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The Embodied Imagination: British Romantic Cognitive Science

by

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Abstract

This dissertation examines the intersection of British Romantic literary and scientific cognitive theory from 1749 to 1818. Asserting that William Wordsworth and Samuel Taylor Coleridge participated in cognitive science debates initiated by Joseph Priestley's popularization of David Hartley's physiological theory of sentience, it argues that the dual lenses of British empiricism and twenty-first-century cognitive science best explicate the poets' theories of imagination. The poets' philosophical positions are often understood as a progression from youthful fascination with empiricism to mature transcendentalism. Examining their work in relationship to the cognitive hypotheses of contemporary scientists—Erasmus Darwin, Humphry Davy, and Tom Wedgwood—this study demonstrates that their theories reconcile materialist and transcendentalist epistemologies. I use a cognitive historicist methodology to examine categories of experience that New Historicist critics have considered in terms of transcendentalism. I argue that both poets and scientists saw transcendental experiences, such as encounters with the sublime, in terms of embodied emotion. Enaction, a twenty-first century cognitive theory, exhibits similar fundamental premises as Romantic hypotheses about the relationship between mind, matter, human beings, and the natural world and the importance of emotion in cognition. This thesis examines parallels between contemporary and Romantic-era cognitive science discourse, helps resolve certain longstanding cruxes in the scholarship on Wordsworth and Coleridge, and brings to light overlooked scientific figures in Romantic culture whose intellectual contributions are important to Romantic literary theory.

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Contents

Abbreviations of Frequently Cited Texts

Thomas Brown

OZ *Observations on the Zoonomia of Erasmus Darwin, M.D. By Thomas Brown, Esq.*, 1798.

Samuel Taylor Coleridge

BL *Biographia Literaria; or Biographical Sketches of My Literary Life and Opinions*. 2 vols. 1817. Ed. James Engell and W. Jackson Bate, 1983.

CL *The Collected Letters of Samuel Taylor Coleridge.* 3 vols. Ed. Earl Leslie Griggs, 1956.

CPW *The Complete Poetical Works of Samuel Taylor Coleridge*. 2 vols. Ed. Ernest Hartley Coleridge, 1957.

DN *Destiny of Nations* in *CPW*.

"FIS" "Fears in Solitude" in *CPW*.

"LTB" "This Lime-Tree Bower My Prison" in *CPW*.

RM *Religious Musings* in *CPW*.

TT *Table Talk*. 2 vols. Ed. Carl Woodring, 1990.

Humphry Davy

CWD *The Collected Works of Sir Humphry Davy*. 19 vols. 1839. Ed. John Davy, 1972.

RI HD Humphry Davy's Manuscript Notebooks held at the Royal Institution of Great Britain.

John Thelwall

AV *Essay, Towards a Definition of Animal Vitality*, 1793.

TP *The Peripatetic*; *or, sketches of the heart, of nature and society; in a series of politico-sentimental journals, in verse and prose, of the eccentric excursions of Sylvanus Theophrastus; supposed to be written by himself*. 3 vols. 1793.

Tom Wedgwood

KU Manuscript Letters held at Keele University.

WM Manuscript Notebooks held at the Wedgwood Museum.

William Wordsworth

"Ex." "Expostulation and Reply" in *PW*.

"Ode" "Ode: Intimations of Immortality" in *PW*.

Prel.	*The Prelude, 1799, 1805, 1850*. Ed. Jonathan Wordsworth, M. H. Abrams, and Stephen Gill, 1979.
Pros.	*Prospectus to the Excursion* in *PW*.
PW	*The Poetical Works of William Wordsworth*. 5 vols. Ed. E. de Selincourt and Helen Darbishire, 1966.
PrW	*The Prose Works of William Wordsworth*. 3 vols. Ed. W.J.B. Owen and Jane Worthington Smyser, 1974.
"TA"	"Tintern Abbey" in in *PW*.
"TT"	"The Tables Turned" in *PW*.

Quotations from poems by Coleridge and Wordsworth that are not mentioned in this table of abbreviations follow the editions listed above, unless otherwise noted.

