

THE ORIGIN OF AN INQUIRY: EVOLUTIONARY EPISTEMOLOGY IN JAMES' PRAGMATISM

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"Much struck."

That was Darwin's way of saying that something he observed fascinated him, arrested his attention, surprised or puzzled him. The words "much struck" riddle the pages of both his *Voyage of the Beagle* and his *The Origin of Species*, and their appearance should alert the reader that Darwin was saying something important. Most of the time, the reader can infer that something Darwin had *observed* was at variance with what he had *expected*, and that his faith in some alleged law or general principle had been shaken, and this happened repeatedly throughout his five year sojourn on the *H.M.S. Beagle*. The "irritation" of his doubting the theretofore necessary truths of natural history was Darwin's stimulus to inquiry, to creative and thoroughly original abductions.

"The influence of Darwin upon philosophy resides in his having conquered the phenomena of life for the principle of transition, and thereby freed the new logic for application to mind and morals and life" (Dewey p. 1). While it would be an odd fellow who would disagree with the claim of Dewey and others that the American pragmatist philosophers were to no small extent influenced by the Darwinian corpus,¹ few have been willing to make the case for Darwin's influence on the pragmatic philosophy of William James. Philip Wiener, in his well known work, reports that

Thanks to Professor Perry's remarks in his definitive work on James, "the influence of Darwin was both early and profound, and its effects crop up in unexpected quarters."

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¹ There is no dearth of references for the impact of Darwin upon philosophy, American or otherwise.

But that being said, Wiener proceeds to "trace James' use of the Darwinian idea of evolution in [James'] magnum opus, *The Principles of Psychology*," beyond which tomes Wiener felt no need to trespass (as is clearly evinced by Wiener's choice of sources and citations) (Wiener, p. 104). It is neither my intention to discuss why Wiener decided to confine his investigation of James' Darwinism to *The Principles*, nor whether Wiener was indeed justified in that decision. Yet while reading the collection of James' 1906-1907 Lowell Institute lectures (thereafter published as *Pragmatism: A New Name for Some Old Ways of Thinking*), I was "much struck" by their Darwinian feel, by their Darwinian-sounding phrases, and by their general resonance with the theory of evolution *via* descent with modification—"natural selection." Whatever Wiener's reason for forsaking *Pragmatism*—and I suspect some over-reliance on the advice of R.B. Perry had something to do with it—it seems to me that he ought not have.

Though Wiener's book is in many respects the seminal work on the relationship between Darwin and the founders of the American philosophical tradition known broadly as *pragmatism*, it is not the only work that treats of this subject, and Wiener is not alone in his virtual abandonment of *Pragmatism* in favor of other sources for insights to James' dalliance with Darwin. Cynthia Eagle Russett, in her *Darwin In America: The Intellectual Response 1865-1912*, cites *Pragmatism* only once,² and Peter J. Bowler neglects *Pragmatism* entirely, thereafter offering only the most pithy citations from James' *Principles*. And while Michael Ruse (in his stimulating *Taking Darwin Seriously*) was considerably more generous in his treatment of James than either Russett or Bowler—Ruse actually cites *Pragmatism* in his bibliography—he, too, did not apparently find the Lowell Institute lectures as interesting a source for James' Darwinism as I have.

The important question that this raises is: *Are these authors justified in leaving Pragmatism out of their portrait of James as a Darwin-influenced philosopher?* And while this question is quite germane to my present agenda, I propose to answer it only by way of offering my own celebration of what seems to me to be James' genuine evolution-

² James: "To determine a thought's meaning, we need only consider what conduct it is fitted to produce." To her credit, she chose a passage which has a good Darwinian word in it, that is, "fitted." The means-end relationship here is consistent with my observations about James' Darwinian thinking, apropos adaptation, adaptive traits, &c.

ary epistemology.³ Should I succeed in convincing the reader that there is much Darwinian thought in James' *Pragmatism*, and more importantly, that James' remarks on common sense are best appreciated when read from a Darwinian point of view, then I feel that I will have demonstrated that the above mentioned treatments of James are, on this head, deficient.

