the existence of the entities posited by well-established theories: we should doubt that the world contains entities like electrons, atoms, molecules, or genes.   Modesty should incline us to focus on the observable, endorsing the claims our best theories make about observable entities – middle-sized more-or-less-dry goods – and using the machinery that generates those claims without taking it entirely seriously.

I have argued ("Real Realism" [Chapter 3]) for a more liberal attitude, one that grants a license to take seriously the claims of the most successful sciences at face value. Real Realism is a piecemeal approach, understanding that there may sometimes be excellent grounds not to exercise the license.   It is grounded in the conviction that there is a bootstrapping strategy, vindicated by methods anti-realists rightly accept, that enables us to argue from scientific success to approximate truth, and that denies any relevance of the boundary between observables and unobservables.   Appreciation of the *Galilean strategy* overcomes the queasiness the anti-realist tradition has felt in affirming claims of theoretical science, even when the theories in question are highly successful.

Yet, even if the familiar worries are overcome, Pilate's old question arises: What is truth?   My answer identifies truth, in this domain, as correspondence.   More exactly, I understand the notion of truth by starting with Tarski's reduction of truth to reference, where reference is envisaged as a relation between signs (material or mental) and entities that are typically independent of the sign user.   I do not suppose that this relation admits of any further (physicalist) reduction.[1]

The spirit of Real Realism is pragmatic: its guiding idea is to understand the inferences from premises about observables to claims about unobservables by viewing them as continuous with our everyday practices of forming our beliefs.   Yet those with

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[1]   See "On the Explanatory Power of Correspondence Truth" (Chapter 4).

pragmatist sympathies might well wonder why Real Realism needs to sweat and strain in its confrontation with the forms of anti-realism.   Didn't the classical pragmatists already teach us how to avoid such strenuous activities?   Why not solve the problem as they did, by tying truth, insofar as you want to talk about it at all, to the uncontroversial fact that the theories in question are successful?

My aim in what follows is to respond to these questions, by showing that pragmatism should be more than happy with the approach to truth I favor.

<center>II</center>

Apart from the formulation(s) of the pragmatist principle, the sections of *Pragmatism* that have excited most philosophical attention are those that bear on the notion of truth.   Famously (notoriously?), James defined truth as "what works in the way of belief".   That simple slogan would allow for an almost automatic dissolution of the central issues about which realists and anti-realists squabble.   The contending parties would be seen as benightedly clinging to a conception of truth that was somehow divorced from "working in the way of belief", and then arguing over whether people should infer to claims involving this notion of truth from premises about success.   Because of their shared faulty presupposition, realists and anti-realists are both in error, and, when the mistake is exposed and the illicit notion of truth replaced, the dispute evaporates.

This happy proposal for reconciliation is problematic in two distinct ways.   First it supposes, as many subsequent commentators have done, that James was offering a theory of truth, a rival to the correspondence theory.   Second, and more importantly, the "theory" attributed to James is radically unsatisfactory.   What counts as "working in the way of belief"?   Is it open to the fundamentalist who opposes the main claims of Darwinian evolutionary theory to declare that those claims don't "work in the way of belief", or, at least, don't "work for him"?   Apparently, the pragmatist "theory" counts comfortable falsehoods as true.

Against this second objection, it is appropriate to point out that James, of all people, should surely have been aware of the problem.   Any understanding of his previous writings, and of *Pragmatism* in the context of those writings, should make it apparent that he struggles mightily with difficulties the attributed "theory" would solve at a stroke.   The discussions of religion from "The Sentiment of Rationality" to *Varieties of Religious Experience* and the opening lecture of *Pragmatism* could be radically truncated, if James could simply have availed himself of the premise "Religious dogmas work in the way of belief", and the inference from "*S* works in the way of belief" to "*S* is true".   In fact, the critical error goes deeper.   It is not simply that the casual slogan

goes astray in identifying James' preferred theory of truth, his favored rival to the correspondence theory, but that he isn't interested in opposing the correspondence theory of truth.   Rather, he is concerned to understand what might be right about it, and, in accordance with his fundamental goals, he doesn't want a complete theory of truth, but enough grasp on the notion of truth to proceed with the really important questions (to fulfill the "whole function of philosophy").

