The Personal Equation in Science: William James's Psychological and Moral Uses of Darwinian Theory

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To be an intellectual in the mid-nineteenth century required that one suffer a severe spiritual crisis or mental breakdown. At least the lives of the more famous thinkers of the period suggest this. John Stuart Mill felt profound emotional emptiness when he realized that the measure of his happiness would not be increased even if his Benthamite reformist desires were satisfied. As he confided in his *Autobiography*, he "seemed to have nothing left to live for."[1] Charles Darwin's immobilizing digestive and cardiac problems began when he started work on his theory; and five years after the publication of the *Origin of Species*, his health and spirits reached their nadir. Herbert Spencer, in the great effort to finish his *Principles of Psychology*, said his "nervous system finally gave way" — for eighteen months.[2] Francis Galton, who at Cambridge failed to meet his father's expectations, complained of obsessive ideas, along with "intermittent pulse and a variety of brain symptoms of an alarming kind."[3] A student of Wilhelm Wundt described his teacher's tenure as Helmholtz's assistant as "seventeen years of depression."[4] And while a medical student

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[1] John Stuart Mill, *The Autobiography of John Stuart Mill* (New York: New American Library, 1964), p. 107.

[2] Herbert Spencer, *An Autobiography*, 2 vols. (New York: D. Appleton, 1904), I, 543.

[3] Francis Galton, *Memories of My Life* (London: Methuen, 1909), pp. 78-79.

[4] Edward Titchener, "Wilhelm Wundt," in *Wundt Studies*, ed. W. Bringmann (Toronto: Hogrefe, 1980; article originally published in 1921), p. 324.

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traveling in Germany — and plagued by professional doubts, metaphysical insecurities, and women — William James fell into a depressive abyss, trailing thoughts of suicide after him.

The historian of nineteenth-century thought usually notes these instances of mental collapse as decorative episodes in the biographies of men whose outward pursuits paled in contrast to the romantic exploits of many of their contemporaries. Little effort has gone to assessing the impact of private crises on the philosophical and especially the scientific ideas of these men,[5] and generally little return would be paid to the historian who tried. After all, these philosophers and scientists did not produce imaginative works fired in passion. Gerard Manley Hopkins's profound acedia and Franz Kafka's lingering illness and traumatic relations with his father rightly concern the literary historian, since these conditions help explain aspects of their poetry and prose. But the aforementioned were empiricist philosophers and tough-minded scientists; their emotional lives seem not to have altered the shape of their theories. Those occasional attempts to explain, for instance, even Darwin's hesitation in publishing the *Origin of Species* — in the opinion of some psychoanalysts the book symbolized the killing of the old Adam and Darwin's real father[6] — have not been embraced by historians of science. But the case is manifestly different for William James. To understand his psychological science, his epistemological, metaphysical, and moral ideas, James's emotional life must be considered. And perhaps there is a lesson here.

This essay, accordingly, will constitute a sustained argument against the proposition of one historian of James's thought, that "to provide a proper perspective for the study of James . . . attention must be diverted from his life, however interesting, to his published philosophy."[7] James himself, in his early article "Quelques considérations sur la méthode subjective" (1878), made subjective preference, even in the face of contrary objective evidence, reason to accept or reject a scientific hypothesis.[8] We are authorized, then, to recover James's subjective state

[5] A notable exception is Bruce Mazlish's *James and John Stuart Mill* (New York: Basic Books, 1975). This psychohistory convincingly shows ties between J. S. Mill's crisis and his conception of utilitarianism, though a fair amount of psychoanalytic speculation must be passed through to appreciate the connections.

[6] See, for instance, Rankin Good, "Life of the Shawl," *The Lancet* (9 January 1954), 106-107.

[7] William Earle, "William James," in *The Encyclopedia of Philosophy*, ed. Paul Edwards, 8 vols. (New York: Macmillan, 1967), IV, 241.

[8] William James, "Quelques considérations sur la méthode subjective," *Critique philosophique*, II (1878), 407-413.

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in an effort to explain his adoption and use of certain scientific ideas. Indeed, his suicidal despair and the metaphysical remedy he chose to stanch it help explain why he found Darwin's theory of evolution so attractive.

Most James scholars acknowledge a connection between his pragmatism — as well as perhaps his psychological functionalism — and evolutionary ideas.[9] Some scholars, though, regard the influence of evolutionary theory on James's science as negligible.[10] Both of those attitudes inhibit attempts at a deeper understanding of James's intellectual development. It was Darwin's theory that provided the essential structure and objective justification for James's scientific and philosophical conceptions about the nature of mind, the acquisition of knowledge, and the possibility of moral action. To comprehend fully James's achievement, then, demands that we follow the careful construction of his psychology against the framework of Darwinian theory. But we must view his use of that theory principally in light of his spiritual crisis.

James's Depressive Period, 1867-1878

Education and Stay in Germany

Against the wishes of his father Henry James, Sr., he studied painting, till he finally admitted that his talent was insufficient. He then entered

[9] See, for instance, John Wild, *The Radical Empiricism of William James* (New York: Doubleday Anchor, 1970), pp. 16-17; William Earle, "William James" (note 7 above), pp. 241-249; and Andrew Reck, "The Philosophical Psychology of William James," *Southern Journal of Philosophy*, IX (1971), 302. Philip Wiener, Bruce Kuklick, Marcus Ford, and William Woodward perceive but do not measure nearly the full force of evolutionary ideas on James's psychology. See Philip Wiener, *Evolution and the Founders of Pragmatism* (Cambridge: Harvard University Press, 1949), ch. 5; Bruce Kuklick, *The Rise of American Philosophy* (New Haven: Yale University Press, 1977), pp. 51-52, 160-161, 170-171; and Marcus Ford, *William James's Philosophy* (Amherst: University of Massachusetts Press, 1982), pp. 26-29. Don Browning, in his insightful *Pluralism and Personality: William James and Some Contemporary Cultures of Psychology* (Lewisburg, Pa.: Bucknell University Press, 1980), pp. 52-58, insists on the importance of Darwinian theory in the development of James's thought, as does William Woodward, in his "Introduction to William James's Essays in Psychology," in *The Works of William James*, ed. Frederick Burkhardt (Cambridge: Harvard University Press, forthcoming).

[10] Bruce Wilshire, in *William James and Phenomenology: A Study of "The Principles of Psychology"* (Bloomington: University of Indiana Press, 1968), pp. 50-51, even supposes that James rejected the "darwinizing" of human mind. Other scholars, by omission, suggest that Darwinian evolution had no strong influence on James's thought. So, while Ralph Barton Perry does occasionally refer to James's Darwinian interests in his masterful *The Thought and Character of William James*, 2 vols. (Boston: Little Brown, 1935), he fails to mention evolution or Darwin in his distillation of James's views, *In the Spirit of William James* (New Haven: Yale University Press, 1938).

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the Lawrence Scientific School at Harvard University to study chemistry, an endeavor the elder James hoped might enable the son to defend rationally and empirically the father's Swedenborgian religious beliefs. But William was only a fair chemist; he quickly perceived that a lack of both desire and mathematics recommended a switch to comparative anatomy, a choice congenial to the artist's interests, but also one with a more practical consequence — it opened the path to medical school. James enrolled in the Harvard Medical School in 1864, though not from any secure vision of himself in clinical practice. The following spring he left off studies to sail up the Amazon with a contingent of students led by Professor Louis Agassiz, the American Cuvier and fierce opponent of Darwinism. While in South America, James contracted a mild form of smallpox and a more serious case of depression. In very low spirits, he wrote his father that the zoologist's collecting and classifying "work was not in my path" and that his excursion "was so much a waste of life."[11] The depression passed as his physical health returned. Back in Boston in March 1866, he again resumed the medical curriculum; but in spring of the next year, he interrupted his studies and set out for Germany. He believed the travel necessary to preserve his health; it would also give him an opportunity to work up his German and perhaps to study some physiology. During the summer, while in Dresden and Bohemia, his health deteriorated; he suffered insomnia, digestive difficulty, headaches from reading, and serious back problems. Accompanying these physical distresses, a great pitch colored his moods. In November, he began attending physiology lectures at Berlin, with the intention of continuing the following summer with "Helmholtz and a man named Wundt at Heidelberg."[12] But that winter his ill health and lack of scientific preparation produced a deep frustration, which he poured out to his friend Tom Ward:

> . . . my habits of mind have been so bad that I feel as if the greater part of the last ten years had been worse than wasted, and now have so little surplus of physical vigor as to shrink from trying to retrieve them. Too late! Too late! If I had been *drilled* further in mathematics, physics, chemistry, logic, and the history of metaphysics . . .[13]

Two months later, in January 1868, James attempted to bolster Ward's slipping spirits with the confession of his own suicidal despair:

[11] *The Letters of William James*, ed. Henry James, 2nd ed., 2 vols. (Boston: Little, Brown, 1926) I, 63.

[12] *Ibid.*, p. 119.

[13] *Ibid.*

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I fancy you have always given me credit for less sympathy with you and understanding of your feelings than I really have had. All last winter, for instance, when I was on the continual verge of suicide, it used to amuse me to hear you chaff my animal contentment.[14]

During his eighteen months in Germany, James's spirits ebbed and flowed. One episode of melancholy gave off mists of a faint hypothesis that eventually would become a more firm biopsychological theory. This occurred while listening to the piano-playing of Katherine Havens, an American toward whom he felt a strong attraction. In his diary for 22 May 1868, he wrote:

Tonight while listening to Miss H's magic playing & the Dr. and the Italian Lady sing my feelings came to a sort of crisis. The intuition of something here in a measure absolute gave me such an unspeakable disgust for the dead drifting of my own life for some time past. I can revive the feeling perhaps hereafter by thinking of men of genius. It ought to have a practical effect on my own will — a horror of wasted life since life can be *such* — and Oh god! an end to the idle, idiotic sinking into *Vorstellung* disproportionate to the object. Every good experience ought to be interpreted in practice. Perhaps actually we cannot always trace the effect, but we won't lose if we try to drop all in wh. this is not possible. Keep [one word illegible] all the while — and work at present with a mystical belief in the reality interpreted somehow of humanity.[15]

Five days later, on 27 May, James again brooded on unrealized representations and unrequited love:

About "Vorstellungen disproportionate to the object" or in other words ideas disproportionate to any practical application — such for instance are emotions of a loving kind indulged in where one cannot expect to gain exclusive possession.[16]

James's experience with Miss Havens was repeated with many women whom he knew before finally marrying Alice Gibbens in 1878. In his letters,[17] he would sing the delights of a woman, but he could not bring himself to reduce his *Vorstellungen* to action. In the long passage just quoted from his diary, James resolved not to dwell on conceptions that he could not act upon. Later, he made this resolve a biopsychological principle. He came to argue that the function of cognition — its evolutionary purpose — was to produce action, to allow the will to be effective in the world. "Cognition, in short, is," as he explained in a later article, "incomplete until discharged in act."[18]

[14] *Ibid.*, I, 129.