Some perambulatory remarks are necessary:

I believe that Darwinian evolution may be an invaluable way to frame what James had to say about, among other things, *common sense*. While Wiener has focused almost exclusively on how Darwin's work influenced James' physiological psychology—and I think Wiener implies: by that route, James' philosophy—I hope to show how James' thoughts on *common sense* can best be appreciated if one thinks about them in terms of Darwinian evolution. It is, of course, too easy to impose upon James evolutionary ideas which could scarcely be called outgrowths of James' reading of *Origin* (&c.); and to this extent these would not be, properly speaking, *Darwinian* in origin. I have been careful not to use (e.g.) post-evolutionary synthesis ideas about molecular genetics to bring out the "evolutionism" in James' pragmatism—even when these ideas genuinely resonate with the spirit of Darwin's own evolutionary theories.

Pragmatism has long been esteemed as one of the classics of this nation's indigenous philosophy. If our appreciation of *Pragmatism* is to survive, if the slim tome is not to become extinct from the shelves of college bookstores—or from syllabi—then we might wish to consider the advantages of adapting our reading of it—in spite of Wiener (et al.).

I. Evolutionary Epistemology: What is it?

The history of the use of the word 'evolution' is itself interesting; and were it not question-begging I would begin by saying that the word has undergone considerable *evolution* before and since Dar-

³Ruse rejects that James ever articulated an "evolutionary epistemology." This, however, has as much to do with disagreements about what precisely "evolutionary epistemology" is, as it does with (a) what James had to say about knowledge, (b) what James had to say about evolution and Darwin and (c) what James meant when he said it!

win.⁴ For our purposes, we may define 'evolution' simply as *a change in form or behavior over time*. To explain "evolutionary epistemology" is a somewhat easier task, thanks to the new *Blackwell's Companion to Epistemology*, which devotes three pages to the subject. Excerpts from the first two paragraphs (for our present purpose) do an admirable job of summing it up:

This is an approach to the theory of knowledge that sees an important connection between the growth of knowledge and biological evolution. An evolutionary epistemologist claims that the development of human knowledge proceeds through some natural selection process, the best example of which is Darwin's theory of biological natural selection. The three major components of the model of natural selection are variation, selection and retention ... [T]hose variations that perform useful functions are selected, while those that do not are not selected ... In the modern theory of evolution, genetic mutations provide the [random, non-directed] variations ... the environment provides the filter of selection, and reproduction provides the retention ... Evolutionary epistemology applies this blind variation and selective retention model to the growth of scientific knowledge and to thought processes in general (Blackwell, p. 122).

The "evolution" part is sometimes meant quite literally (cf. Steven Toulmin), while others intend only that knowledge, knowledge acquisition, "belief fixing," obtain in an *evolutionary* sort of way: Beliefs vary, and these differing beliefs "compete" for limited attentional resources, for scarce cognitive space, for some functional role in our lives. Some of these beliefs, owing to their present fitness—i.e.: their tried-and-true value in our lives—fare the struggle for survival better than other beliefs; these beliefs are the ones that *are kept*—and which go on to support the production of other beliefs, which will *ensemble* provide the firmament for future abductions.

⁴ Curiously, Darwin does not use the word "evolution" once in the first edition (1859) of *Origin*. The closest he comes is the cognate "evolved"—*it is the last word in the book*.

Literal application of the theory of evolution to epistemic matters is fraught with difficulties: First, "knowledge" is lumped together with the set "all organic beings" and then the laws believed to obtain for the latter are applied to the former. A less objectionable exploitation of evolutionary principles (as described above) is *as a model* for how persons fix beliefs (or, for how beliefs seem to get fixed), since the principles of evolution⁵ are taken strictly heuristically.

The claim, then, is that the value of our reading James' *Pragmatism* is enhanced if we understand it as an attempt to articulate a theory of knowledge which is based in part on the Darwinian model of evolution.⁶ I will endeavor to unearth for the reader key passages in the chapter on common sense which support my claim that James intended his audience at the Lowell Institute to be thinking about Darwin and his principles of biological evolution. I am assuming that James accepted Darwinism, accepted the argument that species evolved from a single common ancestor, that he rejected creationism as well as Lamarckism (&c.) as alternative accounts of the origin of species. A good question to ask at the outset, then, is this: *What sorts of beliefs about the world would someone who accepted Darwinian evolution be likely to have?* And one sort of answer is this: *uniformitarianism and actualism.*

II. "Uniformitarianism" and "Actualism"

Without going into great detail, it should be recalled that the way for Darwin's evolutionary model and mechanism was paved in part by the geologists of the earlier part of that century, who, challenging Usher's pronouncement that the world was created by God in the year 4004 B.C., attempted:

(1) to establish that the age of the earth was much greater than

⁵ While there is much agreement within the field, evolutionary biologists (to include molecular geneticists working on evolutionary problems), there is still much disagreement about (e.g.,) whether natural selection or neutral drift is the leading cause of evolution, how species ought to be qualified, &c. It would be wrong to believe that there is one and only one "evolutionary theory." I am grateful that, for the purpose of this paper, I shall not need to trespass too far beyond the well-established and generally accepted core of post-evolutionary synthesis thought.

