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SPENCERIAN EVOLUTIONARY PSYCHOLOGY IN *DANIEL DERONDA*

By Lauren Cameron

GEORGE ELIOT, NOTORIOUSLY SENSITIVE TO CRITICISM of her novels, received a reassuring letter from her publisher, John Blackwood, one month into the publication of *Daniel Deronda* (1876) in Books or Parts:

> Critics both public and private amuse me by their complaint that they do not quite understand Gwendolen. Did they wish you to lay down a chart of her character and fate on the first page? Did they ever *fully* know any human being at a first meeting or even after years of acquaintance? The objection is in reality the highest compliment, believing in fact the plainest confession of the interest excited. (*GEL* 6: 232)

While Blackwood was certainly trying to flatter and calm an anxious, important client, this letter also highlights a central element of Eliot's final completed novel: the depth, development, and realism of its psychological portraiture. What made the psychology of Gwendolen Harleth especially, but the eponymous Daniel Deronda as well, resonate with discerning readers from that time to this? This essay argues that it is the same cause that frustrates many readers: Eliot's engagement with the most famous and scientifically integrated psychological theory of her time – Herbert Spencer's.

Spencer was responsible for bringing evolutionary science to cultural prominence in the mid- to late-nineteenth century by persuading his contemporaries that evolution could inform all branches of natural, physical, and social science; he also became a foundational figure in a number of social sciences by transitioning fields like sociology, anthropology, and especially psychology from personal and philosophical reflections to biologized practices informed by standards and statistics (Matus 61; Rylance 3, 241). Nonetheless, Spencer remains an unpopular figure in historical, literary, cultural, and scientific studies. Several historians of science and literary critics have outlined the reasons for this neglect, which boil down to a tendency to reduce Spencerian thought to Social Darwinism while simultaneously fearing any association with that disreputable doctrine. The popularity and fashionability of Darwinism also obscure consideration of other Victorian evolutionary theories (Dixon, "Spencer and Altruism" 85; Francis 11; Graber 80; Mingardi 4; Paxton 4; Richards, *Darwin* 287). Literary critics, then, tend to dismiss Spencer's thought as incompatible with Eliot's social vision, treating the former as mechanistic, misogynistic, dogmatic, and socially regressive.

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A few studies of Spencer and Eliot as mutually informing thinkers and writers do exist. More often, however, critics use key Spencerian terms in describing Eliot's project without acknowledgement of their likely origin or of the discourse between these giants of the mid-Victorian London intelligentsia; this tendency is particularly common in discussions of psychology. Instead, the dominant critical trend has been to consider Darwin as epitomizing mid- to late-Victorian evolutionary theory, and to see Eliot's work in particular as Darwinian, following the lead set by Gillian Beer in her seminal *Darwin's Plots* (1983).[1] As Eliot writes in *Daniel Deronda*, however, we should "beware of arriving at conclusions without comparison" (32; bk. 1, ch. 4). Traits of Eliot's fiction that are identified as Darwinian could just as easily been seen as Spencerian, including emphases on mutation, environmental influences, transition, contingency and circumstance, and the generation of alternatives. This may be a matter of both evolutionary theorists deriving their ideas from a shared scientific and cultural discourse, or of mutual influence – Darwin lists Spencer as among evolutionary thinkers whose work preceded his own in *Origin*. Eliot and Spencer, on the other hand, maintained a direct intellectual and personal relationship over nearly three decades, and as a consequence their work was mutually informative. Eliot was immersed in evolutionary ideas and interested in the power of scientific images long before her acquaintance with Darwin's writings, in part because Spencer was an early proponent of evolutionary theory. In the nineteenth century, she was considered a Spencerian rather than a Darwinian (Karl 38; Paxton 4–7, 16). Eliot was particularly influenced by Spencer's synthesizing of ethics with evolutionary development on an individual psychological and a global cultural level (Karl 594–95).

This essay expands on the nature of Eliot and Spencer's personal and intellectual relationship, focusing particularly on their mutually influential ideas about psychology and the distinctions of each writer's thoughts from a purely Darwinian evolutionary schema. After explaining the basics of Spencerian evolutionary psychology, I use *Daniel Deronda* as a case study for Spencerian psychological principles. In particular, I focus on uncovering Gwendolen's and Daniel's experiential and inherited mental associations, and the consequences of succeeding or failing to integrate these two strands of acquired associations. Eliot's novelistic project can then be seen as a particularized study of the many complications of evolutionary psychology that serves as a correlative and corrective to Spencer's tendency to generalize in his theoretical and social scientific work.

I. Herbert Spencer's Lamarckian Evolutionary Synthesis

SPENCER'S EXPOSURE TO EVOLUTIONARY THEORIES dated back to his early life. His father was a member of the Derby Philosophical Society, founded by Erasmus Darwin in 1783, and Spencer's work as a railway engineer in his early twenties brought him in contact with fossils that piqued his interest in geology, leading him to Charles Lyell's *Principles of Geology* in 1840 (Carneiro xiv-xv; Francis 22; Peel xiii, xxi; Taylor, *Philosophy* 59). Lyell deeply opposed the evolutionary theory of Jean-Baptiste Lamarck, which essentially proposed that organisms grow increasingly complex over time and adapt to their environmental pressures as they become more differentiated from each other; these adaptations, acquired in individual organisms' lifetimes, are inherited by their offspring.[2] The problem with Lyell's attempt to discredit Lamarck in his *Geology* was that he went into so much detail that many readers, including Spencer, found this first exposure to Lamarckian theory intriguing and persuasive

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(Depew 245; Taylor, *Philosophy* 58, 59). Lamarckianism was attractive to Spencer and others because, as Beer explains it, the theory is optimistic, "propos[ing] a world of intelligent desire rationally satisfied," in which "bad behaviour results in loss and degradation" but positive, adaptive behavior gives rise to "intelligent succession" in "a world apparently more or less stable" (19, 20, 21). Spencer remained committed to Lamarckianism for the rest of his life, bringing to the theory his own concept of the inheritance of acquired mental characteristics – instincts, habits, beliefs – and so incorporated biology into the previously philosophical fields of psychology and sociology (Bowler, *Non-Darwinian Revolution* 65, 158–59; Postlethwaite, *Making It Whole* 205; Rylance 216, 241; Taylor, *Philosophy* 57). Spencer also infamously coined the phrase "survival of the fittest" in *Principles of Biology* (1864) to better describe Darwin's "natural selection" as an evolutionary process that eliminates inferior traits; for him, Lamarckian use-inheritance differed by selecting for positive, adaptive traits and allowing for survival and advance (Carneiro xx; Richards, "Relation of Spencer" 25).