[15] William James, Diary, p. 55, James Papers, Houghton Library, Harvard University.

[16] *Ibid.*, pp. 56-57.

[17] See, for instance, *Letters of William James*, I, 93-94, 113, 116; and Perry, *Thought and Character of William James*, I, 240.

[18] William James, "Rationality, Activity and Faith," *Princeton Review*, II (1882), 66.

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James's Mental Collapse

James returned from Germany in November 1868 and took up residence again in his father's house. In June of the next year he received his medical degree but harbored no intention of practicing medicine. He continued to be depressed. In December 1869, James wrote to Henry Bowditch, a friend from medical school, to excuse a lapse in correspondence: "I have been prey to such disgust for life during the last 3 months as to make letter writing almost an impossibility."[19] Shortly thereafter, on 1 February 1870, he seems to have completely broken down and for a time required treatment in the McLean Asylum near Boston.[20] He suffered the breakdown, as characteristic of the James family, with pen in hand.

> Feb. 1. A great dorsal collapse about the 10th or 12 of last month has lasted with slight interruption until now, carrying with it a moral one. Today, I about touched bottom, and perceived plainly that I must face the choice with open eyes: shall I frankly throw the moral business overboard, as one unsuited to my innate aptitude, or shall I follow it, and it alone, making everything else merely stuff for it? — I will give the latter alternative a fair trial. Who knows but the moral interest may become developed. Hitherto I have given it no real trial, and have deceived myself about my relation to it, using it in reality only to patch out the gaps which fate left in my other kinds of activity, and confusing everything together.[21]

By moral interest James appears to have meant exercising the will in pursuit of definite goals. In his diary, he associates it with "attaining certain difficult but salutary habits."[22]

James's spiritual crisis had three major components — professional, interpersonal, and psycho-metaphysical.[23] Its gradual remission during

[19] William James to Henry Bowditch, 29 December 1869, James Papers, Houghton Library, Harvard University.

[20] James Anderson followed up certain rumors about James's stay at the McLean Asylum to discover that the hospital refused to reveal any details about his case. See James Anderson, "William James's Depressive Period (1867-1872) and the Origins of his Creativity: A Psychobiographical Study" (Ph.D. diss., The University of Chicago, 1979). I also contacted McLean and met with a similar response. Afterward, however, I spoke with someone who had worked in the hospital archives in an official capacity, and that person confirmed James's stay as a patient there.

[21] William James, Diary, entry for 1 February 1870.

[22] *Ibid.*

[23] Cushing Strout argues that James's professional insecurities betrayed a more fundamental crisis of identity, which led to his deep despondency in these early years. See Cushing Strout, "William James and the Twice-Born Sick Soul," *Daedalus*, XCVII (1968), 1062-1082. Gay Allen, in his biography of James suggests that James's emotional distress resulted primarily from taking too seriously, as the Victorians were apt, the question of

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the decade of the 1870s required specific but related therapies. James had despaired over his professional prospects, feeling that his education left him unprepared for serious scientific work and that he had wasted his years in desultory study. In 1872, however, President Eliot of Harvard inquired of his neighbor whether he would be interested in filling a vacancy in the physiology department. Thus began James's teaching career at Harvard, a career that carried him from an appointment in physiology to one in psychology and finally to a professorship in philosophy, from which he retired in 1907.

During his early adulthood, James appears not to have been able to bring himself to translate his intentions concerning women into action. His diary portrays the morbid condition to which this brought him. But in 1876, he was introduced to Alice Howe Gibbens, who pulled him back from his frustrations and bachelorhood. A day after the encounter, he wrote to his brother Wilky that he had met "the future Mrs. W. J."[24] James believed that Alice resurrected his interred soul. He wrote to her in June of 1877:

> Last fall and last winter what pangs of joy it sometimes gave me to let you go! to feel that acquiescing in your unstained, unharnessed freedom I was also asserting my deepest self, and cooperating with the whole generous life of things![25]

Alice supplied James that emotional elixir which sparked his sense of self-possibility and infused him with a zest for life. Indeed, Schwehn has forcefully argued that Alice redeemed James, for in her he found a living embodiment of that religion which he had earlier rejected when his father preached it in dreamy Swedenborgian periods.[26]

The third dimension of James's spiritual crisis was psycho-metaphysical. During the period of the 1860s to the early 1870s, James became convinced that advanced science left no room for a free and independent mind. In the early 1860s, he enthusiastically embraced Herbert Spencer's scientific philosophy,[27] which proclaimed an eter-

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free will! See Gay Allen, *William James* (New York: Viking Compass, 1969), pp. 164-170. James Anderson's thesis, in his "William James's Depressive Period," is that any extrinsic causes of James's illness can only be understood as fragmenting an already fragile self-system.

[24] *Letters of William James*, I, 192.

[25] William James to Alice Gibbens, June 1877, James Papers, Houghton Library, Harvard University.

[26] Mark Schwehn, "Making the World: William James and the Life of the Mind," HARVARD LIBRARY BULLETIN, XXX (1982).

[27] William James, "Herbert Spencer," *Atlantic Monthly*, XCIV (1904), 99-108.

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nally fixed evolution of matter and mind out of primal stuff. And even as Spencerian doctrine began to evaporate under James's scrutiny, its accompanying determinism yet crusted over his convictions. The attitude that modern science revealed an inexorability that even mind could not escape was also urged on James by his study of German physiology, especially that of Du Bois-Reymond, whose lectures he attended in Berlin. The skeptical positivism of his friends Chauncey Wright and Oliver Wendell Holmes undoubtedly also exerted a strong force. The precise origins of James's belief in determinism may be a bit uncertain, but his own conviction was not, as he recounted to Tom Ward in 1869:

> I'm swamped in an empirical philosophy. I feel that we are nature through and through, that we are wholly conditioned, that not a wiggle of our will happens save as the result of physical laws; and yet, notwithstanding, we are *en rapport* with reason. — How to conceive it? Who knows?[28]

James's own lack of purpose, his inability to reduce *Vorstellungen* into action, his "palsied" will (as he described it in his diary)[29] could all be understood and even justified if mind were a puppet to nature's laws. Then "the task," as he concluded in late 1869, would be "to act without hope."[30] But the task was beyond him, and in February of the following year he "about touched bottom."[31]

Renouvier and the Subjective Method

A few months after sinking into the depths, James chanced to read a book by the French Kantian Charles Renouvier, his *Traité de psychologie rationnelle*.[32] It gave James the first great lift out of despondency. On 30 April 1870, he recorded the decisive experience in his diary:

> I think that yesterday was a crisis in my life. I finished the first part of Renouvier's 2nd Essay, and saw no reason why his definition of free will — the sustaining of a thought *because I choose to* when I might have other thoughts — need be the definition of an illusion. At any rate I will assume for the present — until next year — that it is no illusion. My first act of free will shall be to believe in free will.

[28] *Letters of William James*, I, 152-153.

[29] William James, Diary, entry prior to 21 December 1869.

[30] *Ibid.*

[31] *Ibid.*, entry for 1 February 1870.

[32] Charles Renouvier, *Essais de critique générale, Deuxième essai: Traité de psychologie rationnelle*, 2 vols. (Paris: Librarie Armand Colin, 1912; a reprint of the 2nd ed. of 1875). James read the original edition of 1864 during his emotional crisis. In his later essay on "Bain and Renouvier" (*The Nation*, XXII [1876], 367-369), he used the second edition of the *Psychologie rationnelle*.

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For the remainder of the year, I will abstain from the mere speculation & contemplative *Grübelei* in which my nature takes most delight, and voluntarily cultivate the feeling of moral freedom, by reading books favorable to it, as well as by acting. . . . Hitherto, when I have felt like taking a free initiative, like daring to act originally, without carefully waiting for contemplation of the external world to determine all for me, suicide seemed the most manly form to put my daring into; Now, I will go a step further with my will, not only act with it, but believe as well; believe in my individual reality and creative power. My belief to be sure can't be optimistic — but I will posit life (the real, the good) in the self governing *resistance* of the ego to the world.[33]

In the chapters of the *Traité* that captured James's attention (chapters 13 and 14), Renouvier analyzed two opposing doctrines of will, that of determinism and that of the liberty of indifference. He found both unacceptable. Determinism implied that authentic moral behavior, which assumed the agent could have done otherwise, was a delusion. Determinism thus undermined our primitive experience that men did make valid moral judgments. Although Renouvier recognized that the determinist would regard this as a weak objection, one based on an illusion, he thought that the determinist could not so easily dismiss two further consequences of his doctrine. First, if all men were determined, then, likewise, so would be their philosophical assertions: each of their decisions, including the acceptance of determinism, had to result from coercive causal processes. In practice, then, truth and falsity would have to merge in a system that permitted no judgments freely executed for good reasons. Moreover, the determinist had to face the antinomy of his position, that an actually infinite series of causes existed, a series requiring a beginning but having none. According to Renouvier, those advocating the liberty of indifference stood no more securely. They endowed man with a pure will, indifferent to and uninfluenced by motives, intellectual convictions, or passions. Their theory of freedom, however, would actually deny that men — those bundles of hopes, fears, and fluctuating beliefs — could be assigned responsibility for their acts. Freedom in this sense became identical with chance.

Renouvier's own theory accorded man a will enmeshed in the thicket of judgment and motives, a will that did not simply react to pressing needs, passions, and desires, but one that antecedently reflected on plans that led to alternative motives for behavior. Will actively selected interests as well as responded to them.[34] In this conception, liberty

[33] William James, Diary, entry for 30 April 1870.
[34] Renouvier, *Psychologie rationnelle*, I, 318-319.

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would be "that character of human acts, reflective and voluntary, in which consciousness joins in close union the motive and the drive identified with it, and affirms that other acts different from the first are possible at the same moment."[35] From this footing, James launched his own theory of human liberty. He would come to define the free agent as one who chose what interests to pursue. Much in the world potentially beckons the individual, but he must decide which interests to cultivate, which to reject. He actively examines plans of action in order to evoke new motives within himself. And when he deliberately acts, he does so, as James expressed it in his diary,[36] with a belief in freedom, with the conviction that he could have done otherwise. In this respect, James came to regard mind neither as a merely passive recorder of events, nor simply as a calculator of efficient means; mind was preeminently a "fighter for ends."[37]

But some might still insist on the doctrine of causal necessity, claiming, with John Stuart Mill, that induction proved it. To them Renouvier responded that the inductive method actually assumed causal regularity in order to demonstrate it: induction would fail were nature not constant and our perceptions not stable and reliable.[38] But if an ultimate postulation of a first principle must occur without demonstration — as it must to avoid circular reasoning — then why not the principle that forms an inevitable part of our conception of human acts, one that makes sense of the epistemology of truth and error and that makes moral behavior meaningful — the principle of liberty? This principle, in Renouvier's Kantian consideration, had the unyielding support of our practical nature: men instinctively predicated freedom of their own acts and the behavior of others. Renouvier believed this thoroughly human attitude brought a moral certitude about freedom. And moral certitude, he argued,[39] was the only kind available to man. For anyone who pretended his certitude was logical, based on rational principles, could always be asked whether he was certain of his certitude. Since there was no fixed point (*aliquid inconcussum*) which certified itself logically, the only recourse would be to some more ultimate guarantee of certitude. But in that direction lay the devouring path of infinite regress. We must

[35] *Ibid.*, p. 317.