⁶ An additional claim is, of course, implied, namely that Wiener (et al.) erred by *not* reading *Pragmatism* with Darwin in mind.

that affirmed by ecclesiastical authority, and

(2) that the physical characteristics of the earth were the result of natural phenomena, and not supernatural megaphenomena.

The rejection of various "Vulcanist" and "Neptunian" catastrophic theories was made possible chiefly through the efforts of James Hutton and Charles Lyell,⁷ whose separate efforts combined in time for Darwin to have a world which was both old enough and inherently dynamic enough to be the stage for evolution. According to *uniformitarianism*, "processes now seen by humans to operate could have operated when humans were not watching." (Ridley, p. 43). Uniformitarianism was, among other things, an argument against the necessity of supernatural causes. The earthquakes and volcanoes, storms and mud slides that now occur throughout the world have probably always gone on; and given enough time, these forces could have molded the present landscape like so much putty. There was no need to postulate God's creative hand in shaping the mountains, in carving out the valleys; time and the mundane physical forces such as those now known could have given our planet its complexion. Darwin betrays his uniformitarianism in *Voyage*, when he relates his experience of witnessing an earthquake while at Concepcion:

A bad earthquake at once destroys our oldest associations: the earth, the very emblem of solidity, has moved beneath our feet like a thin crust over a fluid—one second of time has created in the mind a strange idea of insecurity, which hours of reflection would not have produced. (VB, p. 303).⁸

Do we find any evidence that James espoused the uniformitarian hypothesis? Yes, though admittedly, trivially so; it would be more strange for a man of science such as James to *not* have accepted Lyellian geology. Be that as it may, there is one passage in "Pragma-

⁷ My chief source of information about Hutton, Lyell and the birth of historical geography has been *The Discovery of Time*. Consult index for pertinent passages.

⁸ I think that it is interesting that Peirce, also a child of the 19th century's "evolutionism," wrote: "That single events should be hard and unintelligible, logic will permit without difficulty: we do not expect to make the shock of a personally experienced earthquake appear natural and reasonable by any account of cogitation" (*The Doctrine of Necessity Examined*, 1892).

tism and Common Sense" that clearly suggests that James wished to remind his audience of the value of uniformitarian theories as such, apart from their well-known application in historical geology:

New truths are ... resultants of new experiences and of old truths combined and mutually modifying one another. And *since this is the case of changes of opinions of today, there is not reason to assume that it has not been so at all times* (p. 78).

That is: the habits of mind, the peculiarities of mental life, the way in which persons think about the world, has not changed. But why should it be important for James to show that the way men and women think in 1907 is not different from the way men and women thought in 1807? 1707? 707? It is important, as we shall see, because James is to play upon the Darwinian theme of descent with modification, upon the idea of inheritance. This germ of uniformitarian thought, then, may be counted as our first bit of evidence in favor of James' use of evolutionary principles in and throughout *Pragmatism*.

The second edge of the anti-catastrophic sword is actualism. While uniformitarianism is a statement about the kinds of forces (natural, common) which given sufficient time have the power to cause great change, actualism is a statement about the magnitude of those forces. For example, the uniformitarian hypothesis would explain the denudation of the Weald⁹ by the action of the waves; but it is the actualist hypothesis that argues against the occurrence of a "single diluvian wave." There is no need to invoke forces greater in magnitude than those we actually observe; all of the forces of change are publicly knowable, and these observable forces are sufficient to account for all historical change. On this head Darwin had written:

as modern geology has almost banished such views as the excavation of a great valley by a single diluvial wave, so will natural selection, if it be a true principle, banish the belief of the continued creation of new organic beings, or of any great and sudden modification in their structure (OS, p. 285).

⁹ The Weald is a horseshoe-shaped tract of land on the eastern coast of England, due west of Dover.