Spencer was canny enough to hitch his wagon to Darwin's *Origin* – particularly the respect accorded it by professional scientists – and the Darwin circle opened to Spencer because of his commitment to promoting evolutionary theory, even though he felt natural selection played a small role in evolution at best and never gave up on the primacy of Lamarckianism (Jones 7; Richards, *Darwin* 298; Richardson). Before Spencer's alliance with Darwinism, his sales were low: 200 copies of *Principles of Philosophy* between 1855 and 1862, 750 of *Social Statics* between 1851 and 1862, 200 copies of *Principles of Psychology* between 1855 and 1856, and an additional 35 by 1860 (Francis 144; Jones 5; Richards, *Darwin* 298). In contrast, Spencer's *Study of Sociology* (1873), published as three-book volumes only one month after the articles on the same material finished their serialization in the *Contemporary Review*, sold over 26,000 copies (Abel 266; Francis 155; Jones 9).

Spencer is widely considered more of a scientific popularizer than a scientist in his own right; this minimizing of his contributions to nineteenth-century science misrepresents how contemporaries viewed Spencer and how his systematizing method was consistent with most other scientific figures of the century, not to mention his powerful influence on scientific thought. Spencer is responsible for permanently changing scientific terminology so that the "theory of evolution" is still referred to as such today, as opposed to "the development hypothesis" or the many variations that were previously in currency (Bowler, "Changing Meaning" 107–08; Carneiro xvii). He felt that "evolution" better captured the universal process of increasing complexity, increasing heterogeneity, increasing differentiation (i.e., specialization of functions), and increasing integration (i.e., coordination and interdependence of differentiated components) (Andreski 8; Gagnier 317; Levine 160; Straley 590; Taylor, *Philosophy* 57). Spencer's interests ranged through a wide variety of disciplines, including philosophy, history, anthropology, natural history, sociology, and psychology, which might make his career seem scattered or dilettantish, but in fact he saw evolution as the unifying principle behind all of them:

> While we think of Evolution as divided into astronomic, geologic, biologic, psychologic, sociologic, &c., it may seem to a certain extent a coincidence that the same law of metamorphosis holds throughout all its divisions. But when we recognize these divisions as mere conventional groupings, made to facilitate the arrangement and acquisition of knowledge – when we remember that the different existences with which they severally deal are component parts of one Cosmos; we see at once that

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> there are not several kinds of Evolution having certain traits in common, but one Evolution going on everywhere after the same manner. (*First Principles* 537)

Spencer was remarkably consistent in his views on evolution over the nearly three decades during which Eliot was familiar with his work: to him, evolution was progressive, continuous, universal, observable in all life forms and societies no matter how small and localized, and tending toward increasing happiness ("Progress: Its Law and Cause" 2–3; *First Principles* 538; *Principles of Psychology* 620). Spencer applied evolutionary theory to human beings as individuals and societies far before Darwin was comfortable doing so, and considered how national characters might be attributable both to environmental pressures that societies face and to the inheritance of adaptations to such pressures (Richards, *Darwin* 285; Taylor, *Philosophy* 62; Zappen 154). Spencer believed that human evolution would proceed not primarily through physical adaptations, because the industrialization eliminated or circumvented many environmental pressures, but instead through mental and moral progress, especially as people and societies learn to cooperate increasingly in a globalized world (Bowler, *Non-Darwinian Revolution* 138; Francis 291; Richards, *Darwin* 272–73).

Spencer's social philosophy is often pigeonholed as social Darwinism, but in fact his legacy is quite wide-reaching: he is considered foundational both to modern libertarian and to modern socialist movements. That two such diverging political theories could be inspired by Spencer points to the complicated nature of his social thought, which is often unfairly reduced to "survival of the fittest." While Spencer opposed government-mandated benefaction – such as the New Poor Law of 1834 – based on the belief that it was ineffective in alleviating suffering in the short-term and that it inhibited the development and inheritance of instinctual altruistic behavior in the species in the long-term, he also thought that a perfect, universal altruism would be the endpoint of social evolution (Richards, *Darwin* 263, 306; Taylor, Introduction xx; Taylor, *Philosophy* 110). Social evolution, to Spencer, necessitates individual adaptation to social life, widespread and voluntary cooperation, and a government small enough not to impede the movement toward universal peace, happiness, and radical equality. Thus, not only is evolution through adaptation and inheritance of acquired traits progressive, it is also purposive and moral (Moore 4; Paxton 25; Richards, "Relation of Spencer" 29; Rylance 217; Taylor, *Philosophy* 111, 115). Spencer was perhaps both the most influential nineteenth-century theorist of evolutionary ethics as well as of altruism, with the 1870s witnessing three of his major publications promoting an altruistic vision of individual and social evolution: *The Principles of Psychology* (2nd ed., 1870–72), *The Study of Sociology* (1873), and *The Data of Ethics* (1879).

Twentieth-century critics were not particularly sympathetic to Spencer's philosophy or literary influence, but in the late Victorian era Spencer was widely considered to be "one of the world's greatest philosophers," "*the* philosopher of his time"; in fact, he might have been the first philosopher to sell one million copies of his work during his lifetime (qtd. in Dixon, *Invention of Altruism* 187; see also Mingardi 2). As we saw earlier, these numbers jumped substantially after his alliance with Darwin's circle, which suggests that Spencer would not have achieved such success without his cultural milieu. Spencer was at the height of his fame in the 1870s and 1880s, primarily because of his Synthetic Philosophy, which brought an evolutionary perspective to a number of biological and social scientific fields as well as to philosophical and theological concerns (Gagnier 319; Jones 10; Taylor, *Philosophy* 1). As a consequence, Spencer could not be ignored by major Victorian thinkers, even if they would

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have preferred otherwise. Though Spencer was never a celebrity per se, his status as a major thinker spread across the globe, so that he has been described as "the first international public intellectual whose views – on everything from politics and religion to the most humane way to kill lobsters – were listened to by a large and devoted audience" (qtd. in Taylor, *Philosophy* 2; see also Francis 8; Mingardi 2). While biographers and historians of science at the turn of the century idolized Spencer, other thinkers parodied his extensive system, as we can see in William James's quip that, for Spencer, "evolution is a change from a no-howish untalkaboutable all-alikeness to a some-howish and in general talkaboutable not-all-alikeness by continuous sticktogetherations and somethingelseifications" (Clodd 171–82; Macpherson esp. 233; qtd. in Perry 1: 482). His influence in literature spread from the United States (as in the novels of Jack London and Frank Norris) to Russia (in Anton Chekov's novels), Germany (in Friedrich Nietzsche's ethics), South Africa (in Olive Schreiner's novels), and, of course, Britain (in Eliza Lynn Linton's, H. G. Wells's, Thomas Hardy's, and George Eliot's novels) – to name just a few (Berkove "*Before Adam*" and "London and Evolution"; Chilton 3–7; Colson 25; Dixon, *Invention of Altruism* 187–89; Hands 145; Moore 4; Taylor, *Philosophy* 1).