A first step towards better understanding is to restore the slogan (italicized in the original) to the context in which it is set:

> *'The true', to put it very briefly, is only the expedient in the way of our thinking, just as 'the right' is only the expedient in the way of our behaving.*[2]

It is important to add the next sentence: "Expedient in almost any fashion; and expedient in the long run and on the whole of course: for what meets expediently all the experiences in sight won't necessarily meet all farther experiences equally satisfactorily."   This sentence implicitly alludes to a subject of experience who changes his mind in light of the further course of experience.   In emphasizing the need to respond to the long run, James must presuppose that a particular strategy of response is not available, to wit that of simply hanging on to prior belief come what may.   Hence there are tacit psychological constraints on how "working" is to be assessed, and such constraints may debar the "working" of comfortable falsehoods.   Indeed, in light of lecture one of pragmatism, we ought to expect that the constraints *will* debar the exclusively tender-minded approach of retaining a belief because of the consolation it brings, even when experience presents a severe challenge.

This is only the first step, however, in understanding James' position.   His approach to truth is articulated in response to a group of opponents he labels "intellectualists", whose positive doctrines only emerge sporadically and unsystematically in James' argument: they are, apparently, committed to an unexplained notion of correspondence (or "agreement") with reality, possibly to some notion of an Absolute, and to Reality as a source of imperatives for human belief.[3] James' worries about the notions of agreement and reality, evident in his uses of scare quotes and his ironic capitals ("Truth", "Reality"), can easily lead readers to suppose that he rejects truth as correspondence and is suspicious of ordinary realist talk.   In later responses to his critics, he insists again and again that he is not challenging common-sense views of the existence of objects: "…both pragmatists and anti-pragmatists believe in existent objects, just as they believe in our ideas of them".[4]   As

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[2]   PL 583; PH 106.
[3]   PL 572-3, 586, 589; PH 96, 109, 112.
[4]   Preface to *The Meaning of Truth*; PL 826; PH 172. See also PL 865, 922-3, 935, 943-4, 963; PH 211, 270, 283, 294, 313.

he frequently pointed out in these replies, he had begun the discussion of truth with a clear statement of what was *not* in dispute.

> Truth, as any dictionary will tell you, is a property of certain of our ideas. It means their 'agreement', as falsity means their disagreement, with 'reality'. Pragmatists and intellectualists both accept this definition as a matter of course. They begin to quarrel only after the question is raised as to what may precisely be meant by the term 'agreement', and what by the term 'reality', when reality is taken as something for our ideas to agree with.[5]

James' challenge doesn't propose to *abandon* the dictionary idea of truth as correspondence (or agreement) but to *articulate* it. The error of intellectualists is either that they fail to say anything about the central notions the idea presupposes, the notions of agreement and truth, or, when they do, they offer the vague suggestion that "ideas possess[ed] truth just in proportion as they approach to being copies of the Absolute's eternal way of thinking."[6]

Philosophers who want to recruit James as an ally in their opposition to *contemporary* correspondence theories of truth must surely reckon with the character of the positions against which he was reacting. Neither he nor his Idealist targets could approach the concept of truth by using the Tarskian framework, and they were thus unable to find the most satisfactory formulation of the correspondence idea. Yet once Tarski's apparatus is available, we can give James' approach to truth a clearer formulation than *Pragmatism* achieves.

Tarski shows how to provide a recursive definition of truth for sentences in a class of formal languages, where the base clauses ascribe relations of reference (between names and objects, between monadic predicates and sets of objects, and so forth). To satisfy James' pragmatic challenge, we need to explain the notion of reference and the status of the entities (objects, sets of objects etc.) so that the differences made by the statements of semantic theory are apparent. If this explanation is to accord with his own discussions, then three important conditions must be satisfied.

1. The explanation should be compatible with common-sense realism.

2. The explanation should connect the notion of reference with the practical activities of language-users.

3. The explanation should honor James' frequent denial that reality sets an agenda for human cognition.

There is a version of the correspondence theory that meets all three constraints.

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[5] PL 572; PH 96.
[6] PL 573; PH 96.

As I've already noted, James' responses to his critics make his endorsement of common-sense realism apparent. The way he understands the notion of correspondence, or agreement is also easier to recognize in these responses. *Pragmatism* tells us only, rather vaguely, that agreement is "an affair of leading – leading that is useful because it is into quarters that contain objects that are important."[7] The earlier presentations hint at a navigational project that receives a much more elaborate account in *The Meaning of Truth*. There James considers how his use of the term 'Memorial Hall' – or, in his own favored formulation, his image of Memorial Hall – comes to refer to a particular definite object. He suggests that reference would fail for a user who could not do anything in response to a query about the intended referent, and contrasts the inability to point or to lead with the successful case.

> On the other hand, if I can lead you to the hall, and tell you of its history and present uses; if in its presence I feel my idea, however imperfect it may have been, to have led hither and to be now *terminated*; if the associates of the image and of the felt hall run parallel, so that each term of the one context corresponds serially, as I walk, with an answering term of the other; why then my soul was prophetic, and my idea must be, and by common consent would be, called cognizant of reality.[8]

Although somewhat indefinite, James' proposal is pregnant – and it has the capacity to deliver a pragmatist account of the notion of reference.