[36] William James, Diary, entry for 30 April 1870; see quotation above.

[37] William James, *The Principles of Psychology*, 2 vols. (New York: Henry Holt, 1890), I, 141.

[38] Renouvier, *Psychologie rationnelle*, I, 321-322.

[39] *Ibid.*, p. 328.

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begin with moral certitude, which for Renouvier was a certitude about human freedom.[40]

James adopted the subjective method of Renouvier in his first major essays, published in the late 1870s. He urged that we were right to confirm a theory which met with our natural preferences, because all ultimate foundations for philosophical or scientific theories rested, not on ineluctable reason — since first principles could not be demonstrated — but on belief and conviction. If our taste ran to determinism, we had to recognize that such a choice nullified significant aspects of apparently valid experience. But if we decided for freedom, then we at least insured that moral action would not wither, but could be vigorously tested. In a review of Bain and Renouvier for the *Nation* in 1876, James wrote:

> If this be a moral world, there are cases in which any indecision about its being so must be death to the soul. Now, if our choice is predetermined, there is an end of the matter; whether predetermined to the truth of fatality or the delusion of liberty, is all one for us. But if our choice is truly free, then the only possible way of getting at that truth is by the exercise of the freedom which it implies.[41]

The philosophical cure Renouvier offered seemed to have had a strong impact on James's emotional life. His father, noticing the difference in him, asked about it, and then relayed the news to his son Henry in March 1873:

> He came in here the other afternoon when I was sitting alone, and after walking the floor in an animated way for a moment, exclaimed "Dear me! What a difference there is between me now and me last spring this time: then so hypochondriacal" (he used that word, though perhaps in substantive form) "and now feeling my mind so cleared up and restored to sanity. It is the difference between life and death." He had a great effusion. I was afraid of interfering with it, or possibly checking it, but I ventured to ask what specially in his opinion had promoted the change. He said several things: the reading of Renouvier (specially his vindication of the freedom of the will) and Wordsworth, whom he has been feeding upon now for a good while; but especially his having given up the notion that all mental disorder required to have a physical basis. This had become perfectly untrue to him. He saw that the mind did act irrespectively of material coercion, and could be dealt with therefore at first-hand, and this was health to his bones.[42]

The elder James's letter suggests another important aspect of the cure Renouvier wrought, though not, I think, without the help of Darwin. The doctrine of freedom meant that mind was not identical with brain,

[40] *Ibid.*, II, 97-98.
[41] William James, "Bain and Renouvier," p. 369.
[42] Quoted by Perry, *Thought and Character of William James*, I, 339-340.

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nor its slave. Hence, any mental or emotional disturbances, any signs of insanity, need not be attributed to an incurable organic disorder. Direct spiritual therapy could be effective. And James administered that to himself with strong doses of Renouvier, plus, it would seem, with an anodyne that J. S. Mill also used, the poetry of Wordsworth.

James's protracted spiritual crisis climaxed in the early 1870s, and probably really only subsided after his marriage, a time during which his first important scientific and philosophic papers appeared. The emotional consolation of a wife and the security of a teaching position helped considerably. But the remedy of Renouvier, taken alone, was not potent enough for a lasting cure. The French Kantian demonstrated that the determinist position was not more logically persuasive than the libertarian; yet he failed to counter the full strength of Victorian science, which seemed to support determinism. James required objective evidence to compound with his subjective preference for freedom. This he found, oddly enough, in the ideas of one usually credited with introducing a pervasive mechanism in biology — Charles Darwin. But to understand exactly what Darwin offered and how James adapted it, we must first consider his intellectual relation to that other great nineteenth-century evolutionist, Herbert Spencer.

The Psychological and Moral Uses of Darwinism

Spencerian Evolutionism

Spencer, like Darwin, believed that the variety of extant species descended from simpler, more primitive forms over long periods of time. Also like Darwin, he initially formulated his theory with ideas drawn from Lamarck, especially the French zoologist's notion that acquired habit could produce heritable adaptations in animals and men. Darwin, however, after he had worked out the principle of natural selection in summer and early fall of 1838, gradually down played the role of Lamarckian mechanisms, though without denying their existence.[43] Spencer, on the other hand, continued to see an essentially Lamarckian device as the chief engine for species alteration: habits acquired in response to environmentally produced needs, he believed, would eventually transform simpler organisms into more complex ones by molding their structures against external environmental relations.

[43] See Robert Richards, "Influence of Sensationalist Tradition on Early Theories of the Evolution of Behavior," *Journal of the History of Ideas*, XL (1979), 85-105.

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Spencer offered the simple organic adaptation of the cuttle-fish's sucker as illustrative:

> The established relation between the tactual and muscular changes in the sucker and its ganglion is parallel to the uniform relation between resistance and extension in its environment — the inner cohesion of psychical states is as persistent as is the outer relation between attributes. And if we remember that in the actions of the cuttle-fish this inner relation is perpetually being repeated in response to the outer relation, we see how the organization of its species answers to the infinitude of experiences received by the species.[44]

According to Spencer's theory, when an organism's equilibration is upset by a change in the environment, the creature naturally seeks to reestablish balance by altering its behavior. Such alterations themselves disrupt anatomical relations, which in turn move toward a new equilibration at a higher level of complexity. All of these individually acquired adaptations, Spencer supposed, would be inherited by subsequent generations of a species.[45]

Spencer originally deployed his evolutionary ideas in *Social Statics*, a work in social philosophy published in 1851, some eight years before Darwin's *Origin of Species*. In *First Principles*, appearing in six parts between 1860 and 1862, Spencer elevated the evolutionary perspective to a cosmic philosophy of development. But it was really in his *Principles of Psychology* (1855) that he first worked out in detail his particular version of evolution. Spencer confided to his father that he believed his *Principles of Psychology* would "ultimately stand beside Newton's *Principia*."[46]

In the *Principles of Psychology*, Spencer proposed that the "law of growth of intelligence," a special formulation of the principle of adaptive equilibration, directed the evolution of consciousness in the animal kingdom.[47]

[44] Herbert Spencer, *The Principles of Psychology*, 3rd ed., 2 vols. (New York: D. Appleton, 1886), I, 428. The third edition does not differ substantially from the second, which James read.

[45] After he read Darwin's *Origin of Species*, Spencer recognized the power of the principle of natural selection. In his *Principles of Biology* (1864-1867), he distinguished two mechanisms of organic evolution, direct and indirect equilibration. Direct equilibration was the readjustment of anatomical structures through functionally acquired and heritable modifications. Direct equilibration governed the evolution of more complex co-adaptations. Indirect equilibration was essentially Darwin's principle of natural selection, which, according to Spencer, could only account for acquisition of relatively simple and non-mutually adaptive traits. The great motor of species modification in more complex organisms had, therefore, to be direct equilibration. See Herbert Spencer, *The Principles of Biology*, 2 vols. (New York: D. Appleton, 1884; reprint of 1st ed. of 1864-1867), pt. 2, ch. 5, and pt. 3, chs. 11 and 12.

[46] David Duncan, *Life and Letters of Herbert Spencer*, 2 vols. (New York, 1908), I, 98.

[47] Spencer, *Principles of Psychology*, I, 407-426.

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The law operated initially to establish reflex connections between perceptions and adaptive responses in lower organisms. The first glimmerings of consciousness, in Spencer's view, mirrored these primitive nervous linkages. More complex neural organization carried in tandem correspondingly higher states of consciousness — those associated with instinct, memory, and reason. On this interpretation, conscious reasoning became merely the *feeling* of deliberation over different courses of action; the neural realities behind the sentiment of reason were competing nascent motor reactions to a complex environment.

> As the groups of antagonistic tendencies aroused will scarcely ever be exactly balanced, the strongest group will at length pass into action; and as this sequence will usually be the one that has recurred oftenest in experience, the action will, on the average of cases, be the one best adapted to the circumstances. But an action thus produced is nothing else than a rational action.[48]

Spencer pointed to advances from rudimentary forms of rational behavior (e.g., first counting, then algebra, etc.) as evidence that rationality itself evolved out of a primitive condition.[49]

Spencer's theory thus declared that the chief mechanism of evolution was the internalizing of external relations and that this mechanism progressively drove anatomical forms and conjoint mental structures from more generalized adaptive states to more definite correspondences with the environment, from simpler, more homogeneous patterns to more complex and heterogeneous configurations. Or, as James liked to rephrase Spencer's law of evolution for his students: "Evolution is a change from a no-howish untalkaboutable all-alikeness to a somehowish and in general talkaboutable not-all-alikeness by continuous stickto-getherations and somethingelseifications."[50]

Darwin Pitted against Spencer

James unfailingly yielded to the allure of Spencer's philosophical science, though the temper of his considerations changed dramatically from his adolescence to early manhood. He recalled reading Spencer's *First Principles* "as a youth when it was still appearing in numbers," which would have been when he was between eighteen and twenty years old. At that time, as he later confessed, he was "carried away with enthusiasm by the intellectual perspectives which it seemed to

[48] *Ibid.*, p. 455.
[49] *Ibid.*, p. 462.
[50] Quoted by Perry, *Thought and Character of William James*, I, 482.

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open."[51] His ardor for Spencer's evolutionism was, however, dashed in the cooler reflections of his friend Charles Sanders Peirce, who surgically exposed what he considered to be Spencer's vagueness, vacuity, and pretension. Thereafter, James never lost a fascination for — almost an intellectually sadistic pleasure in — taking a hand in dismembering Spencer's speculations at every opportunity.

James's formal introduction to Darwinian theory probably came in the comparative anatomy and physiology courses of Professor Jeffries Wyman, a defender of evolution against Agassiz's Cuverian criticisms. For two academic years (1863-1865), James studied with Wyman, whom he came to regard as a paragon of "quiet wisdom."[52] His mentor's dispassionate discussions, though, must have seemed thin beer in comparison to the wranglings of his friends Chauncey Wright and Charles Sanders Peirce over the philosophical implications of Darwinism. For Wright, the *Origin of Species* testified to the scientific power of British empiricism; for the Kantian Peirce, it provoked a search after the logical flaws in the theory.[53] James reflected the attitudes of both friends in his first printed pieces, two reviews written in 1868 while in Germany of Darwin's *Variation of Animals and Plants Under Domestication*.[54] James commended Darwin's "painstaking and conscientious industry in the accumulation of fact," but recognized that the British naturalist's interpretation "has just so much of the hypothetical element in it, in all the cases, that a sceptic who should refuse to accept it would have no trouble in presenting a legal and logical justification for his conduct." Yet James thought the value of Darwin's hypothesis could not really be settled by logic, but by "the learned tact of experts, which alone is able to weigh delicate facts against each other, and to decide how many possibilities make a probability, and how many small probabilities make an almost certainty."[55]

James's still fluid ideas about evolutionary theory seeped into the courses he offered as a lecturer in the Anatomy Department at Harvard. In January 1873, his professional career was inaugurated with "Natural

[51] William James, "Herbert Spencer," p. 104.