II. Eliot's Relationship with Spencer

ELIOT AND SPENCER SHARED A PERSONAL HISTORY that informed both of their intellectual projects. A clear understanding of their life experiences helps to demonstrate why Eliot's evolutionary paradigm can be usefully considered as Spencerian rather than as just Darwinian. Famously, Herbert Spencer experienced with George Eliot "the only romantic episode in an apparently loveless life" (Mingardi 19). The two met in the offices of John Chapman, the publisher who employed and housed Eliot when she first moved to London; she quickly came to share the opinion of such intellectuals as George Henry Lewes, Thomas Henry Huxley, and John Tyndall that Spencer was "a forceful and original thinker" (Abel 259). Biographers tend to agree that Eliot was drawn to Spencer largely because of her intense loneliness, both romantic and intellectual, and the fact that he was probably the closest to an intellectual equal she had encountered (Henry 67; Karl 142, 147). Although Spencer rejected Eliot's attempts to move their relationship from companionate and cerebral to romantic and marital, he kept a photograph of her in his bedroom until his death in 1903; he also did not destroy her love letters to him, suggesting that her affection meant more to him than he ever admitted.[3] Critics often blame Spencer's lack of romantic feelings for Eliot on her masculine physical and mental traits, but at least one biographer attributes Spencer's frigidness to his concern that getting involved with a woman would bring out his father's abusive tendencies in him, not to mention pass them down to another generation (Francis 7, 46, 71–75; Karl 148–49; Paxton 19). He thus lived his beliefs, preventing himself from entering situations that might perpetuate unfavorable inheritable traits.

Redeemingly, Spencer was responsible for introducing Eliot and Lewes twice, once casually in 1851 and the second time in 1852 with the (successful) hope of sparking a romantic interest between his friends. Spencer remained supportive of Eliot and Lewes for the rest of their lives,[4] and was even sympathetic toward Eliot's decision to marry John Cross near the end of her life; he was pleased that Eliot and Cross were rereading his *Ethics* and *Sociology* together, believing that Eliot maintained agreement with him on most points (Karl 627; Spencer, *Autobiography* 2: 237, 430). He commented in his *Autobiography* that

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this sympathy extended to the point that his "influence might have been more manifest in further works if she had lived to write them" (Spencer, *Autobiography* 2: 430). Eliot particularly praised Spencer's *Principles of Psychology*, even suggesting a particular sentence that Spencer used as inspiration for the work (jettisoning a different phrasing of J. S. Mill's in consequence) (*GEL* 2: 145; Postlethwaite, *Making It Whole* 210; Rylance 212). Although multiple critics have commented on Spencer's desire to deny Eliot's influence upon his thought and work, such judgments are unfair: he cited Eliot's help in his *Psychology*, he wrote to an American correspondent that he and Eliot were mutually influential, and he told John Fiske (an American Spencerian) that Eliot "is the greatest woman that has lived on the earth – the female Shakespeare, so to speak" (qtd. in Karl 530; see also Denton 89; Karl 152; Paxton 7; Spencer, *Autobiography* 2: 429–30). Eliot's and Spencer's common developing interest in altruism is paradigmatic of their co-constitutive intellectual influence (Paxton 230–31). Although Spencer was not particularly inclined toward the arts, including literature, he valued her openness to intellectual discussion and came "to respect her serious view of fiction as an art form"; he, in fact, once asked that the London Library remove all novels except Eliot's because he felt they were the "only serious works" (Abel 259–60; Francis 64).

George Eliot's journals demonstrate her long personal and intellectual engagement with Spencer. Her entries involving him are usually almost telegraphic in their brevity, recording Spencer's visits and talks without much detail about what the conversation entailed.[5] Occasionally, she records their subjects as philosophy, her writing, or his work, including his long-planned autobiography (Harris and Johnston 81, 120, 171). Long after their initial publication, however, Eliot notes that she is rereading some of Spencer's major writings, including his *Principles of Psychology* in 1879, demonstrating that her engagement with his work was long-term and cyclical, so that his ideas retained a decades-long salience for Eliot (Harris and Johnston 165, 213).

George Eliot's letters tell a similar story. Spencer makes a fairly frequent appearance in her correspondence as a subject, particularly to her friend Sara Hennell. Throughout the 1850s, Eliot regularly enthuses about Spencer's writings to Hennell. After more than twenty years of acquaintance, Eliot writes of Spencer that she believes herself "indebted to him for much enlargement and clarifying of thought" (*GEL* 6: 163–64). She frequently notes that Spencer's visits are pleasant, he is perpetually cheerful, and his conversation is clever, welcome, stimulating, and enjoyably argumentative (See, for example, *GEL* 2: 22, 29, 405; 4: 30, 57, 235, 489; 6: 420). Although Eliot acknowledges a gulf between Spencer's and her own opinions on "art and classical literature," she notes that "His is a friendship which wears well, because of his truthfulness: that makes amends for <other> many deficits" (*GEL* 3: 469; 4: 489). Her last recorded words on him, two and a half weeks before her death, endorsed his genius: "He has so much teaching which the world needs" (*GEL* 7: 334).

III. Daniel Deronda*'s Spencerian Psychology: Experience Meets Inheritance*

Daniel Deronda offers the opportunity for a Spencerian psychological analysis that, in fact, could be carried out in any one of Eliot's novels. *Daniel Deronda* is a particularly fruitful text to focus on, however, for a number of reasons. First, the novel was composed entirely after Spencer's second edition of *Principles of Psychology* was released in 1870, receiving greater attention and acclaim than the first edition in 1855. The second edition's

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recency and popularity would thus have made Spencer's psychological theory more salient for a popular audience, and her engagement with it would have been timely and recognizable for a contemporaneous readership. Secondly, the novel is particularly psychological and introspective, even for Eliot's oeuvre, as thoughts dominate the plot more than actions. Finally, *Daniel Deronda* is generally considered by critics to be the "capstone" of Eliot's oeuvre, "her final long statement in fiction" and "the final and comprehensive expression of George Eliot's idealism" on a personal, individual, and experimental level (qtd. in Karl 525; Handley ix; and Henry 232; see also Shuttleworth, "Language of Science" 273). *Daniel Deronda* therefore makes an ideal case study for Eliot's lifelong engagement with Spencerian evolutionary ideas, particularly psychology.