The assumed relation of reference (or 'meaning') is revealed by the fact that it helps us see the imagined walk as a success. We can develop the example in a more stylized fashion. Suppose we are watching a person on whom we have already carried out the initial test: she has led us to Memorial Hall and confessed to that sense of "termination" to which James alludes; we're thus confident that, by 'Memorial Hall', she refers to Memorial Hall. We now take this person to an unfamiliar part of the general neighborhood, and ask her to lead us back to Memorial Hall. We provide her with a map, and ask her, as she proceeds, to express openly the thoughts that are guiding her navigation. So we hear her connect symbols on the map with parts of the environment; we see her picking out particular chunks of independent reality (reality independent of her[9]). She uses her connections, together with the map, to direct her movements, even though she is constantly reckoning with things she has not previously seen. If the map is a good one, and if she is skilled at map-reading, then she eventually leads us to Memorial Hall. This success depends in part on a correspondence between the map and reality: it's because the various symbols correspond to parts of the

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[7]   PL 580; PH 103.
[8]   PL 882; PH 228-9.
[9]   Most of the things she identifies will be dependent on human activity of various sorts, but, unless she is very unusual, she won't have been involved in those activities.

environment, and because the relations among those parts are well-depicted in the map, that her skilled reading of it works. (There's that "serial correspondence" that James notes.) The referential relations play a role in explaining her success.[10]

James seems to be aiming at something like this point in a discussion that follows soon after his "Memorial Hall" example. He writes:

> By experimenting on our ideas of reality, we may save ourselves the trouble of experimenting on the real experiences which they severally mean. The ideas form related systems, corresponding point for point to the systems which the realities form; … .[11]

This idea of related systems, one of signs and one of things, corresponding point for point needs to be given content: we need to be told just what difference it would make to us to accept that. The story James tells, and that I've elaborated, gives an answer. The thought of the correspondence can be used to explain behavior, and, in particular, to understand the successes of representation-coordinated behavior.

The stylized scenario exhibits the ways in which reference is manifested in action. Our imagined map-user deploys her well-entrenched categories and cognitive habits to organize her experience of a reality independent of her.[12]   As we follow her actions, we suppose that she is arriving at an organization much like the one we'd adopt.   We can liberate the general approach to reference from the particular context of navigation, and envisage different kinds of activity that fix reference – finding your way is a vivid example, but is not essential.[13]

Yet the account I've outlined so far may seem at odds with a fundamental feature of *Pragmatism*, its rejection of any static notion of truth in favor of the proposal that "Truth *happens* to an idea."[14]   Here I want to develop the third aspect of James' discussion, his denial that reality sets an agenda for human cognition and his corresponding commitment to a pluralism about the categories we legitimately adopt. *Pragmatism* recapitulates an analogy that James originally introduces in *Principles of Psychology*: even with respect to sensory experience, the subject plays a constructive role, because even though "[w]e receive … the block of marble, … we carve the statue

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[10]   I articulate and defend this point more fully in "On the Explanatory Role of Correspondence Truth" (Chapter 4).

[11]   PL 884-5; PH 231.

[12]   I've suggested elsewhere that this enables us to defend common-sense realism. See *Science, Truth, and Democracy* (New York: Oxford University Press, 2001), and "Real Realism: The Galilean Strategy" (Chapter 3.

[13]   Even when we consider the totality of someone's actions, there may remain indeterminacies in referential relations, as Quine famously argued.   On a pragmatist account these indeterminacies are unworrying, since they provide equivalent accounts of reality and of our language-guided interactions with it.

[14]   PL 574; PH 97.

ourselves."[15]   The world allows division into objects and categories of objects in many different ways, and we choose boundaries and class limits that suit our purposes.[16] Agreement with reality is *subsequent* to this initial decision: as James puts it, we make "additions" to sensible reality, and we can do so in many ways that "agree" with it.[17] He is opposing the thought that there is a privileged structuring of what is independent of us into objects and categories of objects, to which any adequate language must answer.   Human beings with different interests – and, more radically, other cognitive creatures with different capacities – would respond to the same independent reality in distinct ways, generating alternative schemes for dividing it up.   Properly understood, there would be no incompatibility among the statements generated and accepted by the users of the rival schemes, simply differences in the ease with which the users could pursue their diverse projects.