[52] *Letters of William James*, I, 48.

[53] Wiener discusses Wright's and Peirce's views of Darwinian theory in *Evolution and the Founders of Pragmatism*, pp. 31-96.

[54] James's reviews of Darwin's *Variation of Animals and Plants Under Domestication* appeared in *The North American Review*, CVII (1868), 362-368, and in *Atlantic Monthly*, XXII (1868), 122-124. Each review emphasized different aspects of Darwin's work.

[55] *Ibid.*

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History 3: Comparative Anatomy and Physiology," Wyman's old course and one James taught until he went over to the Philosophy Department in 1880. A student who took the class remembered that James, unable to keep to the more pedestrian aspects of his subject, "launched out, on almost any occasion, into a lecture which took shape gradually in a course on evolution."[56] His enthusiasm seems to have breached standards of scientific restraint (at least at Harvard), since another student complained that in the course "Darwinism is to be treated metaphysically, that is to say . . . precisely as Darwin and his followers say it should not be treated."[57] In 1876, James legitimated his concern with the deeper aspects of evolutionary theory, particularly its implications for mind and behavior, by introducing a new course into the Anatomy Department. This was "Natural History 2: Physiological Psychology," for which Spencer's *Principles of Psychology* served as the textbook. James's surviving lecture notes and the marginal annotations in his copy of Spencer indicate the scope of his objection to Spencer and his growing reliance on Darwin. Most of his criticisms of Spencer focused on the philosopher's view of the mind as passive and fixed by natural forces. It was this sort of conception that had plagued James during his spiritual crisis and that now could be scientifically assuaged only by a very different sort of evolutionary hypothesis, the Darwinian.

In a class lecture entitled "Spencer's Law of Intelligence,"[58] James set out to refashion Spencer's idea that mind was passively molded against the external environment: "There might be in the mind," he cautioned, "principles quite as natural as those of the outer world which nevertheless alter the shape taken by the outer facts in thought."[59] One need not, therefore, be forced to choose between Spencer and the catechism. There was another way, a decidedly scientific way, of construing the relationship between mind and the environment — the Darwinian way.

James contended that Spencer "repeats the defects of Darwin's predecessors in biology."[60] That is, the pre-Darwinians supposed anatomical adaptations to be direct responses to environmental relations, whereas

[56] "A member of the Class of 1878," *Harvard Graduates' Magazine*, XXXIX (1920), 324, quoted by Perry, *Thought and Character of William James I*, 469.

[57] *Ibid.*, p. 476.

[58] William James, "Spencer's Law of Intelligence," James Papers, 4493, Houghton Library, Harvard University.

[59] *Ibid.*, MS pp. 2-3.

[60] *Ibid.*, MS p. 5.

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Darwin showed them to have two different sources: spontaneous variations, which do not mirror their causes; and a selection by external circumstances of fit variations, which if so retained would indicate a kind of correspondence with the environment. The main point of a Darwinian analysis, James insisted, was that

> the variation or inner relation does not "correspond" with its *cause* but with some environing relation entirely removed from its cause. This outward relation has a perfectly definite function: to take the variation once made and preserve or destroy it.[61]

In applying the Darwinian perspective to the mental realm, James did not deny that immediate experience often shapes ideas. He simply could not swallow Spencer whole. He argued that categories of thought acquired over our long evolutionary history and the novel ideas that are produced by men of genius — and ourselves on occasion — were not due to direct adaptations, to immediate environmental coercion. He proposed, instead, that new modes of thought and conceptual innovations sprang up in the mind as spontaneous mental variations, and that we would come to accept them as representations of the environment only if they continued to meet the test of survival. James, of course, recognized that natural-selection theory was usually interpreted as deterministic. Darwin himself had tried to specify the causes of "spontaneous" variations in the *Variation of Animals and Plants*, though, as James suggested in his reviews, not without appeal to unconfirmed hypotheses. In the lecture to his class, James intimated that our inability to give adequate scientific account of these causes might possibly be a result of mental variations erupting freely. At least the strength of natural-selection theory did not depend on specifying the causes of variation.

Darwin's conception of the principles of evolutionary change thus appeared to James not only theoretically powerful, but scientifically cautious as well; for Darwin segregated the mechanism of selection from questions about the causes of variation and discussed these latter in the appropriate language of hypothesis. By contrast, Spencer characteristically over-reached himself. In the *Principles of Psychology*, he presumptively declared that psychological science had demonstrated that, through inherited habit and acquired associations, the motives of individuals were fully determined. In the margins of his copy of Spencer's text, James disciplined the errant psychologist:

[61] *Ibid.*, MS p. 8.

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Nonsense yourself! Psychology don't pretend to be a quantitative science. Free will is solely a question of /the/ *quantity* /of/ in motives. *The* motives are as to their possible *kinds* always determined. Out of several possible liberty chooses one. But psychology is the science of the possibles, of the *classes* of representations. To claim more wd be to make it knowledge not of general laws but of all the particular details of all future history.[62]

Spencerean psychology erred, not in supposing that experience fixed the range of possible motives operating on the will, but in presuming that introspection could discriminate the fine weightings which tipped the balance in favor of one sort of motive over another. The Darwinian approach allowed James to elaborate a psychology that, while recognizing the role of ancestral experience (conveyed by natural selection) in establishing categories of motivational response in the individual, also permitted mental variations spontaneously to invest interest in one motive out of the several entertained. Natural selection, for James, thus worked on two levels: the phylogenetic, in fitting the species out with modes of response to different environments; and the ontogenetic, in spontaneously electing one motive over the others available. This two-level analysis of willful behavior is only adumbrated in James's class notes, but becomes more distinct in his later writings. At this point (in the late 1870s), it is clear, however, that his psychology sanctioned general laws, but not a playground for a Laplacean demon of will.[63]

In his class lecture, James brought his Darwinian scheme to bear on the historical propositions of Spencer's American disciple Grant Allen. Allen had undertaken the Laplacean task. In a series of articles in 1878, he attempted to formulate a deductive history of nations.[64] He argued that "every national character must necessarily be due to the special physical characteristics of the country in which it is developed."[65] The external environment must alter the hereditary traits of people and, during a long evolutionary incubation, mold the distinctive personalities

[62] The annotation is on p. 503 of Spencer's *Principles of Psychology*, vol. 1. James probably penned this in preparing for his "Spencer elective," begun in 1876. The words between slashes were crossed out by James.

[63] Darwin himself would not have approved use of his theory to support the idea of free-will. He was fully persuaded that human mental behavior was completely determined. For a discussion of his views on the question, see Robert Richards, "Darwin and the Biologizing of Moral Behavior," in *The Problematic Science: Psychology in Nineteenth-Century Thought*, eds. W. Woodward and M. Ash (New York: Praeger, 1982), pp. 43-64.

[64] See Grant Allen, "Hellas and Civilization," *Popular Science Monthly — Supplement* XIII-XX (1878), 398-406; and "Nation-Making," *Popular Science Monthly — Supplement* XIII-XX (1878), 121-127.

[65] *Ibid.*, p. 121.

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that national groups exhibit. Allen's historical determinism meant that, as he expressly avowed, "there is no caprice, no spontaneous impulse in human endeavors. Even taste and inclinations *must* themselves be the result of surrounding causes."[66] This was a hard saying for James, who virtually with every stroke of his pen proclaimed and displayed the spontaneous, the unexpected varieties of active thought.

Against this abstract and, for James, morally distasteful evolutionary tale, he urged what he believed, in an Emersonian vein, to be the evidence of history, that social evolution was due to the work of great thinkers and magnetic leaders in a society. "We can note with our eyes," James lectured to his class, "the way in which the great man works and to abandon this solid foundation for the emptyness of an unknown ultimate cause is in the highest degree unscientific."[67] Here again, the Darwinian idea served. The great man could be understood as a spontaneous variation in the social organism. Unknown physiological causes conspire to fashion his brain; the dice roll and up comes a Napoleon, a Bismarck, or a Goethe. If the social and physical environments are receptive, if they select and preserve the great man and his ideas, then society will become adapted to a new mode of existence. If the genius and his schemes are out of time, if the environment proves hostile, well, undoubtedly there have passed many a rejected and inglorious Newton.

When in his lecture and article based on it ("Great Men, Great Thoughts, and the Environment"[68]), James pitted his version of Darwinian social evolutionism against Spencerian historical determinism, he filled a need to reconcile two ideals of human development that warred in his breast. The one stemmed from his father, the other from an intimate of the James dining table, Ralph Waldo Emerson. Through the mists of the elder James's several religious writings (W. D. Howells said of *The Secret of Swedenborg* that James kept it), divine creation was depicted as continuous and progressive. First God becomes other in the guise of the natural man, whose self-consciousness atheistically rejects the idea that it has been created, and then He returns to Himself by overcoming individual selfishness in the redemptive unfolding of an altruistic society. Henry Sr.'s spiritual evolutionism bore resemblance to the materialistic evolutionism of the Spencerians; for, as his son remarked, "according to both doctrines, man's mortality and religion,

[66] *Ibid.*, p. 126.

[67] William James, "Spencer's Law of Intelligence" (note 58 above), MS p. 12.

[68] William James, "Great Men, Great Thoughts, and the Environment," *Atlantic Monthly*, XLVI (1880), 441-459.

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his consciousness of self and his moral conscience, are natural products like everything else we see."[69] Moreover, both views submerged individual self in an inevitable process. William strenuously objected to the absolutism and determinism of these conceptions. He seems rather to have thought Emerson touched the right cord in praising "the sovereignty of the living individual."[70] Emerson and James (whose article "Great Men" resonates with the Concord sage's "Uses of Great Men") both perceived men of genius shaping their own destinies and redirecting the course of their societies. James's Darwinian scheme thus allowed him to preserve his father's idea of the spiritual development of society, but to regard this evolution as the chancy affair of morally independent selves.

The Darwinian Argument for the Independence of the Mind

For James, 1878 was an *annus mirabilis*. In June he signed a contract with Henry Holt to write a textbook in psychology — though he delivered the manuscript of his two-volume *Principles of Psychology* in 1890, ten years over schedule. In July, after a frustrating year of courtship, with tears, departures, and nobility in suffocating abundance, he married Alice Gibbens. In autumn, he began the second year of his "Spencer elective," his course in physiological psychology. And during the year, he saw published his first three major articles, while working at high speed on several others. In February, he received an invitation from D. C. Gilman, president of the recently founded Johns Hopkins University, to give a series of lectures. Gilman, who was very impressed with the performance, hoped to lure James into the psychology department at Hopkins; the invitation succeeded in getting James an advance in rank to Assistant Professor at Harvard. In his ten lectures, which the financial worries of marriage caused him to repeat at Boston's Lowell Institute in autumn, he explored the relations between mind and brain. It was in these lectures that he elaborated an extremely powerful evolutionary argument, which would objectively and firmly ground his subjective desire to postulate an active and independent mind.