Note on quotations from manuscripts: Humphry Davy's and Tom Wedgwood's manuscript notebooks contain numerous abbreviations, crossed out words, words or sentences that have been added later, and words that are sometimes difficult to read. For the sake of readability in this text I have silently corrected many of these manuscript quirks. For example, all abbreviations have been written out in full without acknowledging that the original was abbreviated; crossed out text or words have been eliminated; and in cases where the context makes it clear what word was intended, it has been supplied with no note indicating that it was difficult to transcribe. Should this manuscript dissertation ever go into publication, all quotations will be double checked against the original archives to ensure that they were transcribed correctly and that the editorial interpolations are justified.

When working from published notebooks and manuscripts that retain the original manuscript notations, I have also provided silent corrections. Readers who are interested in a particular quotation or argument are encouraged to examine the original publications. These primarily include Coleridge's collected notebooks and letters and Wordsworth's unpublished prose.

> Homogeneity breeds weakness: theoretical blind spots, stale paradigms, an echo-chamber mentality, and cults of personality.
>
> --V. S. Ramachandran

Introduction

This study runs the risk of undertaking the type of critical project that Jerome McGann inveighs against in *The Romantic Ideology* (1983). McGann urges critics not to fall prey to the Romantic ideology, which asserts that certain categories—transcendence, creativity, genius, the aesthetic, the sublime, imagination—defy analysis because they are originary, existing outside the bounds of space and time. The temptation, he claims, and the problem with most Romantic scholarship, is that it "abolishes the distance between its own (present) setting and its (removed) subject matter" by accepting the existence of these ahistorical categories and adopting them as its own (30). In the general scholarly view, these fundamental Romantic concepts are understood in terms of transcendentalist philosophy, which defines them as encounters with a numinous reality that exists separately from the material world. This dissertation, however, interrogates these concepts by examining them within the context of cognitive science discourse, both Romantic and twenty-first-century. It argues that they describe phenomenological experiences that have an embodied, rather than ahistorical significance, which makes them as important to critics in the twenty-first century as they were to the Romantics and to their predecessors. That is, these categories describe vital aspects of human experience that have remained valid not because they escape history, but because they have persisted throughout it.

While encounters with the sublime or transcendence, for example, are not uniquely Romantic, as McGann notes, they are treated by the Romantics in ways that are distinct from previous literary and historical periods and in ways that are similar

to emerging twenty-first-century discussions of them. What makes the handling of these topics particularly “Romantic” (as well as contemporary) is the way in which they are conceived in terms of embodiment. According to Alan Richardson,

> Romanticism involves promoting feeling and emotion at the expense of “mere” reason, preferring organic to mechanistic theories of nature (including human nature) and art, advancing the claims of the body, reassessing the significance of the natural environment, emphasizing sensation and sensibility, . . . and postulating an active and creative mind. (*British* 34)

This definition accurately captures the pressing controversies that concerned not just poets, but also purveyors of science during the Romantic period. If, however, we fail to carefully contextualise the various trends outlined in Richardson's definition we remain stuck in the apparent paradox that McGann claims “has characterized Romanticism from its earliest self-representations” (31). Romanticism, he argues, contradicts itself when its advocates, both within the literary period and in the scholarship that has followed, claim to value the unique and the particular while attempting to synthesise it into a unified whole. This contradiction makes a characterisation of Romanticism difficult if not impossible in McGann's estimation. This paradox becomes easier to understand, however, when we examine the intersection of scientific and literary Romanticism, specifically its poetry and its theories of aesthetics and imagination. The tension between the desire to capture universal truths that apply to all human beings and the celebration of individuality can indeed seem insolubly contradictory. Contextualising the poets’ relationship to British empiricism and its materialist theories of mind helps to resolve this seeming contradiction.

Following the lead of the poets themselves, some critics argue that they rejected British empiricism. Other critics, including McGann, attend to contexts other than the scientific. Both sets of scholars are guided by the common understanding of British empirical materialist theories of mind, which following Locke, Hartley, and Priestley are viewed as entirely passive. Lacking models of materialist theories that posit the mind as active, they assume that the poets' understanding of the active mind necessarily derives from German idealism. Given Coleridge's position in the *Biographia Literia* (1817), many critics assume that British Romanticism is primarily transcendentalist in its philosophical orientation. As a New Historicist, McGann adopts a methodology that is based on the critical assumptions of Karl Marx and Friedrich Engels, who famously critique the "German Ideology" for claiming that ideas develop independently of historical and material conditions. They censure *Naturphilosophie*, its predecessors, and its offshoots for positing that all reality proceeds from the mind, that the world is a projection of thought. Viewed in this light, "the ideology represented through Romantic works is . . . a body of illusions" that portrays itself as existing outside the bounds of history (12). McGann conflates the "Romantic Ideology" with German Idealism, juxtaposing it against the French ideology, which he equates with the Enlightenment tradition. He claims that, where French ideology is "principally analytic . . . and is most notable for its methodological and procedural rigor, . . . [t]he Romantic tradition is principally a synthetic program whose center has been shifted from rational inquiry to imaginative pursuit" (10). The Romantics poets—William Wordsworth and Samuel Taylor Coleridge in particular—are said to disregard political and social problems in favour of a disembodied mental realm. In turning to the imagination, they fail to take material reality into account.