I read the proposal that "Truth happens to an idea" in light of this pluralism. On the modest correspondence approach I've attributed to James, the relation between sentences and the world is static.   Once a particular language has been fixed, the singular terms pick out certain chunks of independent reality, the monadic predicates pick out certain sets of chunks of independent reality, and so forth, and the truth of sentences is atemporally fixed by the inclusion relations together with the recursion clauses for connectives and quantifiers.   So far, truth *doesn't* "happen to an idea."   But, James insists, the obtaining of this static relation isn't the "essential" point – what really matters is whether the sentences we endorse can continue to play their guiding role.[18] Hence, he withholds the ascription of truth from sentences couched in languages that cease to be adequate to our purposes; in his stronger sense, to say that a sentence is true is to affirm that the language in which it is couched continues to be adequate to our aims and that the static relation between this sentence and reality obtains.   Because the first part of the affirmation is hostage to our evolving goals, the relation of truth is also dynamic, and truth can reasonably be said to "happen to an idea".

III

Return now to the suggestion that disputes between realists and anti-realists can be transcended by simply settling for what all parties concede – to wit that some scientific hypotheses and theories prove successful.   So far, I have treated the notion of

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[15]   PL 594; PH 119.   See also *Principles of Psychology* (Cambridge MA: Harvard University Press, 1981) pp. 274, 277.   This analogy is tricky because James ought to admit that there are fault lines in the marble, and, to make the analogy go through, the fault lines have to depend on us.

[16]   PL 596; PH 121.   Among James' examples is the grouping of stars into constellations.   This recurs in the later debate between Nelson Goodman and Israel Scheffler – and with good reason, since Goodman's views in *Ways of Worldmaking* are close to those James is developing in this passage.

[17]   PL 597; PH 121.

[18]   PL 579; PH 102.

success uncritically, without trying to scrutinize or explain it.   Yet human cultural productions admit of two very different types of success.   On the one hand, there is *world-adjusting success*, success that accrues to schemes for representing parts of reality – graphs, equations, maps, diagrams, as well as descriptive statements – in virtue of the systematic kinds of interventions they allow.   Success of this sort consists in attaining goals that were previously unrealizable.   It is visible in the molecular biology lab as the scientists and their technicians produce flies with different types of tissues or bacteria that produce crucial elements of drugs.   Contrasting with this sort of success is *cultural success*, the sort of success evident in widespread transmission (cultural proliferation). Success of this second sort is enjoyed not only by popular doctrines but also by tunes, recipes, and fashions in dress.   Nobody would ever be tempted to make an inference from cultural success to truth, since it's evident that many human productions that are not even candidates for truth achieve great cultural success, and, even for doctrines that are taken up around the world, it is an all-too-familiar fact that millions of people can be wrong.   These banal points lie at the bottom of the recognition that James' simple slogan cannot articulate a satisfactory "pragmatist conception of truth".

James' emphasis on success "in the long run and on the whole" signals his commitment to the *improvement* of belief, a recognition of the possibilities of advancing our knowledge he shares with Peirce and Dewey.   Any such idea would be vitiated if cultural success were accepted as sufficient for truth.   Why, then, is world-adjusting success so distinctive and importance?   The answer, accepted by James as well as by Dewey, is that we are organisms in an environment that is, at least partly, independent of us, an environment that poses challenges and rarely allows for the automatic realization of our goals.   We work out ways of achieving those goals through representing aspects of that environment, and the heart of the realist inference from success to truth is the point that some of our representations overcome obstacles that would otherwise frustrate our ambitions.

More exactly: systematic world-adjusting success cannot be taken for granted, but is something to be explained.   Guided by representations of parts of the environment through which they are attempting to navigate, investigators find a way to reach the ends they seek.   World-adjusting success is expressed in representation-coordinated behavior, as when the molecular geneticist uses her genetic maps to manipulate the bacteria and the worms and the flies.   To link world-adjusting success, but not cultural success, to the notion of truth is to appreciate the link between elements of the representation and parts of a world that is typically independent of the representer.   The thought that the world is independent of us and of our cognitive lives emerges from the everyday perception that other people come and go in a world that is independent of them, remaining as they depart, temporarily or even permanently.   We are no different from them, and we justifiably conclude that, just as

the entities perceived by our fellows persist in their absence, so too they abide when we are no longer there.   Onlookers tracking us would conceive of our relationship to the surrounding world as we conceive of it in the case of those whom we observe.   Just as we can understand the success (world-adjusting success) of a map-user as achieved in virtue of a correspondence between the elements of the map that guides her and parts of the terrain through which she moves, so too scrutiny of our own representation-guided world-adjusting successes would understand them as brought about because of the referential relations between our symbols and parts of nature.   So there arises the idea of a correspondence between thought and a world largely independent of us all, a correspondence manifested in the world-adjusting successes of our beliefs.   For our beliefs to work, in the intended world-adjusting way, in the long run and on the whole, the sort of correspondence central to my proposed account of truth is required.