[69] William James, Introduction to *The Literary Remains of the Late Henry James* (Boston: Osgood, 1885), p. 20.

[70] William James, "Address at the Emerson Centenary in Concord (1903)," in F. O. Mathiessen, *The James Family: A Group Biography* (New York: Vintage, 1980; reprint of 1947 edition), p. 457.

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In the first five of his Hopkins lectures,[71] James sought to demonstrate his mastery of brain physiology. He recounted the latest experiments from Germany and wove them into a coherent pattern. In the sixth lecture, he finally confronted the question of the relationship between mind and brain, taking as his point of departure essays by W. K. Clifford and T. H. Huxley. Both British scientists advanced an extreme form of the passive view of mind — epiphenomenalism.[72] The brain, they claimed, received stimulation from the environment and issued motor acts as a result; the engine of the central nervous system simply transformed one kind of energy into another, without consciousness playing any mediating role at all. Rather, conscious mind hovered over brain activity like mists of steam coughed up from the dynamo actually doing the work. In his subsequent lectures, James indicted this materialistic theory with an argument as powerful as it was elegant.

James sketched the argument in his lectures,[73] but rendered it more explicitly in the article "Are We Automata?"[74] Its full and compelling form is in *The Principles of Psychology*.[75] The argument has an *a priori* part and an *a posteriori* part. The former can be reconstructed by the following sorites: Consciousness is a manifest trait of higher organisms, most perspicuously of man; like all such traits it must have evolved; yet it could have evolved only if it were naturally selected; but if naturally selected, it must have a use; and if it has a use, then it cannot be causally inert. Mind, therefore, must be more than an excretion of brain; it must (at least in some respects) be an independently effective process, which is able to control some central nervous system responses. Here then, as James put it in his lecture, was "objective evidence" for our "aesthetic demands."

In the remaining lectures, and more fully in his article and in the *Principles*, James laid out the second part of his argument, the empirical evidence for the actual effectiveness of consciousness in the natural economy. The first sort of evidence came from his analysis of cerebral physiology. Animals higher in the evolutionary scale have hemispheres

[71] Ten lectures, untitled, James Papers, 4397 and 4469, Houghton Library, Harvard University. Hereafter referred to as "Hopkins Lectures."

[72] See Thomas H. Huxley, "On the Hypothesis that Animals Are Automata and Its History," *Fortnightly Review*, XXII (1874), 555-589; and William K. Clifford, "Body and Mind," *Fortnightly Review*, XXII (1874), 714-736.

[73] William James, "Hopkins Lectures," MS pp. 56-57.

[74] William James, "Are We Automata?" *Mind*, IV (1879), 3-4.

[75] William James, *Principles of Psychology*, I, 138.

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adapted for response to minute features of their complex environments. The delicately balanced cortex of these animals has, in James's terms, a "hair-trigger"; the slightest jar or accident could set it firing erratically. Its organization makes it "happy-go-lucky," "hit-or-miss." "Caprice is its law," he claimed. Yet,

> if consciousness can load the dice, can exert a constant pressure in the right direction, can feel what nerve processes are leading to the goal, can reinforce & strengthen these & at the same time inhibit those which threaten to lead astray, why, consciousness will be of invaluable service.[76]

Consciousness, in short, could serve to stabilize the machinery of the brain.

Consciousness had also a related and, in James's judgment, its most important function. It established goals and select interests. Man and higher organisms clearly reveal purpose in their behavior; and they become fascinated by certain interests — from seeking food to seeking beauty — to the exclusion of others. This cannot result from a passive accommodation to the occurrent environment, since goals and ideals are precisely those things beckoning from the future, and interests often transcend the commonplace and the present-time. In James's view, goals, ideals, and interests can only be understood as spontaneous mental variations that, in the life of higher creatures, have been selected to steer them through their natural and social terrain. "Consciousness," in James's pugnacious metaphor, "is a fighter for ends."[77]

In his lectures, James itemized other instances of the potential effectiveness of consciousness, all ultimately based on its presumed capacity for selecting interests and focusing attention. So, out of the "swarming continuum, devoid of distinction or emphasis" that nature presents to experience, consciousness might, by attending to this motion and ignoring that, carve out a coherent world of related objects. Exercising this same sort of selective ability, consciousness might also facilitate some nerve processes and inhibit others, thus allowing a person to act freely and with moral responsibility. James also mentioned three other kinds of evidence for the effectiveness of consciousness that have an appeal independent of his particular psychological assumptions.

First, if animals consciously intended to preserve themselves and used an evolved reasoning power to do so, then the time required for evolution might be shortened. This possibility, James calculated, would mitigate

[76] William James, "Hopkins Lectures," MS pp. 60-61.
[77] William James, *Principles of Psychology*, I, 141.

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the (then) potent objection that geologic time was insufficient for evolution to have occurred.[78] Second, the empirical connection between subjective feelings of pain and objective injury on the one hand, and between feelings of pleasure and life-enhancing activities on the other, could only be explained if evolution had rendered subjective states effective in adapting animals to their environments. Finally, dramatic instances of brain-damaged people slowly recovering intellectual functioning seemed to bespeak an autonomous agent regaining control over its instrument — for machines cannot repair themselves.[79]

James thus buttressed his *a priori* argument with weighty empirical evidence and reached the unavoidable conclusion that mind must exist, in some of its activities at least, as an effective reality independent of brain. The Darwinian analysis vindicates the strongest urgings of our inmost selves — and James's preferred moral conception of the universe.[80]

James's Discovery of the Darwinian Argument

I believe that James hit upon this evolutionary argument sometime late in 1872 or early 1873, and that it helped heal his emotional sickness. James's spirits had noticeably picked up by March of 1873, when his father wrote his son Henry about William's improvement. In the letter quoted above, Henry Sr. claimed that William's mood was elevated not only through reading Renouvier (and Wordsworth), but also because he had become convinced that "mind acted irrespectively of material coercion." The Darwinian argument was James's most powerful demonstration of that autonomy.

Other evidence also suggests that the discovery was made in the early

[78] In fact, there is good evidence for the more rapid speciation of organisms with higher nervous centers. See, for instance, Leigh Van Valen, "Two Modes of Evolution," *Nature*, CCLII (1974), 298-300; and A. Wilson, G. Bush, S. Case, and M. King, "Social Structuring of Mammalian Populations and Rate of Chromosomal Evolution," *Proceedings of the National Academy of Science*, LXXII (1975), 5061-5065.

[79] The great neurophysiologist Wilder Penfield made basically this same argument in his *Mystery of the Mind* (Princeton: Princeton University Press, 1974), pp. 67-72.

[80] In their otherwise insightful article, "William James and Gordon Allport: Parallels in their Maturing Conceptions of Self and Personality," in R. Reiber and K. Salzinger (eds.), *Psychology: Theoretical-Historical Perspectives* (New York: Academic Press, 1980), pp. 57-70, Richard High and William Woodward propose that James, "educated as a scientist in an era shaken by Darwin's evolutionary theory, feared the moral implications of an entirely mechanistic universe" (p. 60). It is, of course, my argument that Darwin's evolutionary theory freed James from such fears.

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1870s. In his review of Wundt's *Grundzüge der physiologischen Psychologie*, published in the July 1875 issue of the *North American Review*, James, referring to the epiphenomenalism of Shadworth Hodgson and William Clifford, succinctly countered:

> Taking a purely naturalistic view of the matter, it seems reasonable to suppose that, unless consciousness served some useful purpose, it would not have been superadded to life. Assuming hypothetically that this is so, there results an important problem for psycho-physicists to find out, namely, *how* consciousness helps an animal, how much complication of machinery may be saved in the nervous centres, for instance, if consciousness accompany their action. . . . In a word, is consciousness an economical *substitute* for mechanism?[81]

The evolutionary argument for the independence of mind is clearly sketched here; but James probably had it even earlier, in 1874, when he penned in his copy of Wundt's *Grundzüge*, next to a section on the origin of self-consciousness, the following remark: "This 'Bewusstsein' seems then with him to mean the element of spontaneity as distinguished from receptivity."[82] James's contrast of spontaneity with receptivity smacks of his evolutionary hypothesis.

In his review of Wundt, James referred to an earlier article published in the *North American Review* of April 1873, his friend Chauncy Wright's "Evolution of Self-Consciousness." In this article, Wright argued that Darwinian evolution was opportunistic; he showed how already established structures in animals, mental as well as anatomical, might be put to new and unexpected uses. Evolution, therefore, need not produce a continuous gradation of functions.

> The truth is, on the contrary, that new uses of old powers arise discontinuously both in the bodily and mental natures of the animal, and in its individual developments, as well as in the development of its race, according to the theory of evolution, although, at their rise, these uses are small and of the smallest importance to life.[83]

Wright was a thorough-going positivist and scientific reductionist. In his article, he contended that human self-consciousness was not a supernatural endowment but evolved quite naturally and accidentally out of ordinary animal awareness. Yet the passage just quoted could be read

[81] William James, "Review of *Grundzüge der physiologischen Psychologie* by Wilhelm Wundt," *North American Review*, CXXI (1875), 201.

[82] William James's annotation is on p. 463 of vol. 2 of Wilhelm Wundt's *Grundzüge der physiologischen Psychologie* (Leipzig: Engelmann, 1874).

[83] Chauncey Wright, "Evolution of Self-Consciousness," *North American Review*, CXVI (1873), 246.

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somewhat differently, as indicating that specifically mental activities were accidentally introduced to their environments, but that they might have had adaptive uses there, and that because of their causal efficacy, they might have continued to evolve. This, of course, is the nut of James's argument. Since Wright and James were close friends at this time, they may have discussed the article before it was published. If so, this would, perhaps, place the time of James's discovery of the argument prior to his father's letter, that is, sometime between late 1872 and early 1873.

A more direct source for James's argument, however, might have been Darwin's *Descent of Man*. In April 1871, soon after the book's appearance, James wrote from Cambridge to Bowditch, then in Germany, about the stir it was causing:

> Darwin's new book appears to make a good deal of noise in the papers. I suppose it makes hardly less in Germany notwithstanding the war. I have not yet seen it. I had the pleasure of hearing Agassiz call it "rubbish" the other day.[84]

Probably, James read the *Descent* a bit after this, about the time his spirits revived; his first printed reference to the work, though, came in 1878.[85] In the book, Darwin clearly argued for the effectiveness of "the intellectual and moral faculties of man":

> These faculties are variable; and we have every reason to believe that the variations tend to be inherited. Therefore, if they were formerly of high importance to primeval man and to his ape-like progenitors, they would have been perfected or advanced through natural selection.[86]

Darwin considered mental faculties to be completely determined by brain patterning, rather like Huxley. But James could not have known this, since Darwin only expressed this interpretation in his private notebooks.[87] What tells against James's forthright derivation of his argument for the causal independence of mind from a passage such as this is simply his failure to identify the source, and James usually gave credit where he thought it due. His reading of the *Descent*, of course, along with conversations with Wright, might have caused the argument to bob to the surface of his thoughts, without his being reflectively aware of its origins.