New Historicist critic Marjorie Levinson accuses the poets of attempting to efface historical and political reality with poetic aestheticism. Along with McGann,

she charges Wordsworth with displacing rather than engaging with social reality in "Tintern Abbey." She asserts that the poem "represent[s] a concretely motivated attempt to green an actualized political prospect and to hypostatize the resultant fiction, a product of memory and desire" (15). Looking only to German transcendentalism, it is understandable that New Historicists tend to regard Wordsworth and Coleridge as solipsistic and unconcerned with politics or social change, which are rooted in the material conditions of existence. Following Marx and Engels, the New Historicist approach tends to conflate material reality with issues of economics. Yet, considering Wordsworth's and Coleridge's engagement with British materialist cognitive theory brings a different historical perspective to bear on Romantic culture, one that is an important influence on the poetry and theory produced during the period. British empirical science was very much concerned with material realities and, contrary to the German idealists, saw thought as a material phenomenon.

Any study of Romantic theory (or ideology in McGann's terms) that examines and critiques the ostensibly ahistorical categories of experience that so preoccupied the Romantics must take into account the relationship of these theories to British empiricism. For not only is Romantic thought inflected with a profound respect for and fascination with the sciences, which were rapidly proliferating during the period, but its theories often take scientific discoveries into account (cf. Holmes). Progress was being made in a wide range of areas, including Joseph Priestley's advances in physics, Erasmus Darwin's discoveries in psychobiology, Humphry Davy's experiments in chemistry, and, most important for this study, the theories of embodied cognition produced by all three, as well as by David Hartley, Tom Wedgwood, and John Thelwall. The work produced by Wordsworth and Coleridge not only engages deeply with their hypotheses, but in the case of their theories of

mind and imagination makes important modifications to them. Additionally, the poets advance theories of poetry and social reform that are based on the materialist theories of mind proposed by these men of science. What is sometimes interpreted as social evasion and solipsism is, in part, an attempt to use contemporary scientific theory to solve social ills.

The word Levinson uses to describe Wordsworth's treatment of his memories—"hypostatize"—is apropos (15). Wordsworth does indeed present his thoughts as if they are material, but not because he believes that all reality proceeds from the mind. Rather, he is drawing upon the ground-breaking materialist cognitive scientific theories that were advanced in the mid-to-late-eighteenth century. In the *1800 Preface* to *Lyrical Ballads*, William Wordsworth famously defines poetry as "the spontaneous overflow of powerful feelings" and claims that "it takes its origin from emotion recollected in tranquillity" (*PrW* I: 248).[1] This hypothesis, which posits a necessary relationship between aesthetic experience and emotion, is based on scientific theories of mind that were in circulation during the Romantic period. This early cognitive science argues for a thoroughgoing materialism and regards sentience as an embodied process. Hartley and Priestley, in particular, re-evaluate the body by formulating a physiological account of mental phenomena that posits thought as a material process. In their view, the body is necessary to cognition and all other types of human experiences, including aesthetic experience. Because thought, as a function of sensation, exists on a corporeal level, it has the potential to be physiologically transformative. Furthermore, they emphasize the importance of emotion in the cognitive process by claiming that all sensation is accompanied by experiences of pleasure and pain in which all feeling originates. Poetry stimulates an

[1] All quotations from the *Preface* to the *Lyrical Ballads* are from the 1800 version unless otherwise indicated.

embodied emotional response. Thus poetry or, more broadly, aesthetic experience is quite literally political.