It is important, however, not to over-interpret this conclusion, for it is easy to downplay a central pragmatist theme, the emphasis on pluralism.   Although James and Dewey are both adamant that there is an independent reality to which our thoughts and actions respond – indeed the imputation that he denies that independence provokes Dewey to a moment of uncharacteristic irritation[19] – they insist that this independent reality is not *independently structured*: it doesn't come pre-divided into privileged objects and kinds of objects.

Both James and Dewey elaborate this idea by appealing to the analogy with the block of marble.   The example stems from James' days as a psychologist:

> The mind, in short, works on the data it receives much as a sculptor works on his block of stone.   In a sense the statue stood there from eternity.   But there were a thousand different ones beside it, and the sculptor alone is to thank for having extricated this one from the rest.[20]

Given the way we are, and the interests we have, certain precipitations of objects will seem more "natural" to us – certain statues will seem to have a privileged status – but this feeling of naturalness must be appreciated as relative.   James notes that we might group the stars differently into constellations, and he might have gone on to remark that even the stellar boundaries, whether in space or time or both, might be drawn in different ways.   As we respond to "independent reality", there are dizzyingly many possible choices for our recognizing a world of objects divided into kinds, even though almost all of these options strike us as bizarre or "unnatural", statues we don't see as worth carving:

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[19]   *Experience and Nature* (*Late Works* Volume 1) 24 fn.3.
[20]   *Principles of Psychology* (Cambridge MA: Harvard University Press, 1981) 277.

> A particular dust-wreath on a windy day is just as much of an individual thing, and just as much deserves an individual name, as my own body does.[21]

Dust-wreaths, however, are only the beginning, for those who have learned the basic ideas of mereology will see how strange mereological sums can be formed from parts of very different entities, uniting fragments of stars and people and dust-wreaths and trees and ancient pots and a whole host of other discordant constituents.

Vivid though it is, the analogy with the block of marble can easily mislead. If you think of the block of marble as completely homogeneous, you'll be inclined to suppose, without any relativization to a subject having particular cognitive capacities or particular interests, that *any* division into objects and kinds of objects is as good as any other. (Indeed, you will suppose that this point applies to the subject and her alleged capacities and interests!) That is not my conclusion, nor was it, I believe what James aimed to say. Rather, given particular capacities and particular interests, some ways of dividing up independent reality work better than others. The analogy might be elaborated by suggesting that there are fault lines in the block – directions along which the chisel slides more easily. Yet here too care is required, for those lines are dependent on the sculptor, on the kinds of tools he has and the predilections he has acquired. The mix of realism and constructivism at which pragmatic pluralism aims requires the analogy to be understood in a carefully circumscribed way.

We might approach the difficulties of characterizing that elusive mix by thinking in terms of languages and of their "naturalness". The strongest version of realism supposes that there is some language – "nature's own" – that would identify objects and kinds as they Really and Independently are. Pragmatists want to correct that vision by abandoning the thought of Nature's Own Language, and the first step is for them to recognize that there is some vast infinity of languages in which truths about independent reality might be recorded, only an infinitesimal subset of which might prove valuable for beings with particular cognitive capacities and particular interests. In *stating* that thesis, however, pragmatists take for granted a certain language, one that identifies capacities and interests, as well as features of independent reality that favor particular divisions as concordant with such capacities and interests. In principle, that language too could be subjected to the same pluralist point, but to articulate a thesis about the many ways to understand what we currently describe as human thought and action would itself require a further language, and a selection of privileged objects and kinds of objects. That language, in its turn, would invite a reiteration of pragmatist pluralism. So it goes, as far and as long as we are willing to envisage the possibility of alternatives. At some point, we must simply acquiesce in a chosen way of talking, taking its distinctions for granted, even as we use it to expose the choices that have been

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[21]   *Principles of Psychology* 274.

made in adopting other languages.[22]   Pragmatic pluralism invites us to take a stand by committing ourselves to a particular way of speaking, while recognizing that the uses of that language to recognize and appraise other linguistic choices could legitimately give rise to a parallel scrutiny and appraisal of the commitments that have been presupposed.