[84] William James to Henry Bowditch, 8 April 1871, James Papers.

[85] William James, "Brute and Human Intellect," *Journal of Speculative Philosophy*, XII (1878), 260.

[86] Charles Darwin, *The Descent of Man and Selection in Relation to Sex*, 2 vols. (London: Murray, 1971), I, 159.

[87] I have discussed this matter in "Influence of Sensationalist Tradition."

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The best source for recovery of James's thoughts during late 1872 and early 1873 would be his diary. Unfortunately, entries between April 1870 and February 1873 are missing. The evidence, then, that James formulated his argument before 1874, when he was preparing his review of Wundt's *Grundzüge*, must remain circumstantial.

My reason for trying to fix an early date for James's discovery of the Darwinian argument for mental autonomy is simply to sink a strong anchor for the thesis of this paper: that Darwinian evolutionary theory played a fundamental role in James's mental development, emotional as well as intellectual, and thus that the historian cannot ignore the possible play of personality factors in the development of science. I think the several parts of this thesis are sufficiently sustained even without fixing an early date for James's discovery, but my claim would be a bit more secure if James had indeed seized upon Darwinism immediately as an instrument of his own emotional therapy.

The Reach of James's Darwinian Psychology

The argument of James's Hopkins lectures and ensuing article formed a central nerve radiating out into the many other papers he composed during 1878 and the years following. Finally, after some ten years, he began systematically to incorporate most of these essays into the chapters and sections of his *Principles of Psychology*, which Holt, with great relief, published in 1890. The article "Are We Automata?" became chapter five of the book, while the Darwinian analyses of the selective capacities of consciousness and its spontaneously generated interests provided the framework for those several other chapters that developed James's characteristic theses in epistemology, metaphysics, religion, psychology of the self, and ethics. Let me indicate the ways in which James employed Darwinian ideas for solving central problems in these areas. I will first dwell a bit on his evolutionary epistemology, since that functions as the principal control over conceptions in the other areas; and then I will more briefly follow the reach of his Darwinian considerations through the *Principles* and related essays.

Evolutionary Epistemology and Its Foundations. In Jamesean epistemology, the evolutionary perspective explains how fundamentally new ideas might be introduced, both to an individual consciousness, which preserves those that accord with its already established interests, and to a larger society, which will select or reject them. Basic conceptions in science, for instance, are not, as Spencer thought, forced on the thinker

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by nature. The booming buzzing confusion of unorganized experience could hardly reveal the aesthetically structured world, say, of Newtonian mechanics. Rather, spontaneous conceptions put the hodgepodge of experience in order, emphasize some aspects, and ignore others. The final test of such ideas will be their ability, in the long run, to survive the rigors of experience.[88]

This summary description of James's evolutionary epistemology leaves obscure his conception of the relation between inherited and individually acquired patterns of thought. This is one of the hazier regions of his Darwinian psychology. Nonetheless, a path can be made through the several considerations that bear on the question. The idea that mental structures evolved in the animal kingdom was completely bound up in James's original view with Spencer's notion that fixed mental habits, which were molded directly on the physical environment, could be transmitted to progeny. James initially wedged this idea in as a distinction between animal and human mind. In animals, fixed habit is the rule.

> The brain grows to the exact modes in which it has been exercised, and the inheritance of these modes — then called instincts — would have in it nothing surprising. But in man the negation of all fixed modes is the essential characteristic.[89]

James urged, in his 1878 essay "Brute and Human Intellect," that men, unlike animals, might easily crack patterns of thought and rearrange the pieces anew. The human mind, in short, was chancy and spontaneous, the animal mind fixed and pre-determined.

During the 1880s, however, James began gradually to uncover more native veins in the human mind. These harder streaks appeared as he worked through the theories of will, emotion, and instinct that would give ballast to the loftier speculations of the *Principles*. In his essay on psychology of will, "The Feeling of Effort"[90] (1880), which became the basis of chapter 26 of the *Principles*, he advanced his "ideo-motor" hypothesis, the pieces of which he pulled from Lotze, Carpenter, Renouvier, Darwin, and his own early experiences in Germany. The hy-

[88] William James, *Principles of Psychology*, II, 633-640.

[89] William James, "Brute and Human Intellect," p. 275. James left this passage unchanged when he incorporated "Brute and Human Intellect" into chapter 22 of the *Principles* (II, 368). James's belief in the extreme flexibility of the human mind dimmed as he worked through his emerging theories of emotion, will, and instinct — or so I argue below.

[90] William James, "The Feeling of Effort," *Anniversary Memoirs of the Boston Society of Natural History* (Boston: Boston Society of Natural History, 1880).

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pothesis proposed that "every representation of a motion awakens the actual motion which is its object, unless inhibited by some antagonistic representation simultaneously present to the mind."[91] Simply concentrating on a plan of action releases the action itself. The human mind hesitates, James supposed, only when several courses of action vie for attention.

This theory of willful behavior supported James's new conception of emotion, announced in 1884 in his article "What is an Emotion?"[92] Here he portrayed emotions as feelings of bodily response. We perceive certain objects or events (e.g., the crazed killer stalking toward us); our body reflexively and instinctively reacts (e.g., knees buckle, face grows pale, hands shake); and we feel this physical reaction (e.g., we are afraid). James's theory, independently arrived at by the Danish physiologist Carl Lange, asserts, then, that cognition does not cause emotion, but rather that emotion is a direct response to the instinctive wisdom of the body. Emotions are the first stage in the release of innate instinctive reactions.[93] The only difference between the two is that true instincts not only evoke emotions but spill over into overt and more elaborate behavior. Though experience subsequently alters innate patterns, instincts and concomitant emotions nonetheless form the original base for all human behavior. Indeed, man's emotional and instinctive endowment functions as the motor for willed behavior: on any occasion, incipient instincts, colored by emotion, clamor for attention; and that which consciousness exclusively selects becomes automatically executed. Thus James's conception of will and emotion led him to find in human mind a native legacy. The character of that deposit was spelled out in his theory of instinct.

The third step in James's advance toward a more nativistic conception of human mind was reached in a series of papers he published on instinct

[91] *Ibid.*, p. 17. For a lucid discussion of the origins of the "ideo-motor" hypothesis in W. B. Carpenter's physiological theory, see Kurt Danziger, "Mid-Nineteenth Century British Psycho-Physiology," in *The Problematic Science: Psychology in Nineteenth-Century Thought* (note 63 above), pp. 119-146.

[92] William James, "What is an Emotion?" *Mind*, IX (1884), 188-205. This article became the basis of chapter 25 of the *Principles*. Gerald Myers skilfully discusses James's theory in "William James' Theory of Emotion," *Transactions of the Charles S. Peirce Society*, II (1969), 67-68.

[93] William James, *Principles of Psychology*, II, 442. Browning, in his *Pluralism and Personality*, p. 163, argues that James disconnected emotions from meaning by interpreting them as direct responses to the body. But Browning's objection supposes that bodily reactions themselves are meaningless, which James's evolutionary theory of instinct denies.

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in 1887.[94] He derived his ideas about instinct largely from sources that harmonized with his theories of will and emotion. The *Tierische Wille* (1880) and *Menschliche Wille* (1882) of Wundt's student G. H. Schneider, *Mental Evolution in Animals* (1883) by Darwin's own disciple George Romanes, and the experimental articles of Spencer's advocate Douglas Spalding, as well as the work of their mentors, provided James the conceptual foundations and many examples for his theory of instinct.[95] He defined instinct, in accord with this literature, as "the faculty of acting in such a way as to produce certain ends, without foresight of the ends, and without previous education in the performance."[96] Essentially for James, and for those whom he read, instincts were complexes of reflex actions released by appropriate environmental stimuli. Since they were executed initially without directive experience, instinctive behaviors could only be fixed innately in the organism. The above mentioned writers, particularly Schneider, also helped him to see that man did not differ from brutes by reason of fewer instincts. On the contrary, man, according to James, "is more richly endowed in this respect than any other mammal."[97] He counted over thirty classes of human instinct, a list large enough to choke the behaviorist John Watson.[98] Only the jumble of different instincts (e.g., anger, pugnacity, sympathy, and love, when a child has dropped his jelly sandwich on your open volume of Kant's *First Critique*) shrouds the inbred grains of human decisions. In such situations, the strongest instinct will usually out. But, in James's view, reason has its role: it can neutralize a particular instinct by mobilizing another (so the hand ready to thrash is stayed by one's attending to the smile of an angelic offspring). And "thus,

[94] William James, "What Is an Instinct?" *Scribner's Magazine*, I (1887), 355-365; and "Some Human Instincts," *Popular Science Monthly*, XXI (1887), 160-170, 666-681.

[95] See Georg Schneider, *Der thierische Wille* (Leipzig: Abel, 1880) and *Der menschliche Wille vom Standpunkte der neueren Entwickelungstheorien* (Berlin: Dummlers, 1882); George Romanes, *Mental Evolution in Animals* (London: Kegan Paul, Trench & Co., 1883); and Douglas Spalding, "Instinct and Acquisition," *Nature*, XII (1873), 507-508; "Instinct, with Original Observations on Young Animals," *Macmillan's Magazine*, II (1873), 282-293; and "On Instinct," *Nature*, VII (1872), 485-486.

[96] William James, "What Is an Instinct?" p. 355.

[97] William James, "Some Human Instincts," p. 666.

[98] In his *Behaviorism*, rev. ed. (Chicago: University of Chicago Press, 1930), John Watson listed the many instincts James regarded as the endowment of man. He then responded: "The behaviorist finds himself wholly unable to agree with James and the other psychologists who claim that man has unlearned activities of these complicated kinds. We have all been brought up on James or possibly even on a worse diet, and it is hard to run counter to him" (p. 110).

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though the animal richest in reason might be also the animal richest in instinctive impulses too, he would never seem the fatal automaton which a *merely* instinctive animal would be."[99]

Guided by Schneider, Romanes, Spalding, and even Darwin, James reluctantly granted that instincts probably resulted from inherited habit; though in man, natural selection, he thought, produced complex instincts and the higher mental faculties. A short time before the publication of his *Principles*, however, he read of August Weismann's experiments, which demonstrated that succeeding generations of mice with clipped tails failed to bear progeny with any shortening of their hind members.[100] James gratefully concluded, in the last few pages of *Principles*, that Darwinian chance variation and selection could be the only agents of evolutionary change in human and animal behavior.