[The actualist hypothesis having been flushed-out, Darwin later fleshes it out:]

If, then, we knew the rate at which the sea commonly wears away a line of cliff of any given height, we could measure the time requisite to have denuded the Weald. Hence, under ordinary circumstances, I conclude that for a cliff 500 feet in height, a denudation of one inch per century for the whole length would be an ample allowance (OS, p. 285).

Statements such as these abound in *Origin*, and perhaps it was to one such passage that James was referring when he wrote:

But when we look back, and speculate as to how the common-sense categories may have achieved their wonderful supremacy, no reason appears why it may not have been by a process just like that by which ... Darwin [et al.] achieved [his] similar triumphs in more recent times. In other words, [the common-sense categories] may have been successfully *discovered* by prehistoric geniuses ... [the common-sense categories] may have been verified by the immediate facts of experience which the first fitted; and then from fact to fact and from man to man they may have *spread*, until all language rested on them and we are not incapable of thinking naturally in any other terms. Such a view would only follow the rule that has proved elsewhere so fertile, [namely], of assuming the vast and remote to conform to laws of formation that we can observe at work in the small and near (P, p. 83).

This is as explicit a reference to actualism as one could hope to find in any non-geological, non-evolutionary tract—but why would James make it? Why would he wish to implant in the minds of his audience the idea that the magnitude of those forces “that we can observe at work in the small and near” would be sufficient to bring our brute common sense from a remote age into the present? If we

embrace my hypothesis—that James was thinking seriously about Darwin and evolution when he articulated his “pragmatism”—then the answer is plain.

As the Weald was made by the sustained, gentle lapping of the sea upon the shore, so too has the mind of man been made by the sustained attempts of our somewhat hairier forebears to come to grips with the rude contingencies of life. The “booming, buzzing” world which challenges us every day, confronts us at every turn, is the same “world” in which our antecedents were immersed, just as it is the same sea which has long nibbled away at the chalk cliffs of Dover. The net effect of this ceaseless tide of experience upon the human intellect is a brain, a nervous system, a mind peculiarly adequated to this “red in tooth and claw” natural world. Not only does James here deftly dispatch of any lingering transcendental *a priori*-isms, but he provides a thoroughly naturalistic account of the origin of common sense. If this is a fair appraisal of what James was really up to, then, we too may concede that James was to some extent mindful of the effects of inheritance on the one hand and differential fitness on the other. In other words, James would have to have been thinking about descent with modification, mitigated by some form of (natural?) selection against disutility.

III. Natural selection

What would be the features of a genuine evolutionary epistemology? Again, if the “epistemology” itself only uses “evolutionary” concepts *as a model*, then we must only be able to analogize epistemological concepts into evolutionary ones, and then apply the theory of evolution—in this case, Darwin’s theory—to the epistemological concepts. How convincing the theory of knowledge is will be a function of (a) how well the paradigm retains its integrity, and (b) how well the paradigm works for the ideas therein treated. That is, an evolutionary epistemology can fail to be either “evolutionary” or much of a theory of knowledge if, on the one hand, the model of evolution is changed too radically in order to accommodate the epistemologist’s agenda, or, on the other hand, if there is little payoff from the application of the evolutionary model.

Since Darwin explained evolution by way of the mechanism of

natural selection, the most important aspect of any so-called "Darwinian epistemology" is the application of this mechanism to epistemological constructs (i.e., beliefs, ideas, the relations between these and "truth," and the whole host of terms the epistemologist uses). We must therefore begin by articulating what "natural selection" means to the evolutionary biologist, and Ridley has defined it thus:

natural selection: Process by which the forms of an organism in a population that are best adapted to the environment increase in frequency relative to less well-adapted forms over a number of generations. (Ridley, p. 638).

In *Pragmatism*, the beliefs take the place of "forms of an organism," and everything else in the definition remains the same. Therefore, the position of James for which I am arguing is this: That some of the beliefs of individuals are best adapted to the environment of those individuals, and that as a result of differential fitness of these beliefs, their frequency in the population will tend to increase relative to the frequency of other beliefs in the population as a whole.

In order for natural selection (in the biological sense) to work, three factors must obtain. We need now to present these, and then see if our epistemology can be squared with them. They are:

(1) characters of organisms must be *variable*; e.g., no two giraffe necks are exactly the same length, at that there is a naturally occurring continuum of the length of giraffe necks;

(2) these characters must be *heritable*; e.g., the genes/gene complex responsible for the character here defined as "giraffe neck" must be able to be passed from parents to offspring; and

(3) the genotype (genes for characters) must have the effect of *differential fitness*, when expressed in the phenotype (physical form); e.g., the slight differences in length of the giraffe neck must place some individuals at an advantage, and others at a disadvantage, relative to the frequency of necks of certain lengths in the population.