The stylized scenarios envisaged in the previous section expose the ways in which uses of language relate to something independent of the speaker, something that endures beyond the individual language-user's interaction with it, and so give substance to the idea of correspondence.   Our imagined map-user deploys her well-entrenched categories and cognitive habits to organize her experience of a reality independent of her.   In following her words and actions, observers must presuppose categories of their own, organizing the world, taken as "that which is independent of the observed agent", into a world of objects and kinds of objects.   Second-order observers, looking on at the focal agent and the first-order observers who identify her actions and their successes, would themselves presuppose a way of organizing the independent reality to which those they study – agent and first-order observers, alike – are responding.   So it goes indefinitely.   Moreover, although at each level, observers are likely to attribute to the agent an organization akin to the one they prefer, there is likely to be scope for indeterminacy: we can envisage that alternative schemes would fit.[23]   I shall urge shortly that this is not a worry for Real Realism.

First, however, a final caution about the analogy with the block of marble. James' discussions of the statues latent in the stone might easily prompt one to say a very unJamesian thing, to wit that there was a pre-existing relation between symbols (for example, signs on the map) and parts of independent reality.   In this vein, one might see the agent as rediscovering that relation during her navigational project. What the agent rediscovers, however, is not some timeless relation between sign and reality, but a humanly constructed correspondence.   Surveyors and cartographers moved through this environment, and their measurements and drawings gave rise to the constellation of symbols on the map.   The map-user who finds her way to memorial Hall can be said to re-discover *their* references through her own recognition of their movements.   What is needed for her success is a sharing of perceptions of similarity, not any language-independent structuring of reality.

If these reflections are correct, we can demystify the notion of reference, and, derivatively, that of correspondence.   Pragmatists can accept the correspondence account of truth that James found in his dictionary, and they can give substance to that

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[22]   My formulation here owes an obvious debt to Quine, and to his views about Ontological Relativity.   See *Ontological Relativity* (New York: Columbia University Press, 1970).

[23]   Again, there is kinship with Quinean insights.   See *Word and Object* (Cambridge MA: MIT Press, Chapter 2) and *Ontological Relativity*.

account in ways that explain why world-adjusting success and not mere cultural success is crucial.   Further, as I'll now argue, they can combine that approach to truth with a celebration of the plurality of ways in which the world can be organized into objects and kinds.

<p style="text-align:center">IV</p>

Consider the island of Manhattan.   In one sense, it is part of independent reality, in no way dependent on us and on our thought.   Yet, in another, it is profoundly dependent on us and our constructions.   For *how much* of what is independent of us is to count as a single object?   That is for us to decide.   The deepest difficulties in the realism debate arise from the legitimacy of these two perspectives.   Pragmatism and Real Realism combine to enable the integration of ideas that initially appear irreconcilable.

We draw the boundaries of Manhattan.   Whichever boundaries naturally occur to us, we can conceive of others who would draw them differently, either because they had different modes of sensory access to reality or because they had different interests. Indeed, with respect to the latter sort of variation, imagination isn't needed. Geologists, water sports enthusiasts, and avid walkers are likely to recognize the relevant boundaries in different places.   If one of these activities dominated the community interest, its preferred boundary would become privileged.   So there might arise different language-speaking communities, each deploying the notion of area, but differing in the estimates they gave of the area of the island.   Assuming that all employed surveyors who proceeded with great care, the differences would be merely verbal.   One group declares that the area of Manhattan is a_1, another that it is a_2, where $a_1 \neq a_2$.   The idea that they share a common world, about whose features they agree, is easily sustained by attributing schemes of reference that associate the term 'Manhattan' with different chunks of independent reality.   Once the rival communities engage in serious discussion with one another, they can find the appropriate schemes of reference and come to agreement.   Moreover, they (and we) can see that there are indefinitely many candidates for Manhattan, many different languages that use the term 'Manhattan' in slightly different ways, so that, if speakers from several (or many) of these languages repeatedly conversed with one another, it might be useful to index the term to the various speech communities.   There would be no obstacle to recognizing each of the many Manhattans, to saying that, for each index i, the world contains Manhattan$_i$.   Despite the fact that we allow for *any* of these choices, we plainly don't want to suppose that *all* are simultaneously made: we don't intend to claim that there are infinitely many Manhattans, unless by this we mean simply to recognize the possibility of all the options.

"Manhattan exists" is true because Manhattan exists.   Moreover, sentences composed of just that sequence of letters are true, *however* they are assigned to one of the vast number of potential languages.   That's simply a way of recognizing that there's a chunk of independent reality that accords with each of the rival conceptions of Manhattan.   So far, the realist perspective.   Constructivism comes in the thought that, until we have specified the capacities and interests of the subject, none of these chunks of independent reality has any privileged status.   For some inquirers, only a relatively small subset of the languages would be appropriate, and, correlatively, only some of the boundaries would be serious candidates for delineating objects.