James's elaboration of theories of will, emotion, and instinct thus altered his perspective on the inheritance of mental categories in man. In the last chapter of the *Principles*, he summarized his conclusions and carefully specified those mental traits he believed products of evolution. Certainly, sensations of color, taste, sound, pleasure, pain, etc., were evolved mental responses. Representations of space and time relations were also heritable; he agreed with Spencer (before reading Weismann) that they were forged through habitual exposure to real space- and time-connections in nature. But the two fundamental abilities that make rational thought possible — the discernment of differences and the ability to hold in consciousness a series of objects — these could not be the yield of impressed experience, as a Spencerian approach would require; rather, they were necessary for coherent experience in the first place. These faculties must have spontaneously flashed in our ancestors, permitting them to survive and prosper. With such pre-formed equipment, then, along with evolved emotional capacities and instinctive responses, the child can initially organize experience and render it intelligible. Higher mental categories — e.g., causality, logical principles, necessary truths of mathematics, ideal relations of aesthetics and morality — derive naturally from empirically acquired concepts that have been structured through our inherited cognitive framework.

James's epistemology thus rested on Darwinian principles. The mind comes already outfitted with fixed sensory and emotional responses,

[99] William James, "What Is an Instinct?" p. 360.

[100] See August Weismann, "On Heredity" (1883) and "The Supposed Transmission of Mutilations" (1888), in his *Essays upon Heredity*, ed. and trans E. Poulton et al. (Oxford: Clarendon Press, 1889). James cites this translation in *Principles of Psychology*, II, 686.

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instinctive reactions, and basic rational abilities; these constitute our evolutionary legacy. But the acquisition of new ideas is also Darwinian: spontaneous hypotheses, guesses, notions, etc., erupt in our pedestrian and scientific encounters with the world; those that survive the pitiless force of reality live for another day. But this Darwinian epistemology, both in its phylogenetic and ontogenetic phases, implied a peculiar sort of metaphysics. Indeed, James's epistemology led to a notion of reality as provisional and in the making — a conception that congenially accorded with his ultimate religious and moral purposes.

Metaphysics and Religion. The spontaneous and selective aspects of consciousness explain our postulation of a world of natural objects in the first place. What we decide to be real, James contended, will depend on the nature of the intellectual environment — our interests, beliefs, and conceptual framework — that selects mental variations. The objective world of common sense and of science has ultimately a subjective foundation: our ego, our self selects what will be real for us.

> *The fons et origo of all reality, whether from the absolute or the practical point of view, is thus subjective.* . . . Reality, starting from our Ego, thus sheds itself from point to point — first, upon all objects which have an immediate sting of interest for our Ego in them, and next, upon objects most continuously related with these. It only fails when the connecting thread is lost.[101]

The objects we regard as most real are those that touch our senses.[102] Our ancestors who chanced to test their conceptions against sensation were able to avoid the saber-toothed tiger lurking in their paths; and we have inherited their mental penchant. As for those proto-men who fancied other criteria for real objects, their lines have not prospered.

In chapter 21 of the *Principles*, James described the various orders of reality that men were apt to postulate: the natural world primarily, but also the world of scientific objects (e.g., atoms, molecules, etc.), of abstract truths, of madness, and of prejudice and superstition. We rank these orders from most real to least real by their relation to our sensory, emotional, and active lives. "In this sense," according to James, "what ever excites and stimulates our interest is real."[103] But if this is the scale for measuring reality, then for James the world of religion was decidedly real.

[101] *Ibid.*, pp. 296-297.

[102] *Ibid.*, p. 306, 311-312. Richard High considers the character and sources of James's perceptual realism in "Shadworth Hodgson and William James's Formulation of Space Perception," *Journal of History and Behavioral Sciences*, XVII (1981), 466-485.

[103] William James, *Principles of Psychology*, II, 295.

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During his young manhood, James felt the sting of religious demands from several quarters. His father unleashed upon him baroque missiles of Swedenborgianism, from which he defended himself with logical objection and retaliatory skepticism.[104] Yet the father's feeling for religion, his profound conviction that an ideal reality hovered just above the horizons of human life, that there would be a "final evolution *of human nature itself* into permanent harmony with God's spiritual perfection"[105] — these sentiments penetrated the son's defenses. James became a champion himself, not of orthodox theology, nor even of heterodox faith, but of the warm and energizing *feeling* of divinity. He marshaled this hopeful energy against the scientific materialism of his friends Wright and Holmes. In his wife, he found an ally. Alice enshrined for James the sacred presence that his father declaimed, and he constantly turned to her to stoke his own religious fervor. As he got older, James developed a growing sense of a divinity beyond theological formulation.[106] It was this feeling he sought to vindicate empirically in his Gifford Lectures on *The Varieties of Religious Experience* (delivered in 1901 and 1902),[107] in which he stacked the hard data of religion at work in the lives of exceptional men against the evidence upon which the sciences rested. He found religion to have as much claim to empirical grounding as science. But in his earlier essays and in the *Principles*, he pursued another approach to religion — the evolutionary.

James utilized Darwinian theory to provide scientific support for religion principally in three ways.[108] First, he proposed that religious faith could be regarded as a spontaneously generated set of beliefs not yet rejected by the winnowing hand of reality. "We know so little about the ultimate nature of things, or of ourselves," he warned, "that it would

[104] See the exchange of letters between father and son on the topic of the elder James's religious beliefs in Perry, *Thought and Character of William James*, II, 705-716.

[105] Henry James, "Spiritual Creation," in *The Literary Remains of the late Henry James*, p. 457.

[106] James had a minimalist definition of religion. Religion meant essentially the belief that "the so-called order of nature, which constitutes this world's experience, is only one portion of the total universe, and that there stretches beyond this visible world an unseen world of which we now know nothing positive, but in its relation to which the true significance of our present mundane life consists." See William James, "Is Life Worth Living?" in his *Will to Believe* (New York: Dover, 1956; reprint of original ed. of 1897), p. 51.

[107] James's *Varieties of Religious Experience* appeared in 1902.

[108] In his essay "William James and the Culture of Inquiry," *Michigan Quarterly Review*, XX (1981), 264-283, David Hollinger describes the problematic character and the implications of the concept of science in James's later thought.

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be sheer folly dogmatically to say that an ideal rational order may not be real. The only objective criterion of reality is coerciveness, in the long run, over thought."[109] Religious belief might yet be confirmed, as James liked to put it, *ambulando*, in the great by and by. Second, the reality that religion postulated might require our continued acquiescence in order to evolve. Divinity itself might well be, as his father held, an organic reality fed on our constant belief in it.[110] Lastly, though James regarded the spiritual world as something ultimately verifiable only when we passed beyond, he harbored no doubt about the effective reality of religious belief itself. Religion as purely a belief system gave natural advantage to those who possessed it. He thus cautioned that a nation which succeeded in suffocating the religious sentiments of its citizens, replacing them, for instance, with sterile doctrines of empirical science, "that nation, that race, will just as surely go to ruin, and fall prey to their more richly constituted neighbors, as the beasts of the field, as a whole, have fallen prey to man."[111] Through the aid of Darwinian theory, then, James met his filial obligation to find scientific evidence for his father's deeply held conviction that "religion is real."[112]

Psychology of the Self. James's evolutionary approach also sanctioned his psychology of the self. In the famous chapter in the *Principles* on the "Consciousness of Self," one ripe with descriptions that have appealed to many phenomenologists,[113] James distinguished the several selves with which we become identified on different occasions: the material self, particularly our body; the social self, our image reflected in the attitudes of others; the spiritual self, those inmost memories,

[109] William James, "Remarks on Spencer's Definition of Mind as Correspondence," *The Journal of Speculative Philosophy*, XII (1878), 17.

[110] William James, "Is Life Worth Living?" p. 61.

[111] William James, "Reflex Action and Theism" (1881), in *The Will to Believe*, p. 132.

[112] On 9 January 1883, after learning of his father's death, James wrote his brother Henry from England of his intention to give expression to their father's conviction: "I must now make amends for my rather hard non-receptivity of his doctrines as he urged them so absolutely during his life, by trying to get a little more public justice done them now. As life closes, all a man has done seems like one cry or sentence. Father's cry was the single one that religion is real. The thing is so to 'voice' it that others shall hear, — no easy task, but a worthy one, which in some shape I shall attempt" (Perry, *Thought and Character of William James*, I, 165).

[113] The interest that John Wild and Bruce Wilshire (see notes 9 and 10 above) have in James rests precisely in those aspects of his thought most closely resembling the conceptions of Husserl and other phenomenologists. See also the remarks of Browning in *Pluralism and Personality*, pp. 64-86, and Herbert Spiegelberg in his *The Phenomenological Movement*, 2nd ed., 2 vols. (The Hague: Nijhoff, 1965), I, 111-117.

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feelings, and beliefs we associate with our deepest being; and the transcendental ego, a self usually found only in the souls of philosophers. In James's view, the foundation for our recognizing all of these selves as us is ultimately an emotion, a feeling of familiarity, a self-love. We appropriate our body — rather than that of the person next to us — and say "Here, this is me," because we are comfortable with it; it elicits our love and protection. Moreover, we love our selves in our friends, because we like what we see of us in them. Finally, we love our spiritual dispositions, our perishable powers, our passions and hates, our willingnesses and sensibilities. These three selves, according to James, "must be the supremely interesting objects for each human mind."[114]

With this last assertion, James moved from phenomenological description to scientific explanation. Every human mind must resonate to these interests, because they have been naturally selected.

> All minds must have come, by the way of the survival of the fittest, if by no directer path, to take an intense interest in the bodies to which they are yoked. . . . And similarly with the images of their person in the minds of others. I should not be extant now had I not become sensitive to looks of approval or disapproval on the faces among which my life is cast. . . . Were my mental life dependent exclusively on some other person's welfare, . . . then natural selection would unquestionably have brought it about that I should be as sensitive to the social vicissitudes of that other person as I now am to my own. . . . My spiritual powers, again, must interest me more than those of other people, and for the same reason. I should not be here at all unless I had cultivated them and kept them from decay. And the same law which made me once care for them makes me care for them still.[115]

James regarded these basic interests — in the material, social, and spiritual selves — as the inherited products of a long evolutionary history. These fundamental interests were instinctive; they were given a variety of expressions in the multitude of instincts that humans inherit, and which James so lovingly (and to those not recognizing the structure of his evolutionary psychology) indulgently recounted in the long chapter on instinct in the *Principles*.

The Moral Will. In several early essays and in various chapters of the *Principles*, especially the chapter on "Will," James poured out the scientific foundations for moral choice.[116] His construction was in two

[114] William James, *Principles of Psychology*, I, 323.

[115] *Ibid.*, p. 324.

[116] For an excellent study of theories of will in late nineteenth-century psychology, see Lorraine Daston, "The Theory of Will *versus* the Science of Mind," in *The Problematic Science: Psychology in Nineteenth-Century Thought*, pp. 88-115.