To discover what makes the treatment of certain embodied categories of experience particularly "Romantic," we must situate the discussion of them within the eighteenth- and nineteenth-century cognitive science debates. Until the 2001 publication of Richardson's *British Romanticism and the Science of the Mind*, this discourse has generally been overlooked. Much of the discussion of transcendence, the sublime, creativity, genius, and so forth occurs within the context of the poets' theories of imagination, which I argue participate in the scientific debates about embodied cognition within the British empirical tradition. Examining Wordsworth's and Coleridge's theories of imagination in relationship to scientific theories of mind resolves the paradox identified by McGann. Formulating an "embodied universalism," to use Richardson's phrase, the Romantic poets reject neither particularity nor universality, but embrace both (*British* 151). They find a way to conceptualise the universal so that it encompasses specific and unique instantiations of it.

This dissertation builds on Richardson's work by investigating the relationship between British empiricism and theories of mind and imagination along with other ostensibly ahistorical, ideological categories. I argue against criticism that sees "the discourse of imaginative experience as enacting a flight from the social" by situating it within Romantic cognitive science (Jackson 30). I bring the work of Wordsworth and Coleridge into a historical context that has typically been discounted in favour of "the Kantian or transcendental one which is often preferred" (Lamb 1065). In doing so, I revisit the well-known tale of the "growth of a poet's mind" that so obsessed Wordsworth and Coleridge and include an essential but often omitted character: the body. Many critics have treated the topic of mind and

imagination, but the vast majority has overlooked this crucial component that informs Wordsworth's and Coleridge's theories. This dissertation argues that the theories of these two poets are based on the concept of embodied cognition, which is a central tenet of materialist theories of mind in the Romantic period. Despite their attempts to distance themselves from their early involvement with materialism, their theories of mind and imagination rely on the very assumptions that undergird the materialist hypothesis. That is, implicit in each of their theories is the supposition that cognition is an embodied, physiological process. The "mind with forms . . . beautiful or grand" (*Prel*. I.378) depends upon "Those hallowed and pure motions of the sense" (384).[2] The retreat into the mind identified by New Historicists relies upon the "spectacles and sounds" that are gathered by and stored in the body (*Prel*. I.368).

In establishing a new critical view of these canonical theories of imagination, I address and correct the common scholarly misconception of British empirical theories of mind. According to critical consensus, based on the work of John Locke and David Hartley, the empirical mind is essentially passive, "a lazy Lookeron on an external World" (*CL* II: 709). This characterisation of empiricist theories of mind owes much to Coleridge, who lambasted Hartleyean associationism and its attendant materialism in the *Biographia*. In addition to mocking Hartley's theory of "oscillating ether . . . animal spirits" and "hollow tubes," Coleridge classifies all materialist theories of mind—from Hobbes to "recent dreamers" who believe that "chemical compositions by elective affinity" are the mean of neural transduction—as mechanical philosophy (*BL* I: 101). The main feature of this pseudo-philosophy is that in reducing cognition to material causes, it renders thought a "senseless and passive" process that suspends "will, reason, and judgment" (*BL* I: 111). Coleridge's characterisation of Hartley's and Priestley's associationism is correct in some

[2] All references to *The Prelude* are to the 1799 version, unless otherwise indicated.

respects. These thinkers do see the mind as being subject to the impressions of external objects of sense and, therefore, subject to the Doctrine of Necessity, or mechanical determinism. Yet, in the *Biographia* Coleridge deliberately ignores materialist theories of mind that significantly modify and extend Locke's *tabula rasa* and Hartley's theory of passive association. Though he was familiar with the work of Darwin and Davy, he takes no account of them in his critique of materialist theories of cognition because they disrupt his claim that these hypotheses characterise the mind as wholly passive. Coleridge's view of the empiricist account of mind has become the commonly accepted view, in part, because his characterisation of Locke's, Hartley's, and Priestley theories is correct. Ignoring Darwin and Davy, he effectively obscured their work as important sources for understanding the empirical materialist concept of mind in the Romantic period.

Though passive, Hartley's theory is important because it offers an embodied, physiological account of Locke's system as well as some corrections to it. Recognising the radical potential of Hartley's 1749 *Observations on Man*, Joseph Priestley republished it in 1775 and followed it with his own *Disquisitions on Matter and Spirit* in 1777. These texts not only challenged traditional eighteenth-century hostility toward the body, but they also provided Wordsworth and Coleridge with the basis for their early theories of social reform and embodied poetics. Furthermore, they popularised the embodied theory of mind, bringing it to the attention of the educated reading public, which included other important participants in the discourse on mind, matter, and its relationship to the body. In the hands of several often marginalised Romantic scientists, Hartley's theory took on new dimensions. Darwin, Davy, and Wedgwood used Hartley's theory as a springboard to formulate active accounts of mind that were still based on the materialist hypothesis that cognition is an embodied process.