Key to understanding the character's motivations and relationships in *Daniel Deronda* is a recognition of their basis in Spencerian psychology.[6] In 1855, Spencer published his *Principles of Psychology*, which proposed a neurally based associationist psychological system that relied on Lamarckian inheritance of acquired characteristics – in this case, such characteristics were mental, or as Spencer puts it, "psychical." As he summarizes his main idea in the "Special Synthesis" section of the book, "Hereditary transmission applies to psychical peculiarities as well as to physical peculiarities. While the modified bodily structure produced by new habits of life is bequeathed to future generations, the modified nervous tendencies produced by such new habits of life are also bequeathed" (*Principles of Psychology* 422). Spencer's major contribution to the field of psychology was to be the first to apply evolutionary principles to it, and so to make it a biological, scientific study – the social science that it is today. Psychology, Spencer claims, is in many ways a master science, and in fact displays phenomena such as evolution and adjustment to internal and external circumstances that "all other sciences" also demonstrate (qtd. in *Principles of Psychology* 67; see also 482).

For Spencer, nervous system firings in response to stimuli form neural pathways, which associate such stimuli with certain circumstances or outcomes; these generate instincts, defined by Spencer as "complex reflex action" that is not substantially differentiated from habits; neural associative pathways also create memories (qtd. in *Principles of Psychology* 539; see also 554 and Francis 84).[7] As Spencer phrases this "doctrine of the association of ideas," "the strength of the tendency which each state of consciousness has to follow any other, depends on the frequency with which the two have been connected in experience," although "Sometimes, indeed, the exceptional character of the external relation becomes the very cause of tenacity in the internal relation. The more astonishing the event – the more utterly it is at variance with the ordinary course of things, the stronger becomes the cohesion between the answering states of consciousness" (*Principles of Psychology* 421, 419, 415). That is, instincts are innate to the species and to social groups, but they can be formed over an individual's lifetime. The more an animal (whether human or nonhuman) repeats certain experiences, the stronger its neural associations become, although if an "exceptional" circumstance occurs, it can also form an uncommonly strong association (*Principles of Psychology* 518–19; see also 531). Such associations manifest themselves as consciousness; not all associations are conscious for Spencer, but there is no element of consciousness that is not composed of acquired or inherited correspondences (*Principles of Psychology* 116). Emotions, rationality, even the human notion of free will are explicable at (and reducible to) this automatic cognitive level (*Principles of Psychology* 570, 607).[8] Furthermore, these associations are inherited as physical traits:

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> It is not simply that a modified form of constitution produced by new habits of life, is bequeathed to future generations; but it is that the modified nervous tendencies produced by such new habits of life, are also bequeathed: and if the new habits of life become permanent, the tendencies become permanent. This is illustrated in every creature respecting which we have the requisite experience, from man downwards. (*Principles of Psychology* 526)

Spencer goes on to argue that "Even in animals of . . . comparatively-advanced organization . . . the differentiation of the psychical from the physical life is but slight"; adaptation to the environment and inheritance of such adaptations occur both physically and mentally, and the latter is nearly impossible to differentiate from a physical process (*Principles of Psychology* 397).

So, while Spencer was hardly the first associationist psychologist, his major contribution to the field was to persuasively demonstrate that the tabula rasa model could be replaced with the notion of acquired instincts, that psychology could be studied as evolutionary because adaptive habitual associations could be inherited through generations. Or to use Spencer's words directly, "mental peculiarities caused by habit become hereditary" as "automatic psychical connexions result from the registration of experiences continued for numberless generations" (*Principles of Psychology* 422, 424). Over time, he sees human evolution as tending globally to the same endpoint of perfect altruism.

Eliot and Lewes both deeply admired Spencer's *Psychology*, seeing it for the conceptual leap forward that it was, writing highly of its evolutionary and associational frameworks, and lending copies to friends. *Daniel Deronda* expresses a similar concern with psychology, which Eliot calls "a strange spiritual chemistry going on within us, so that a lazy stagnation or even a cottony milkiness may be preparing one knows not what biting or explosive material" (269; bk. 4, ch. 28). Like Spencer, Eliot praises psychology as a supreme field of study, though in her case the concern is with exploring what the "chemical process" tells us about the dynamics of the individual human mind and interpersonal interactions rather than with Spencer's concern of mental processes common to humans and nonhuman animals (362; bk. 5, ch. 35). Her final novel is sprinkled with key terms from Spencer's particular brand of associationist evolutionary psychology outlined in *Principles of Psychology*, including "impulse," "habit," "nerves," "reflex," "impression," and "automatic." Eliot provides for the reader such salient examples of reflexive and destructive psychological processes as "The navvy waking from sleep and without malice heaving a stone to crush the life out of his still sleeping comrade . . . [while] lack[ing] the trained motive which makes a character fairly calculable in its actions" (269; bk. 4, ch. 28). It is a striking example, but one that Eliot leaves underexplored. Two of the most in-depth case studies of associationist psychology and heritable mental characteristics in a Spencerian evolutionary vein are of Gwendolen Harleth – whose mental associations and inheritances are ultimately destructive and lead to an evolutionary end-stop – and Daniel Deronda – whose traits are redemptive and promise progress for the future of his family and nation.

i. Gwendolen's Passions and Aversions

GWENDOLEN AND DANIEL ARE CIPHERS to themselves and to those around them because of their lack of knowledge about their ancestries, which in Spencerian psychological terms determines their baseline psychological tendencies. The "hereditary transmission"