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parts: first, an account of the evolutionary source of moral interests, and, second, an explanation of the way the will operated so as to make free choice possible. In tackling the first part, James's strategy was, of course, to argue that moral interests, like other ideal standards, were spontaneous mental variations that had been selected. Like Darwin, he conceived these interests, in his early essays and lectures, as instincts having survival value, and thus selectively perpetuated in intelligent organisms.[117] But also like Darwin, he encountered a basic objection, that altruistic behavior, promoted by moral inclination, often appeared not to benefit the individual exercising it. James's solution to this conundrum, sketched in his essay "Spencer's Definition of Mind" (1878), seems to have been formulated, however, independently of Darwin's discussion of altruism in the *Descent of Man*.[118] Early tribal communities, he argued, had an interest in promoting the hero, the martyr, the gallant warrior, since, as he macabrely put it, "it is death to you, but fun for us."[119] That is, individual altruistic action would advance the welfare of the whole community, which then would become the selecting force for those organisms manifesting such behavior. Unlike Darwin, who saw altruistic behavior resulting from the selection of the whole tribe in competition with other tribes not having altruistic individuals, James seems to have conceived such behavior as a consequence of selfish individuals being selectively eliminated by their own communities. (This explanation, of course, presupposed an already existing community of moral individuals. James offered no account of the evolutionary origins of their altruistic behavior — nor, I think, could he have. He really did not fully understand something that Darwin saw straight through to the bottom, that to explain altruistic behavior the unit of selection cannot be the individual, since moral acts usually offer him no advantage. The unit of selection must be the whole tribe or community.[120] James did

[117] In his early essays, notably in "Remarks on Spencer's Definition of Mind as Correspondence," pp. 8-9 and 14-17, James suggested (rather obliquely) that moral principles or attitudes may be directly inherited. This suggestion, however, did run counter to his presumption of the great flexibility of human mind. These antitheses were synthesized in the last chapter of the *Principles of Psychology*, where he argued that moral ideals arose from acquired concepts which had been sifted through an inherited mental framework. See the discussion of his evolutionary epistemology, above.

[118] See Darwin, *Descent of Man*, pp. 161-167.

[119] William James, "Remarks on Spencer's Definition of Mind as Correspondence," p. 9.

[120] For a discussion of Darwin's explanation of altruism, see my "Darwin and the Biologizing of Moral Behavior."

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appreciate, however, that the altruistic instinct in man would be delicately balanced with the instinct for self-preservation.[121])

The second part of James's analysis, his account of the operation of the will, required acceptance of his particular evolutionary construction of ideas. Thought, James supposed, originally evolved to facilitate action. "It is far too little recognized," he observed in an early essay,[122] "how entirely the intellect is built up of practical interests. The theory of Evolution is beginning to do very good service by its reduction of all mentality to the type of reflex action. . . . Cognition, in short, is incomplete until discharged in act." This theory of the motor function of ideas, which I have already mentioned above, served to make free choice a scientific possibility for him. In deciding what to do in a situation, the mind, he believed, becomes the playground of competing plans of action. When one idea finally dominates our attention to the exclusion of rivals, action follows automatically. In a moral decision, selfish, pleasure-preserving proposals vie with altruistic intentions. A free act, in James's estimation, consists in the mind selectively attending to one idea over others, becoming interested in it, while letting the others fade. Such attention, the active entertaining of the moral idea, for instance, would put a thumb on the scale. With the moral intention the most weighty, moral action would follow as a matter of course. Natural selection within the social environment of the primitive tribe may have outfitted modern man with moral ideas, but his behavior merits moral approbation only if he pursues those ideas freely.

James admitted that psychological introspection could never really decide whether the interest invested in an idea were merely a function of the idea's own attractive force or a mental variation spontaneously bestowed on it.[123] Empirical investigation and sound theory — that is, Jamesean evolutionary psychology — proved to him that determinism, at least, was not a mandate of modern science. But what science alone could not demonstrate, the subjective method of Renouvier allowed him to postulate: as a first principle we could choose freedom.[124]

[121] William James, *Principles of Psychology*, I, 325: "If the zoological and evolutionary point of view is the true one, there is no reason why any object whatever *might* not arouse passion and interest as primitively and instinctively as any other. . . . I might conceivably be as much fascinated, and as primitively so, by the care of my neighbor's body as by the care of my own. The only check to such exuberant altruistic interests is natural selection, which would weed out such as were very harmful to the individual or to his tribe."

[122] William James, "Rationality, Activity and Faith," pp. 65-66.

[123] William James, *Principles of Psychology*, II, 569-574.

[124] On 28 September 1882, James wrote Renouvier: "I believe more and more that free

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Conclusion

The subjective method of Renouvier served to boost James's declining spirits during his mental crisis. Yet it did not really lighten the weight of modern science, which seemed to press toward determinism as a necessary conclusion. James needed an objective counterbalance to give the subjective method real force. He found this in Darwinian evolutionary theory, which in its application to cognition and behavior seemed to require a mind independent of the machinery of brain and one thus capable of free choice. James's Darwinian approach extended far into the workings of his scientific psychology, as we have seen, and supplied the unity of conception and power of explanation that made it a significant influence on the course of early modern psychology in America.

Good history should have those qualities, I believe, that Horace attributed to good poetry. It should be *dulcis et utilis*. Even a moderately faithful representation of James's intellectual development could not be less than sweetly fascinating, since an extraordinary mind, a lively wit, and a deeply emotional personality dance on virtually every page of his essays and books. The history of James's development is also usefully instructive. He formulated four different arguments that for me, and many others, are still intellectually coercive.

The first is the elegantly simple argument for the mind being at least partly independent of brain machinery: if conscious mind is an evolved trait, which it certainly seems to be, then it could have been naturally selected only if it added some utility to the material of the brain, that is, to that organ as it is usually described in physiology textbooks. Karl Popper, for one, has employed this argument, though apparently without recognizing its originator.[125]

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will, if accepted at all, must be accepted as a postulate in justification of our moral judgment that certain things already done might have been better done. This implies that something different was possible in their place" (James Papers).

[125] See, for instance, Karl Popper, "Natural Selection and the Emergence of Mind," *Dialectica*, XXXII (1978), 339-355. For a dissenting opinion about the cogency of the Jamesean argument for the independence of mind, see William Bechtel and Robert Richardson, "Consciousness and Complexity: Evolutionary Perspectives on the Mind-Body Problem," a paper presented at the Eastern Division Meeting of the American Philosophical Association, December 1979. The theory of mind-body relation adopted most frequently by tough-minded philosophers of science is the dual-aspect identity theory. (See, for the classic statement, J. J. C. Smart, "Sensations and Brain Processes," in *The Philosophy of Mind*, ed. V. Chappell [Englewood Cliffs, N.J.: Prentice-Hall, 1962], pp. 160-172.) This theory holds that certain conscious processes are identical with specific brain processes, that introspection

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The second contribution is a bit more complex, but equally persuasive. This is James's proposal that ideas be regarded as comparable to chance variations. Their truth value — in a correspondence sense — becomes then a function of their survival value in the various intellectual environments into which they are plunged. This epistemological hypothesis is grounded in a compelling argument adumbrated by James: if novel ideas are not innate, and not simply logically induced from observation, then only a kind of blind or unjustified variation could first introduce them; and they will be retained only if they are adapted to the intellectual problem-conditions to which they are applied. There are now several epistemologists for whom this evolutionary theory of knowledge has struck home.[126] The theory also has, I believe, important consequences for the historian of science, since it suggests an historiographic model far superior to others.[127]

Third is James's approach to moral judgment, particularly his recognition of the instinctual base for other-regarding virtues. He thought that man, as an evolved animal, could not shed his biology upon being civilized. Rather, those instincts that constitute the possibility of society, such as parental affection and altruism, he took to be evolved traits, selected for over our long evolutionary history. James did not blush to admit, nor I believe should we, that our moral character is as much an

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picks out aspects of the same process that neurophysiology also (but more reliably) describes. But this theory is open to the objection that if conscious mind has evolved, as it must if carried by an evolved brain, then it must be useful, and therefore . . . well, the rest follows the Jamesean path. Nor is it plausible that the consciousness of higher organisms should be dismissed as a pleiotropy — i.e., a side effect of a gene selected for other reasons. Explaining traits as pleiotropic really makes sense only if they are single gene effects and thus simple traits. It is hardly likely that the complex mind of higher organisms is a one-gene effect. Only a Liebnizian geneticist believing in soul monads might propose that.

[126] See, for instance, Donald Campbell "Blind Variation and Selective Retention in Creative Thought and in Other Knowledge Processes," *Psychological Review*, LXVII (1960), 380-400; and "Evolutionary Epistemology," in *The Philosophy of Karl Popper*, ed. P. Schilpp (LaSalle, Ill.: Open Court, 1974), pp. 413-463; David Hull, "Altruism in Science: A Sociobiological Model of Co-operative Behaviour among Scientists," *Animal Behavior*, XXVI (1978), 685-697; and "Central Subjects and Historical Narratives," *History and Theory*, XIV (1975), 253-274; Robert Richards, "The Natural Selection Model of Conceptual Evolution," *Philosophy of Science*, XLIV (1977), 494-501; Karl Popper, *Objective Knowledge: An Evolutionary Approach* (Oxford: Oxford University Press, 1972); and Stephen Toulmin, *Human Understanding* (Oxford: Oxford University Press, 1972).

[127] See Robert Richards, "Natural Selection and Other Models in the Historiography of Science," in *Scientific Inquiry and the Social Sciences: A Volume in Honor of Donald T. Campbell*, ed. M. Brewer and B. Collins (San Francisco: Jossey-Bass, 1981), pp. 37-76.

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hereditary product as our ability to use language and think great thoughts.[128]

Finally, there is the subjective method itself. Here again, the argument is disarmingly simple. No system of thought can demonstrate its own first principles, something Aristotle long ago recognized. Foundational principles must ultimately result from custom, preference, or personality. This conclusion has, for me, two important lessons, one philosophical, the other historiographical. First, if the postulation of freedom and a spiritual world enrich life and competitively exclude no more important considerations, then why should we hesitate to endorse their reality? Second, the historian of science must attempt to reconstitute the actual intellectual environment that spawned scientific ideas, and not rest satisfied with some rationally sanitized reconstruction of that environment.[129] Those advocating what is usually called the "strong program" in the sociology of science have perceived this.[130] And while the historian, who seeks truly to portray the selecting environment, cannot be as anti-logistic as are some enthusiasts for the strong program, it is clear he can pursue that kind of history of science in which ideas inexorably unfold, bound together only by internal logical chains. This is neo-Spencerianism. The historian, rather, must give due weight to social influences, and, as James's own history powerfully shows, the psychology of individual personality.

[128] I have elaborated this argument in "Darwin and the Biologizing of Moral Behavior."

[129] Such as offered by Imre Lakatos, in "Falsification and the Methodology of Scientific Research Programs," in *The Methodology of Scientific Research Programmes: Philosophical Papers of Imre Lakatos*, vol. 1 (Cambridge: Cambridge University Press, 1978).

[130] For example, David Bloor, *Knowledge and Social Imagery* (London: Routledge and Kegan Paul, 1976); and Barry Barnes, *Interests and the Growth of Knowledge* (London: Routledge and Kegan Paul, 1977).

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