Here again we must extrapolate from the ideas of biology to those of epistemology; and this is easily enough done. The "characters," here, are our beliefs, and these indeed are variable. No two persons believe *exactly* the same thing, about the same thing, at the same time; and if it were possible to catalog all of the beliefs held by two persons

it is unlikely that we would discover that they have exactly the same beliefs, though many beliefs—both correct and incorrect (e.g., that Paris is the capital of France, that a tomato is a vegetable) —*would* indeed be the same. Furthermore, these beliefs are “heritable,” in the sense that beliefs can be passed from one individual to another. Educators and parents, for example, pass on beliefs to their students and children, and daily, we are each exchanging and sharing ideas with one another.¹⁰ Beliefs, then, are “heritable,” or at least for our purposes, *heritable enough*. Lastly—and this is the upshot of James’ lectures—we get different results from the possession of different beliefs; those beliefs that do not work for us we jettison, while in contrast we may tend to better fasten-down those that do work, and which are, due to their utility, more highly valued by us. Experience is the crucible, and we will weed out those beliefs that are “unfit.”

It is worthwhile to note that this is a very *individualistic* truncating, and that the units of selection are individuals, and not groups; this is a point commonly misunderstood about Darwin and his scheme for evolution *via* natural selection, but not apparently by James. It just so happens that certain beliefs, like certain “heritable characters,” will grow in frequency throughout a given population *because* these beliefs happen to have tried-and-true value and do tend to be useful to their possessor. For example, James might say that most persons profess to believe in God, or to have some theologico-spiritual commitment as a result of some religious experience. The fact that an individual may have such-and-such belief (say, about the existence of a Spirit) is *not* a function of the prevalence of that belief in the “belief pool” (like “gene pool”) of the population; rather the prevalence of the belief among many individuals is an indication of the utility and value of the belief of those who have it. This “fitness” of (e.g.) spirituality is responsible for its high frequency in the belief pool, and if the belief did not confer some advantage to its possessors, its frequency distribution (in individuals and in the population) would drop. If the frequency dropped enough the belief would go

¹⁰Papers published in 1993 in both *Scientific American* and *American Scientist* address the issue of “horizontal gene transfer,” or, “horizontal drift,” which postulates that some parasites (e.g., viruses) are able to transfer genetic material (DNA) from one species to another. Thus the “hereditary” aspect of cultural, non-biological information (*per contra* the biological information of DNA) seems to have now a more sure analogical footing than it did in James’ time.

"extinct." The analogy between genes and beliefs is a good one; but if we are to be justified in attributing the full complement of these evolutionary ideas to James, we must turn to what James actually had to say; and we will now turn to *Pragmatism*.

IV. Pragmatism and Common Sense

James notes that "the world does genuinely change and grow," but that "knowledge grows in spots," and that "knowledge never grows all over" (*P*, p. 77). That knowledge "grows" implies that knowledge changes, and James explicitly remarks that the "modifications [of knowledge] are apt to be gradual" (*P*, p. 77). Localized, gradual change is in many ways the soul of Darwin's theory of evolution, and I think it is unlikely that James just happened to express his ideas about the dynamics of knowledge in Darwinian terms; James was thinking about knowledge *in* evolutionary terms, and these words suggest a Jamesian version of *Natura non facit saltum*.¹

James tells his audience that "novelties" in thinking are gradually introduced to our storehouse of opinions, and then, when the need arises, we "modify [the novelties] to some degree" (*P*, p. 78). This activity is not unlike that of the pigeon fanciers, whom Darwin treats at length in chapter I of the *Origin*, titled, *Variation under Domestication*. Who could have foreseen that a pigeon fancier would select the slight tendency of a pigeon to fall head over heels, and by exploiting this queer novelty producing the breed of tumblers? Or again: Who could have foreseen that the natural pausing of some dogs could be modified by breeding into the useful trait of "pointing"? These novelties were acquired genetically by the organism, and were later made use of by the fancier or sportsman. The storehouse of genetic information in organic things is not unlike the storehouse of information which minds acquire through time, which, like genetic diversity, may someday be marshaled to the front for use.