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of "psychical peculiarities" is analogous to the inheritance of "bodily structure" and is just as "permanent" and "indissoluble" (*Principles of Psychology* 422). Gwendolen, we are told, is particularly subject to her habitual mental traits, "simply following her antipathy and inclination, confiding in them as she did in the more reflective judgments into which they entered as sap into leafage" (102; bk. 2, ch. 11). Gwendolen has no memory of her father, though she is aware that he came from an upper-class, perhaps aristocratic, family, whose members felt that he had stepped down so much in marrying Gwendolen's mother that they are disinterested in her (17; bk. 1, ch. 3). Gwendolen refuses to ask her mother about her father, or even about her mother's life prior to her second, disastrous marriage, so the characters and readers alike are left uncertain about which of Gwendolen's traits were inherited from each side of the family and which arose from Gwendolen's own life experiences.[9] Remember that for Spencer, "all psychical relations . . . are determined by experiences," either of one's ancestors or of oneself, and "the strength of the tendency which each state of consciousness has to follow any other, depends on the frequency with which the two have been connected in experience" (*Principles of Psychology* 424, 419). We are given some suggestive hints, however, about Gwendolen's inherited characteristics: her maternal grandfather made his fortune in the West Indies (17, 51; bk. 1, ch. 3, 6), and the problematics of being descended from such an imperialist and likely slaveowner are alluded to through the character of Grandcourt, who refers to "the Jamaican negro" as "beastly" in polite conversation and who, the narrator tells us, would have preferred extermination to pacification (279, 507; bk. 4, ch. 29, bk. 6, ch. 48). So it may be Gwendolen's grandfather to whom she owes her frequently cited snake-like quality that is attributed at one point to "a trace of demon ancestry" (55; bk. 1, ch. 7), not to mention her fits of violence that cause her, for example, to kill her sister's canary simply because it irritates her (18; bk. 1, ch. 3). Then again, Gwendolen's mother is so conscious of her daughter's paternal inheritance that she worries that Gwendolen will likewise die from a riding accident (62; bk. 1, ch. 7). Gwendolen is drawn to horses, as her father apparently was, an inclination that could be attributed to a long-standing habit of the upper classes to use horses for fighting and recreation; she says, "I never like my life so well as when I am on horseback, having a great gallop. I think of nothing. I only feel myself strong and happy" (92–93; bk. 2, ch. 11). Gwendolen's desire to participate in the hunt is instinctual but explicitly not developed from her own experience: "The colour, the stir of the field had taken possession of Gwendolen with a strength which was not due to habitual association, for she had never yet ridden after the hounds – only said she would like to do it" (57; bk. 1, ch. 7). Her fearlessness in action, her "inborn energy of egoistic desire," "that sense of superior claims which made a large part of her consciousness," and her determination to have her own way at all costs to others (qtn. from 33, 11; bk. 1, ch. 4, 2) are all reminiscent of Matthew Arnold's presentation of the upper classes (aka the Barbarians) in *Culture and Anarchy* (1867–68), further gesturing toward her mental and emotional inheritance from her father. Spencer makes a similar point, saying that for many people, "there still survive those feelings, quite proper to our remote ancestors, which find their gratification in the destructive activities of the chase and in warfare – feelings which, antisocial as is the conduct they prompt, indirectly cause numerous miseries" (*Principles of Psychology* 282). And because the upper classes would have been more involved in warfare and hunting than other social groups, such inherited mental associations would be strongest in its descendants (*Principles of Psychology* 424). The reader also witnesses miseries resulting from Gwendolen's hunt, especially after her besotted cousin Rex injures himself while trying to keep up with her and

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nearly throws aside his education as a consequence. Her inheritance of upper class paternal associations also explains Gwendolen's comfort with her upward social mobility, which – several other characters observe – makes it seem as though she was born and raised in the ranks of the aristocracy.

If Gwendolen's father is primarily responsible for her inherited mental characteristics, then, Nancy Henry has persuasively argued that her stepfather is to blame for her acquired habitual associations with terror. Henry demonstrates that many of Gwendolen's unusual fears, such as sleeping away from her mother or finding herself alone in a field, are explicable as the result of sexual assault. Henry's suggestion lends a double meaning to the title of the first book, which refers to Gwendolen: "The Spoiled Child."[10] Gwendolen, we are told, is "subject to physical antipathies" (101; bk. 2, ch. 11), as "the life of passion had begun negatively in her" (67; bk. 1, ch.7). Her first reaction to her cousin Rex trying to touch her hand after professing his love for her is to "dart death" from her eyes out of anger and aversion; she "herself could not have foreseen that she should feel in this way," but she "sob[s] bitterly" from overwhelming sorrow after he leaves and tells her mother that she cannot love or stand the touch of anyone else (qtn. From 67; bk. 1, ch. 7; see also 68). Consequently, we see Gwendolen's aversion to physical and emotional intimacy from men, such as when she rebukes Grandcourt for kissing her neck (275–76; bk. 4, ch. 29). Perhaps because of her early sexual trauma, Gwendolen has a "liability . . . to fits of spiritual dread," which are not religious but rather associated with a loss of agency, causing the narrator to call "helpless" "terror" "her native" emotion (51, 52; bk. 1, ch. 6; 247; bk. 3, ch. 26). Gwendolen herself does not understand "these occasional experiences, which seemed like a brief remembered madness, an unexplained exception from her normal life" (51; bk. 1, ch. 6). Under Spencer's psychological principles, this terror would get stronger each time that it is re-experienced because it reinforces the neural pathway; again, "the strength of the tendency which each state of consciousness has to follow any other, depends on the frequency with which the two have been connected in experience" (*Principles of Psychology* 419). This is exactly what we see with the notorious "dead face." When Gwendolen's family moves into their new home, her youngest half-sister opens a hinged panel that reveals "the picture of an upturned dead face, from which an obscure figure seemed to be fleeing with outstretched arms" that causes Gwendolen to shudder and angrily rebuke Isabel for "open[ing] things which were meant to be shut up," before locking the panel and pocketing the key herself (20; bk. 1, ch. 3). During a later tableau vivant performance, the vibrations from a "thunderous chord" struck on the piano cause the panel to open suddenly; the audience is startled, but Gwendolen screams and freezes "like a statue into which a soul of Fear had entered: her pallid lips were parted; her eyes, usually narrowed under their long lashes, were dilated and fixed" (49; bk. 1, ch. 6). Jill Matus notes that "The incident of the panel . . . introduces the novel's exploration of the effects of shock on a particularly susceptible consciousness. If the painting provokes an exaggerated response in the way it springs into view, it is also terrifying because it is a return of something that has already caused Gwendolen fear" (67). Although she tries to suppress this experience from her own memory and from those of her witnesses, Gwendolen never really moves beyond the trauma. The less autonomy she is able to assert in her marriage, the more terror she finds herself experiencing, perhaps in part because of the unavoidable sexual intimacy with her controlling husband. When Gwendolen fantasizes about murdering her husband, her fear is of perpetual guilt, which takes the form of "a white dead face from which she was for ever trying to flee and for ever held back" (577; bk. 7, ch. 54); and

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when Grandcourt finally drowns, Gwendolen witnesses the dead face transferred from art to her imagination to reality, and finds herself mentally incapacitated through the end of the narrative, reflecting "I shall never get away from it" (590; bk. 7, ch. 56). The dead face, then, seems to represent a revenge fantasy on a controlling and sexually exploitative male – first her stepfather, and then her husband – which exerts more control over Gwendolen's consciousness each time the image appears to her internally or externally, as her associations with it are reinforced. She needs Daniel to help her form new associations with her own actions, to teach her how to think in new ways, a role that he is not entirely capable of fulfilling.