How we draw boundaries depends on both our interests and our cognitive capacities.   We can appreciate the possibility that creatures with different sensory powers would divide independent reality into objects in different ways, without being able to give much substance to the alternatives.   With respect to interests matters are different, for we understand in far more detail how the contours drawn by the geologist and by the sportsman might differ.

We come to speak a language in which we formulate thoughts that guide our behavior; that guiding of behavior gives rise to relations of reference that connect our words with particular bits of reality.   Those parts are marked out through our activities, and, if we have adjusted our language well, they enable us to pursue successfully the enterprises that matter to us.   The objects we refer to are parts of independent reality, even while the fact that that particular part has been singled out *does* depend on our community, on the capacities of its members and on its aims and values.

Yet, as the tendency of the previous section already acknowledged, a complication is in order.   Perhaps our signs are not equipped with a single scheme of reference.   Quine's famous "Gavagai" example suggests that our references might be understood in terms of enduring objects or in terms of object-stages.[24]   By the same token, when we think about drawing the boundary of Manhattan (or any other object), it appears likely that our thoughts and behavior allow for an infinite set of alternatives (indeed a set having the cardinality of the continuum).   These indeterminacies can be recognized without supposing that there are alternative strongly conflicting accounts of independent reality, among which we are somehow undecided.   For, when they are examined, we see that all the continuum many possibilities serve our purposes and provide us with equivalent means to the world-adjusting successes at which we aim – even that they supply us with worlds of objects that are, in the features significant for us, the same.

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[24]   *Word and Object* Chapter 2.

The locution just introduced provides a direct way of reconciling the two perspectives that draw us towards realism and towards constructivism. Talk of "the world" can be aimed at what is (largely) independent of us and of our thought. In this sense it is a truism to declare the world to be independent. Yet the phrase 'the world' may be understood as short for "a world of objects" or "a world of objects divided into kinds", and, in this sense, it's appropriate to hold that the structuring is done by us, that the fact that just these parts are picked out as objects and divided into kinds in just this way reflects our choices, and ultimately our capacities and interests. If we suppose 'the world' to be shorthand for the richer conception, then it's reasonable to talk, as Goodman does, of "many worlds", even of "many worlds we inhabit"[25], and to hold that these worlds are partly due to our own constructive activity. It may even be apt to suppose, as Kuhn does, that scientific revolutions "change the world".[26]

I want to emphasize that the example of boundary-drawing that I've used for illustrative purposes is only the most humdrum of the ways in which alternative divisions of reality into objects can be generated. Although our usual practice is to require spatio-temporal continuity – or, more accurately, apparent spatio-temporal continuity – of the objects we pick out, there are occasions, both with respect to organisms and artifacts, where we liberate ourselves from this constraint. It's easy to appreciate that, given certain kinds of projects, we might do so far more generally. Moreover, in the case of natural kinds, there are abundant examples of actual alternatives. As I've argued at some length, different conceptions of species suit the interests of different inquiries: the traditional biological species concept (and its relatives) is appropriate for natural histories of sexually reproducing organisms; cladistic approaches are designed to resolve certain evolutionary questions; and structural approaches are most useful in medical studies of pathogens.[27]

The pluralism I've been sketching apparently makes it easier to defend scientific realism – for, you might suppose, this liberal attitude to objects and kinds makes it more likely that successful parts of science will be able to locate their ontologies within *some* world of objects. Indeed, you might worry that realism become a truism. To address such concern, it's worth noting that there are many entities claimed by sciences, or other bodies of doctrine, that find no place in any of the worlds (or in *the* world, conceived as that which is independent of us). Try as you may, you won't find a chunk of reality that counts as the fountain of youth, nor will you discover a substance that is invariably

[25]   Nelson Goodman *Ways of Worldmaking* (Indianapolis: Hackett, 1978).
[26]   Thomas Kuhn *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962 and 1970).
[27]   See my "Species" *Philosophy of Science* 51, 1984, 308-33, and John Dupre *The Disorder of Things* (Cambridge MA: Harvard University Press, 1993).

emitted when things burn. Even on the approach to truth and reality I've adopted, the principal claims of ontological failure made by anti-realists who favor the pessimistic induction on the history of science will still be sustained. Their arguments have to be answered differently.[28]

This means that, while there is a sense in which I can endorse Kuhn's provocative thesis about scientific revolutions as changing the world, I must diverge from his own understanding of it. First, the world, conceived in the bare way, as that unstructured, largely independent, reality to which our thought responds, doesn't alter. Second, when objects are conceived differently or when taxonomic categories are adjusted to suit new inquiries or new interests, the world of objects, structured into kinds, does indeed change. Third, because scientific revolutions typically involve this restructuring, the world-of-objects after the revolution will be different from the world-of-objects before. Fourth, because scientific revolutions also entail the repudiation of some of the entities previously invoked, seeing them as not counting as chunks of independent reality, parts of "the world" in the bare sense, not all the world-changes envisaged by Kuhn should be certified as genuine.