Most surprising to me was, perhaps, the discovery of a quote by a late 20th century evolutionary biologist which echoes what James said to his 1907 audience at the Lowell Institute. While this is not evidence in favor of James' debt to Darwin, I think it is evidence that

¹ Ed. note: *Natura non facit saltum* (nə tōr 'ə non fa'sit sal'təm), *Latin*, nature makes no leap.

there is something genuinely Darwinian about James' thought on epistemological matters. Keeping in mind the achronism, James said of the dynamics of knowledge,

We patch and tinker more than we renew. The novelty soaks in; it stains the ancient mass; but it is also tinged with what absorbs it. Our past apperceives and cooperates; and in the new equilibrium in which each step forward in the process of learning terminates, it happens relatively seldom that the new fact is added *raw* (P, p. 78).

There is much here that smacks of biological evolution: the close interaction between the genotypic milieu and its phenotypic manifestation, the acquisition of "novelty," &c. But of chief interest to me is the first sentence, which I think all will agree is startlingly similar to that of Jacob, who once described the mechanism of evolution thus: "Natural selection does not work like an engineer. It works like a tinker" (Mayer). My argument for the existence of James' willful and intentional comparison between (a) natural selection as the means of organic evolution and (b) a broader "evolutionary model" of our epistemic kinesis, again, seems to have some foundation.

The title of the lectures (as published by Longmann) is *Pragmatism: Or, A New Name for Some Old Ways of Thinking*. But how old is "old"? I think we can have a good laugh at the expense of so scrupulous an exegete as Wiener (et al.): by "old," James intended us to think of "old" in Lyellian, Darwinian terms, and to think of the word ancestral. If this is so, then the exclusion of *Pragmatism* from the literature on early evolutionary epistemological theories is unforgivable. The following is perhaps the best support for James' Darwinian agenda:

It follows that very ancient modes of thought may have survived through all the latter changes in men's opinions. The most primitive ways of thinking may not yet be wholly expunged. Like our five fingers, our ear-bones, our rudimentary caudal appendage, our other 'vestigial' peculiarities, they may remain as indelible tokens in our race-history. Our ancestors

may have stuck on a certain way of thinking which they might conceivably not have found. But once they did so, and after the fact, the inheritance continues ... You may rinse and rinse the bottle, but you can't get the taste of the medicine or whiskey that first filled it wholly out (*P*, p. 78).

The following report of some observations should, for my present purposes, suffice:

First: There is the appeal to some ancient time, and to units of change (opinions), and to differential survival of those units of change. These are the essential ingredients in the evolutionary epistemologist's soup.

Second: The references to both (a) our inability to completely "expunge" certain aspects of our thinking, and (b) the vestigiality of some characters of thought are most assuredly owed to the swell of interest in rudimentary/vestigial organs which—while not new with Darwin—was given new importance after 1859. The "five fingers"—pentadactyly, which is expressed in all mammals (and other taxa)—is still today one of the best known morphological homologies cited in favor of descent with modification. The "ear-bones," like the hand bones and jaw bones treated of by Sir Charles Bell (1774-1842) in his 1833 Bridgewater Treatise *The Hand: Its Mechanism and Vital Endowments as Evincing Design*, were popular subjects of debate after the publication of the *Origin*, and so the audience likely understood the reference as one being to evolutionary explanations.¹¹

Third: The references to the "caudal appendage" (clearly playing with ideas on human evolution) and to "'vestigial' peculiarities" were most assuredly summoned to James' mind from reading chapter 13 of the *Origin*, particularly the section titled "Rudimentary Organs." Of all of Darwin's arguments in favor of evolution via descent with modification, his appeal to embryology and to structural morphology were among the most impressive, and made the greatest impression upon men of science of the day. It is not surprising, therefore, that James would frame his views on the remnants of ancient "inherited" beliefs and opinions within the context of vestigial organs, *especially* if it was James' agenda to articulate an evolu-

¹¹ See Gould, Stephen J. "This View of Life." *Natural History*. August 1993.

tionary epistemology. But without such a reading of James, his genius (as seen in the brilliant bottle metaphor) might be under esteemed.

So James at last announces his thesis on page 79:

My thesis now is this, that *our fundamental ways of thinking about things are discoveries of exceedingly remote ancestors, which have been able to preserve themselves throughout the experience of all subsequent time.* [The fundamental ways of thinking about things] form one great stage of equilibrium in the human mind's development, the stage of *common sense*. Other stages have grafted themselves upon this stage, but have never succeeded in displacing it.