Gwendolen's psychological associations and their habitual and inherited sources never become fully conscious for her; even as she begins to recover from the trauma of Grandcourt's drowning at the end of the novel, we do not see her develop in a substantial way toward self-awareness. She hopes that by moving back with her mothers and sisters, she can recover and build a healthy future for herself, but there is no place in Spencer's evolutionary schema for radical growth arising from revisiting old environments to form new associations:

> The elaborateness of these advanced correspondences in which time past, time present, and time future are alike involved, and which have simultaneous reference to sundry places in space, is an elaborateness measured by the number of past impressions compounded with present ones, and of past actions compounded with present ones. (*Principles of Psychology* 373)

Gwendolen seems stuck, psychologically, as she is likewise reproductively. Beer has influentially argued that Gwendolen's childlessness is her triumph over Darwinism, a sign of her opting out of the repressive system of sexual selection (203; bk. 3, ch. 22); in many ways, it can be seen as a Spencerian success, in that it is difficult to imagine a child arising from her union with Grandcourt inheriting any positive mental associations.[11] Ultimately, Gwendolen comes across as a realistic and compelling psychological portrait of a damaged woman increasingly motivated by fear and trapped by poor choices and social strictures, but not a person with an integrated sense of self. Her lack of concern with her maternal and paternal roots, combined with her unplumbed traumas, leave her fragmented and non-agentic in a Spencerian psychological framework – as, in almost all senses, a Spencerian psychological tragedy.

ii. Daniel's Sympathies

ALTHOUGH MANY READERS FIND THEMSELVES more interested in Gwendolen's psychology – which, ironically, becomes increasingly less of a concern for the narrative as it progresses – Graham Handley notes that "Daniel is just as psychologically integrated as Gwendolen" (xviii). I would argue that Daniel is significantly more psychologically integrated as a character, in that he is able to achieve a harmonious sense of self arising from a Spencerian integration of associationist psychology with Lamarckian use-inheritance – of his life experiences with his inherited inclinations. Because he displays characteristics of his grandfather and his father, while still adhering to the principles of his upbringing, Daniel

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defies his grandfather's hope of reproducing himself identically. Daniel thus epitomizes Spencer's claim that "Besides concluding that in no two species are the subjective effects produced by given objective actions absolutely alike, qualitatively and quantitatively; we may conclude that they are absolutely alike in no two individuals of the same species" (*Principles of Psychology* 197).

Daniel's most defining mental association through most of the narrative is with his unknown mother. The idea that he is illegitimate and that his mother might have suffered or still be suffering strikes him when he is an adolescent, "enter[ing] his mind, and . . . chang[ing] the aspect of his habitual feelings" as he "brought such knowledge into any association with his own lot" for the first time (141; bk. 2, ch. 16), giving him "a new sense in relation to all the elements of his life" (142; bk. 2, ch. 16). Thus, he is sensitive to comments on his appearance because he is under the impression that he resembles his mother (158; bk. 2, ch.17) and he rescues Mirah because her attempt at drowning herself "stirred a fibre that lay close to his deepest interest in the fates of women – 'perhaps my mother was like this one'" (162; bk. 2, ch. 17). Otherwise, "Daniel's tastes were altogether in keeping with his nurture" (143; bk. 2, ch. 16). Thus, even when Daniel finds out that he is Jewish, he cannot entirely identify as such, telling his mother, "The effect of my education can never be done away with. The Christian sympathies in which my mind was reared can never die out of me . . . . But I consider it my duty – it is the impulse of my feeling – to identify myself, as far as possible, with my hereditary people, and if I can see any work to be done for them that I can give my soul and hand to, I shall choose to do it" (566; bk. 7, ch. 53). Leonora, probably because of her own life experiences and desire to reject her paternal mental inheritance, is skeptical about Daniel's ability to unify his grandfather's mission with the sense of self that he has developed as an Englishman (570; bk. 7, 53). Before discovering his ancestry, Daniel takes an ambivalent stand on the issue, arguing that "To delight in doing things because our fathers did them is good if it shuts out nothing better; it enlarges the range of affection – and affection is the broadest basis of good in life," but that ultimately age or continuity is not in itself a reason to retain the habits of one's ancestors (357; bk. 5, ch. 35). After discovering that his grandfather's mission to found a Jewish national center corresponds with the experiences that he has recently found so compelling, however, Daniel finally achieves a coherent sense of self and purpose. As Spencer describes such an ideal psychological integration, "if there is a transmission of induced tendencies in the nervous system, it is inferable that all psychical relations whatever, from the necessary to the fortuitous, result from the experiences of the corresponding external relations; and are so brought into harmony with them" (*Principles of Psychology* 424).

Daniel's definition by inherited mental tendencies is subtly underscored throughout the novel, though more heavily emphasized once he meets his mother. That is not to say that he does not initially fight or ignore such inheritances, though. He rejects his uncle Hugo's suggestion that he might become a singer (as he thinks his mother might have been) as surely as he rejects the political career that Hugo himself embraced (since he believes himself to be Hugo's illegitimate son) (143, 155–56; bk. 2, ch. 16). From his childhood onward, the narrator mentions the importance of his "inborn" characteristics, like affection and "lovingness" (145; bk. 2, ch. 16), the same terms his mother Leonora later uses to describe his father's all-consuming traits (541; bk. 7, ch.51). Daniel does, in fact, subscribe to the notion of inherited mental characteristics on a personal and a broad species level; he

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defines his understanding of this Lamarckian notion, repackaged in Spencerian psychology as

> an inherited yearning – the effect of brooding, passionate thoughts in many ancestors – thoughts that seem to have been intensely present in my grandfather. Suppose the stolen offspring of some mountain tribe brought up in a city of the plain, or one with an inherited genius for painting, and born blind – the ancestral life would lie within them as a dim longing for unknown objects and sensations, and the spell-bound habit of their inherited frames would be like a cunningly-wrought musical instrument, never played on, but quivering throughout in uneasy mysterious moanings of its intricate structure that, under the right touch, gives music. Something like that, I think, has been my experience. (642; bk. 8, ch. 63)

This issue is brought to the forefront of the narrative when Daniel meets his mother, Leonora, who tried to circumvent the inheritability of her father's character by having her son raised in England without the knowledge of his ancestry, but who finds over time that despite her lack of "consent" to the process, she is compelled to "obey something tyrannic" (540–41; bk. 7, ch. 51). Troublingly, women's individual agency is ultimately suppressed in the grand historical arc of male heredity. As Daniel expresses it, "Your will was strong, but my grandfather's trust which you accepted and did not fulfil – what you call his yoke – is the expression of something stronger, with deeper, farther-spreading roots, knit into the foundations of sacredness for all men" (568; bk. 7, ch. 53); the male pronoun here seems to be of significance, not just as the referent to humanity so common at the time, but as a reinforcement of a specifically patriarchal process that is cruel but compelling as an explanation for the persistence of evolved personality traits over time and through families.