Until recently, however, Romantic science has been "marginalised [by scholars] because of the common assumption that science was unromantic and therefore anathema to the period" (de Almeida, "Preface" 3). Because of Coleridge's hostility toward British empiricism in the *Biographia* some critics have inappropriately projected C. P. Snow's concept of the two cultures backwards onto the Romantic period. This assumption has led to an inaccurate understanding of the poets' relationship to the rapidly developing hard sciences. While the split between the arts and sciences was indeed gradually occurring during the period that this dissertation covers—approximately 1749 to 1818—science and poetry were still considered joint ventures in the search for truth and the expansion of knowledge.

Contrary to the usual scholarly story of Wordsworth, Coleridge, and British empiricism, this dissertation argues that each poet, in his own way, formulates a theory of imagination that mediates between materialist and transcendentalist theories of mind. In the standard account, two young, enthusiastic, and politically motivated poets are drawn to the materialist theories of certain British (and French) empiricists because of their shared egalitarian politics and social connections. As their political fervour wanes, however, they realise the mechanistic and pantheistic implications of these materialist theories, an insight that happens to coincide with their introduction to Christian or German transcendentalism, depending on the poet. Thus, they reject British empirical philosophy for a loftier and more active account of mind. This narrative of philosophical growth and progression often does not realise that British empiricism during the Romantic period was engaged in a heated debate about the nature of mind and its relationship to the body. Even those critics who acknowledge the influence of the sciences on the poets do not see that discussions of biology or chemistry also consider questions of cognition.

The scientists whose work the poets read and with whom they formed friendships were formulating materialist theories of mind that addressed many of their "Romantic" interests and concerns. Furthermore, neither proponents of the narrative of philosophical progression nor scholars who consider the impact of British empiricism on the poets' work see Wordsworth and Coleridge as active participants in this cognitive science debate. Instead, both types of scholars often accept the narrative of intellectual maturation in which the poets abandon British empirical philosophy. Certain critics even deem it "undoubtedly one of the most provincial of all the traditions" (McFarland 169). In this view, the poets' theories of mind and imagination not only eschew empirical materialism, but are also thought to be more sophisticated than any model materialism could offer.

Part of the problem with this approach is that its supporters have trouble accounting for the contradictions that mark both poets' bodies of work. Wordsworth and Coleridge incorporate the language of transcendentalism and empiricism into their systems and, in my view, this does not signal confusion or ambiguity, but is an effort to produce a theory that accounts for a mind that is both active and creative, but also embedded in the natural world. The poets were at pains to formulate theories that took the findings of empirical science into account, but also captured the phenomenological experience of creativity, transcendence, and the sublime. For both men, this project involved refiguring the relationship between the mind and nature, or the subject and the object, in a way that can best be understood as enactive.

Enaction is a cognitive theory that was formulated in the late twentieth century and continues to be developed by cognitive theorists in the twenty-first century. While I hope to avoid the ideological fallacy censured by McGann, I do reduce the distance between the Romantic period and the current one by drawing

on contemporary cognitive theory to help elucidate the theories of mind articulated by Wordsworth, Coleridge, and their scientific colleagues. In doing so, I offer a new critical methodology that helps us to better understand these theories and solves certain long standing problems in the scholarship on Wordsworth and Coleridge. Inspired by Richardson's work, which argues for a cognitive historical approach to literary studies, I adopt a framework that has hitherto been unavailable to Romantic scholars. My methodology combines cognitive historicism with enaction. While the details of what the enactive theory entails are provided in the chapters that follow, a brief overview of what makes it useful as a critical methodology will be helpful here.