And indeed, why *should* common sense be "displaced"? The fact that it hasn't been overthrown, that it hasn't been jettisoned from the hold, is testament to its sustained *utility in time*. *Common sense has high fitness*. By speaking in such rich detail about the transmission of this primordial common sense from our "exceedingly remote ancestors" to ourselves, James reveals his commitment to some "epistemic principle of inheritance," and what's more, his postulation of "other stages" of thinking (with which common sense competed) suggests variation in the belief pool over time. Variety? Heredity? Differential fitness? ... Evolution.

The sophistication of James' appreciation of the complexities of evolution may be judged from the following. One of the biggest problems for evolutionary biology to this day is: *How do we know when something is really an "adaptation"?* The hypothesis that there will be adaptations is one thing, but their discovery, their recognition is another. (Darwin was mindful of this, as was he concerned with the tangentially related question of how common ancestors can be identified given the quite imperfect fossil record). Ridley has written on this matter:

The methods of studying adaptation work well *if we are studying an adaptation*. If the character under study is an adaptation then it must exist because of natural selection and it is correct to persist in looking for the

reason why it is favored ... However, if a character (or different forms of it) is not favored by natural selection, the method breaks down. Methods of studying adaptation should therefore be confined to characters that are adaptive. Probably, in practice, they mainly are ... However, there is still plenty of room for controversy (Ridley, p. 347).

If the matter of explaining adaptations is of concern to the evolutionary biologist, and if James really was thinking about evolution (and was distilling evolution into epistemology), then we should expect to find some indication that he too was concerned about adaptive explanation. And we do (though for James it is beliefs and knowledge that are the acquired characters, and are thus the objects of adaptive change):

In philosophy, [a man's common sense] means his use of certain intellectual forms or categories of thought ... It *might* be, too ... that such categories, unimaginable by us today, would have on the whole proved serviceable for handling our experiences mentally as those which we actually use (*P*, p. 79).

James will conclude his remarks on common sense by informing the audience that (1) "all our theories are *instrumental*, are mental modes of *adaptation* to reality," and by suggesting that (2) "Profusion, not economy, may after all be reality's key-note" (*P*, p. 87).

Regarding (1): Utility and adaptation had their first genuine synthesis with the natural historians, who saw the adaptation of means to ends in nature (e.g., the hawk's eyes) as evidence of the magnificence of the creator, but it was Darwin who provided the first viable mechanism for a naturally occurring means of such means-end adequation. I would tend to bet that James was here making reference to Darwin, and not to Bell or Paley.

Regarding (2): I invite the reader to consider whether James was addressing the quote popularized by Darwin: "Nature is prodigal in variety, niggardly in innovation;" I suggest that James was (*OS*, p. 461).

V. Conclusion

All of James' Darwinian-sounding remarks in *Pragmatism* may have some other cause, or they may be merely Darwinian "sounding," but not necessarily intended by James to be "Darwinian" in flavor. The list of prominent authors who have maintained that Darwin's influence on the ideas of James was both (a) limited and (b) confined chiefly to James' physiological psychology is long, and my study of James and the Jamesian corpus is short; I therefore cannot in good academic faith say that I have made an airtight case against those authors who have not dealt directly with *Pragmatism*.

I do, however, hope that reader was "much struck" by the similarities between Darwinian evolution *via* descent with modification and James' theory of knowledge, his "dynamic coherentism" (as I have elsewhere called it) as it was presented in the Lowell Institute lectures; I also hope that I have taken a small step towards demonstrating that "mere coincidence" may not be the best explanation for this. It is, at any rate, clear to this student that James' *Pragmatism* was an attempt to articulate an evolutionary epistemology—and that seems to be a possibility that has not been more rigorously explored by scholars of greater ability and resource than myself.* But whatever may come from this short study, (to quote Darwin), "It is interesting to contemplate an entangled bank," which the Darwin-James/evolution-epistemology nexus certainly is; and I would be pleased to have, in however small a way, enlarged the perspective of the reader.

* *Addendum*: No study of Darwin's influence on James would be complete if it did not include a reading of Robert J. Richards' *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior* (Chicago, 1987). It is with no small measure of embarrassment that I report that I happened upon this work after this paper had been submitted. But much to my surprise, (and to my delight!) Roberts—who cites some 20 works by James, and who treats James at great length—does not include *Pragmatism* in his bibliography.

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