Although Daniel tries to sympathize with his mother, he fulfills his grandfather's desire to utilize the female generation to reproduce his own ego (544; bk. 7, ch. 51) by identifying his excitement about finally discovering his heritage as a "a quivering imaginative sense of close relation to the grandfather who had been animated by strong impulses and beloved thoughts, which were now perhaps being roused from their slumber within himself" (585; bk. 7, ch. 54). He embraces his grandfather's overpowering sense of the importance of Jewish identity. Sally Shuttleworth notes, although she does not explore at any length, that "Physiologically the Jews represent a cultural and religious unity, a historical continuity that is lacking in fragmented European society," and so provide the perfect Spencerian case study for Eliot ("Language of Science" 287). Although Mordecai insists on sharing a soul with Daniel, Daniel himself only accepts the idea of sharing a "latent" (544; bk. 7, ch. 51) soul with his grandfather (638; bk. 8, ch. 63), which is possible because of the "sensibility" of Daniel's neural "fibre," which would not be feasible for someone of "duller . . . affection" (617; bk. 8, ch. 60). As Spencer puts it, "other things equal, the intensities of feelings vary as the intensities of the correlative nervous actions," so the more sensitive an individual is to nervous system processes, the more deeply and clearly he or she will understand his or her mental life (*Principles of Psychology* 128). Mordecai pushes his vision of spiritual union based on shared inheritance too hard on Daniel, both before and after Daniel discovers his Jewish heritage, and Daniel resists, saying, "what we can't hinder must not make our rule for what we ought to choose. . . . Don't ask me to deny my spiritual parentage, when I am finding the clue of my life in the recognition of my natural parentage" (643; bk. 8, ch. 63). Both men's Jewishness is not enough to unify Mordecai's experiences with

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Daniel's – direct, physiological inheritance is required, as between grandfather and grandson. Daniel's ancestry becomes not just spiritual but neural, as is evident from his references to inheriting an "added soul" (638; bk. 8, ch. 63) and to discovering an "electric chain," nerves having been understood as running on electrical impulses since Luigi Galvani's experiments in the 1780s (617; bk. 8, ch. 60).

Of course, as mentioned above when Daniel says that his education can never be done away with, the inheritance of his ancestral mentality is not all-determining; his own habits and education have made their indelible mark on his psychology, preventing him from "profess[ing] to believe exactly as my fathers have believed," just as his "fathers themselves changed the horizon of their belief and learned of other races" (620; bk. 8, ch. 60). The process of blending habit and inheritance has been going on for ages, and is vital to progress and development (*Principles of Psychology* 424). In Daniel, it is successful in creating a healthy, compelling, and coherent psyche that will likely pass down through generations and that can continue to develop in any number of ways after the close of the narrative. Much of this is due to his own tendency to introspection – to making the subconscious experiential associations of his life conscious – but most of his psychological success, his Spencerian triumph, results from his discovery and interpretation of his mental inheritance and his promising marriage.[12]

iii. Spencerian Psychology as the Lay Theory

GWENDOLEN AND DANIEL ARE, OF COURSE, not the only characters manifesting Spencerian evolutionary psychological principles, both associationist and inherited. The Meyricks are described as unique because of their "streaks of eccentricity" inherited from quirky parents with diverse nationalities (167; bk. 2, ch. 18). The Meyricks also subscribe to the heritability of personal traits, thus implying that Eliot sees Spencer's ideas as common in the lay population; Mrs. Meyrick says that she is convinced that Mirah must have had "a good woman" as a mother: "you may know it by the scoundrel the father is. Where did the child get her goodness from? Wheaten flour has to be accounted for" (190; bk. 3, ch. 20). Mirah herself revels in the thought that her own suffering comes from her inherited place "in the long song of mourning that has been going on through ages and ages" in the Jewish community (183; bk. 3, ch. 20), and although she is not raised with much religious knowledge, she enjoys synagogue "because it brings back to me the same feelings – the feelings I would not part with for anything else in the world," feelings of association with her mother and her people (305; bk. 4, ch. 32). Her brother, Mordecai, has deeply engrained neural pathways, so that even when he is happy to discover his long-lost sister, he experiences

> that peculiar nervous perturbation only known to those whose minds, long and habitually moving with strong impetus in one current, are suddenly compelled into a new or reopened channel. Susceptible people whose strength has been long absorbed by a dominant bias dread an interview that imperiously revives the past as they would dread a threatening illness. Joy may be there, but joy, too, is terrible. (496; bk. 6, ch. 47)

Although Mordecai uses the Cabbalistic doctrine of the rebirth of souls to express a similar concept (461; bk. 6, ch. 43), his notion of souls that are merged across generations to carry knowledge through time and accomplish nationalistic goals is essentially Spencerian

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(425–27; bk. 5, ch. 40; 449, 457–58; bk. 6, ch. 42). Mordecai believes that national heritages are "the inborn half of memory" that "lives in [a people's] veins as a power without understanding" (457; bk. 6, ch. 42). For Daniel and the narrative, however, Mordecai's enthusiasm is slightly misplaced, as Daniel cannot fully inherit a brother-in-law's soul, although he can possess and embrace a grandfather's; Lamarckian use-inheritance of acquired associationist pathways is a biological process, and is ultimately upheld as such by the narrative.

IV. Conclusion: Eliot's Novels as Spencerian Science

THIS ESSAY HAS ONLY HAD THE SPACE to focus on the basics of Spencerian evolutionary psychology as it appeared in *Daniel Deronda*. In the second edition of *Principles of Psychology* and in Spencer's other psychological writings in the 1870s, Eliot and her contemporaries encountered his vision of human psychology evolving toward a more perfect state of sympathy and altruism – the problematics of which Eliot explores and exposes in *Daniel Deronda* – and of the ultimate unknowability of many elements of human consciousness (see part 1 of *First Principles*, "The Unknowable"). This latter statement was Spencer's attempt to reconcile science, which he believed gives humans access to all knowable phenomena, and religion, which he viewed as helping us come to a sense of our own epistemological limitations. A fuller exploration of Spencerian psychology in *Daniel Deronda* would also have to emphasize gender and ethnicity, particularly Jewish identity, in light of Spencer's closely related sociological, anthropological, and ethical systems.

One anecdote of Eliot's early relationship with Spencer stands out as telling of her critical awareness of his methodological flaws, but also of her respect for his idealism. On 29 June 1852, Eliot wrote to Hennell, "I went to Kew yesterday on a scientific expedition with Herbert Spencer, who has all sorts of theories about plants – I should have said a *proof*-hunting expedition. Of course, if the flowers didn't correspond to the theories, we said, '*tant pis pour les fleurs*'" (*GEL* 2: 40). Eliot tends to cast key words or phrases, especially in her letters, in French as "a way of making the situation somewhat arch, even comic," according to at least one biographer (Karl 80 n1). So while it is easy enough to dismiss the subjects that are unaware that they are being studied for not fitting to a preconceived system, as Spencer might have done, it is far harder to maintain an awareness of the problematics of the individual case, as Eliot did in this early experience and continued to do through *Daniel Deronda*. This is one important role for Eliot's literature in the scientific project: as a psychological, individualized, and social study of the many complications of evolutionary theory. As such, her novels were needed as correlatives to Spencer's relentless promotion of evolutionary theory across an unprecedented number of disciplines. Her work thus modifies and limits his own by grounding his grand generalizations in particularities that are relatable to daily life, in individual psychological case studies situated in concrete communities; neither project could have succeeded without the other.