The example of the chemical revolution will help make this more perspicuous. Lavoisier divides independent reality differently from his phlogistonian opponents: different substances are taken to be pure; samples are grouped together in new ways; the treatments of oxygen and of acids provide clear examples. At the same time, some old entities are repudiated. Phlogiston, understood as the substance always emitted in combustion, turns out not to be a part of reality – indeed *it never was.* Hence, although the chemical revolution does take the chemical community into a different world, a different *world of substances and kinds*, it doesn't replace a world with phlogiston by a world with oxygen. Debates about Kuhn's views have tended to oppose a vision of entire ontological replacement – the world once had the ontology of the phlogistonians and now has the ontology of Lavoisier and the new chemists – with the polar vision of a world that doesn't change at all. Pragmatism, allied with Real Realism, finds a way between the poles.

V

The present essay does not attempt to resolve all the issues that have occupied participants in the debate over scientific realism. It is motivated instead by a concern to respond to a particular objection: once the insights of the classical pragmatists are given their due, the entire debate collapses. My aim has been to show that serious

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[28] As I try to do in Chapter 5 of *The Advancement of Science* (New York: Oxford University Press, 1993).

attention to the ideas of James and Dewey leads to a set of ideas about truth and language-pluralism that can be clearly articulated, that can provide an appropriate framework for the realism debates, and that can illuminate some claims made in recent discussions about scientific change.   Yet it is worth returning at the end to the principle James claims to borrow from Peirce, and to ask what difference the acceptance of realist or anti-realist doctrine is supposed to make.

Sometimes anti-realists suggest that their proposals make *no* difference, that they leave the daily practice of the sciences unaffected.   In some moods, van Fraassen is willing to allow those who genuinely think they *see* through a telescope or microscope to "immerse themselves in the life-world of the theory".[29]   If that is the "practical payoff" of anti-realism, then, on pragmatic grounds, the debate is one of those James would recommend that we ignore.[30]   Real realists think the debate is necessary because, on other occasions, anti-realists draw a sharper distinction between "first class" and "second class" entities, and, more importantly, because they think an adequate picture of the relations between our scientific claims and the world is required if important issues about the role of inquiry in human life are to be addressed.   The trouble is that the absence of a picture provides an opportunity for those who mouth pragmatist doctrines to replace the muddled metaphysics of strong realism (a metaphysics that view reality as pre-packaged into objects and kinds) with an equally muddled metaphysics of constructivism.   Unless the issues are confronted, pragmatists will constantly be viewed as lapsing into some form of subjectivism.[31]

The most important issues in the philosophy of science – still largely neglected by most philosophers – are those that seek to understand the place of scientific inquiry (broadly construed) in human projects.   What is often characterized as "the linguistic turn" could, with equal justice, be labeled "the apolitical turn".   Despite all the excellent questions the logical empiricists posed about science and its methods, the tradition they began has ignored the ethical, social, and political questions that arise in understanding inquiry.

The account I have offered does not merely seek to integrate the considerations that pull towards realism and towards anti-realism, and that thereby generate metaphysical muddle – it also invites us to recognize that the world in which we live, the world of objects and of kinds of objects, reflects decisions that our predecessors have made about what investigations are most profitable.   Those decisions deserve periodic

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[29]   Bas van Fraassen *The Scientific Image* (Oxford: Oxford University Press, 1981).
[30]   A point akin to this is made by Samuel Mitchell "Constructive Empiricism and Anti-Realism", in Arthur Fine and Jarrett Leplin (eds) *PSA 1988* Vol. 1 (East Lansing MI: Philosophy of Science Association) 174-80.
[31]   As Dewey was.   See fn. 19.

scrutiny, before enthusiastic scientists charge on to the next exciting project.   Once it's appreciated that there's no meaningful enterprise of finding the "complete account of nature", it's clear that inquiry is inevitably selective.   Because the selections, past and present, have consequences for people's lives, they deserve critical attention.   Real Realism, conceived as part of pragmatism, returns us to the vision of inquiry as the classical pragmatists saw it.   Inquiry, in Dewey's broad and liberating conception, is aimed at the general good.   Framing languages, posing questions, and finding true answers are – often, although not always – steps towards achieving that good. Metaphysical accounts of truth and reality are required only to free us from confusions about what we are doing, and to focus our attention on our goals and the strategies for achieving them.   The marriage of realism and pragmatism envisaged here is, I suggest, metaphysics enough.