And critics never tire of citing Eliot's experimental methodologies in her novels: as she wrote in a letter to her publisher in 1876, the time of *Daniel Deronda*'s publication, she viewed her writing as "a set of experiments in life – an endeavour to see what our thought and emotion may be capable of – what stores of motive, actual or hinted as possible, give promise of a better after which we must strive" (*GEL* 6: 216–17). This famous statement leads us to the second way Eliot's novels participated in Spencerian scientific discourse: *as*

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science. In private writings and in *The Expression of Emotions in Man and Animals* (1872), Darwin treats fiction's observations as empirically equivalent to anthropological studies, as a social science providing reliable data.[13] Lewes wrote that literature transmits ideas through an entire culture or race at a speed far exceeding that of biological transmission – via Spencerian inheritance of acquired mental characteristics – and operates on the level of conscious associative patterns (Garratt 189–90). For her contemporaneous audience, then, Eliot was practicing Spencerian evolution, just in a form that was available and palatable to her – intellectual rather than biological reproduction.

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NOTES

1. George Levine's *Darwin and the Novelists* (1988) represents the other foundational literary study of Darwin and the Victorian novel. Although both Beer and Levine produced outstanding works that propelled literary studies of evolutionary theory for three decades now, their influence has led critics to overlook the variety of evolutionary theories that were produced in the nineteenth century and that were in conversation with literature. If Darwin is the only evolutionary theorist considered in relation to Victorian culture and literature, then such an analysis is partial, and therefore unable to explain the fuller complexities of a masterpiece like *Daniel Deronda*. Such an approach is akin to trying to write about a J. M. W. Turner painting while only looking at the blue hues. My project contributes to the scholarly movement to uncover the vibrancy and multivocality of Victorian evolutionisms, including but not limited to Darwinism.
2. Although Lamarckianism has never been as trendy as Darwinism for historical and literary critics, Beer notes that "Lamarck's account of evolutionary process is *still* the popular one" (20), while Jordanova observes that "prominent biologists continued to defend Lamarck's biological philosophy of the inheritance of acquired characteristics" well into the mid-twentieth century (111).
3. Graber 70; Haight 115; Karl 150. His preservation of Eliot's letters is particularly noteworthy, given that he destroyed most of his personal correspondence to control how the future perceived him (Francis 329).
4. For Lewes's opinion of Spencer, see Karl 208, 465, 602; and Postlethwaite, *Making It Whole* 165, 178, 190.
5. See, for example, the entry for 25 September 1859: "Went to the Zoological Gardens. Herbert Spencer was waiting for us when we came home. He dined with us and we spent a pleasant evening in chat" (Harris and Johnston 63). Throughout the 1860s, Spencer is frequently mentioned as going for a walk or as a visitor to the Lewes home (Harris and Johnston 101–40).
6. Literary critics tend to overlook the importance of Spencer's *Principles of Psychology* in understanding Eliot's thought and writing, even though, as noted before, the influences between the two were particularly salient for this novel. Instead, Lewes's psychology (which took its cast primarily from Spencer [Karl 280; Postlethwaite, "Eliot and Science" 165–66]), Claude Bernard's, or Alexander Bain's are generally referenced (Anger 122; Gettelman 35–36; Matus 65–66; Shuttleworth, "Language of Science" 283, 290; Shuttleworth, *Nineteenth-Century Science* 18–23, 175–200). Willburn even attributes Eliot's psychological language to mesmerism (275). Postlethwaite ("Eliot and Science" 107) is an important exception, although her essay mentions the importance of Spencer's psychology without analyzing it in any substantial detail. Handley uses Spencerian associationist keyterms in describing the psychological power of *Daniel Deronda*, though he does not attribute them to Spencer's psychological work (see, for example, xiv, xvii). Beer also notes the growing importance of evolutionary psychology

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in the 1870s in relation to the novel, and even notes some Spencerian psychological concepts in the novel, but either attributes such trends to the culture at large or to Darwin's *Descent of Man* (see especially 171, 175, 201, 216).

7. Although Eliot and Spencer lacked the language for "neurons," I use the contemporary term for nerve cells in the brain for ease of explanation to the modern reader and to clearly express the idea that these thinkers were ascribing to without twentieth-century anatomical terminology at their disposal. The term was first used in its modern sense in 1891 ("neuron, n." OED Online. June 2012. Oxford UP. 11 Aug. 2012).
8. As Richards points out, though "rational behavior grew out of stereotyped instinctive acts, Spencer contended the reverse also occurred: rational acts constantly repeated would become instinctive" (*Darwin* 283). Spencer argues against the existence of free will, claiming that it would refute the basic and necessary evolutionary process of adapting to the environment (*Principles of Psychology* 620).
9. Shuttleworth comments that Gwendolen's "lack of hereditary roots is associated with her psychic disunity, her lack of an unquestioned center of value" ("Language of Science" 287).
10. Henry 217, 225–28; see also Herzog, Penner, and Reimer. Matus argues that Gwendolen displays "textbook symptoms of trauma or PTSD (Post-Traumatic Stress Disorder)" at a time when "the concept of trauma as a psychic wound was barely on the horizon" (59).
11. Spencer himself might have chosen to not have children because of his awareness of his parents' flaws as well as his own (Francis, 7, 46, 71–75).
12. Early in the book, Daniel reflects, "I am not sure that I want to be an ancestor. . . . It doesn't seem to me the rarest sort of origination" (138; bk. 2, ch. 15), and for most of the work it seems that he may avoid this participation in the biological evolutionary processes that are necessary for the inheritance of acquired habits that Spencer and Eliot both opted out of by dying childless. In fact, although Daniel marries Mirah in the final chapter, *Daniel Deronda* is unique among Eliot's comedies for the lack of children at the end, replaced instead by a vision of national purpose that is unachieved, as Daniel has not left England to pursue his Zionistic education (Beer 173). The possibility, even likelihood, of children being born to this couple in the future, however, is very strong, so much so that the narrator wishes for them in the wedding scene (693; bk. 8, ch. 70). Daniel's ending is all about potential for surging into the future, as Gwendolen's is about fading into the past.
13. In particular, he cites the work of Scott, Dickens, and Eliot by name (Noble 103–07).

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