Formulated in the late 1990s by Francisco Varela, Evan Thompson, and Eleanor Rosch, the enactive view of cognition attempts to mediate between structuralist and post-structuralist epistemologies by drawing upon the significant contributions of each and discarding their excesses. In other words, it privileges neither the object nor the subject, but, like the poets discussed in this dissertation, offers a reconfigured relationship between the two based on the concept of mutual co-dependence. One significant influence on enaction is the work of psychologist J. J. Gibson, whose ecological approach to perception called traditional theories into question. In the 1950s, Gibson argued that the visual perception of motion had to be studied and understood in relationship to movement. The accepted theories only considered "phenomena that occur when an observer is stationary" (Greeno 336). Gibson claimed that this approach overlooks one of the most significant aspects of perception, that it often provides information about the types of actions an organism can and should take within a particular environmental milieu. Coining the term "affordance," Gibson defines perception in terms of the possibilities for action. Again, this emphasises the percipients', or subjects', active relationship to the external world. The concept of affordances asserts that interactions involving an

organism with an environment are enabled by characteristics or features of both.[3] One important implication of this theory of perception is that the subject and the object are mutually constituted. In this view, neither subject nor object exists as a conceptual entity in the absence of the other. Instead, they mutually specify and constitute each other.

With respect to the production of knowledge, enaction rejects both structuralist and post-structuralist accounts. Where structuralism claims that knowledge is located in the object, waiting to be perceived and apprehended by the subject, post-structuralism asserts that all knowledge is socially constructed, a product of the subject, which imposes its understanding on the object. According to enaction, neither of these accounts is correct because knowledge emerges from the interaction of the subject and the object. It exists in neither as an absolute, but is coproduced by the two ontological entities known as subject and object. Responding to and challenging prevailing models that see perception and cognition primarily as a reaction to external stimuli, enaction claims that cognition occurs and knowledge is produced as an organism acts upon its environment. Furthermore, it emphasises embodied cognition, or the role of the whole body in mental processes. This approach has important implications for phenomenological categories such as self, agency, and volition, which have been dismissed by post-structuralism as illusory.

The details about how knowledge is coproduced and how that affects the phenomenological categories under discussion are elucidated in the body of this dissertation. For now, it is enough to note that with this approach I hope to accomplish three goals. First, I hope to make sense of some longstanding problems that have confounded scholars of Wordsworth and Coleridge. In particular, I address

[3] For more on the concept of affordances, see J. J. Gibson, "The Theory of Affordances" in *The Ecological Approach to Visual Perception* (Lawrence Erlbaum Associates, Inc., 1986), pp. 127-143 (originally published in 1979).

the ostensibly contradictory characterisations of the mind in their work; the relationship between the subject and the object; and its corollary issue, the location of knowledge and agency. Drawing on the language of empiricism as well as transcendentalism, the poets' depiction of mind in their early poems is often seen as contradicting its portrayal in their later work, which is taken as the mature formulations of their theories of mind and imagination. Yet, because this mixed language can be found throughout many of their poems, prefaces, and discussions of imagination, it has been difficult to reconcile these contradictory depictions of mind with what they say about the relationship between nature and human beings. Critics tend to see a progression in both poets' work in which Wordsworth and Coleridge initially locate agency and knowledge in the external world during their early empirical phase. Then as they move toward transcendentalism, they locate it in the human mind. Yet, because materialist and transcendentalist concepts are present in the earlier and later work, this interpretation still leaves the problem of what to make of this seeming contradiction. It is this problem that I attempt to resolve.

Second, I hope to demonstrate that, contrary to the New Historicist argument, certain Romantic theories do indeed have transhistorical significance, particularly their treatment of important phenomenological categories that have generally been interpreted in terms of transcendentalism. Third, in keeping with cognitive historicism, I seek to avoid polarising culture and biology by recognising that biological structures inform cultural constructions just as much as culture informs biology. I respond to post-structuralist claims that "the body is primarily, if not entirely, a linguistic and discursive construction" (Hayles, "Informatics" 147). According to post-structuralist theory, "the body is not a 'being,' but a variable boundary, a surface whose permeability is politically regulated, a signifying practice within a cultural field" (Butler 139). Some theorists such as Michel Foucault argue

that the body (as opposed to the mind) is the *tabula rasa* that is disciplined, punished, and inscribed. In this view, the body in and of itself is nothing but an object to be culturally constructed. It imposes no limits and makes no contribution to the ways in which it can be understood at the cultural level. Other theorists, such as Judith Butler, claim that it exists as a discursive formation that cannot be experienced or known outside of language. In this view, the body can never be experienced directly. It is always mediated by language and can only be known through linguistic representation.

The problem with the post-structuralist approach is that it overlooks two important but very real factors. First, it ignores biology, which offers certain constraints and affordances that shape our cultural understandings of the body. Second, it ignores experiences of the body that are not mediated by language. While biology is not the sole determinant of embodied cultural reality, it does impose certain limitations on how bodies can be interpreted and understood. For example, no matter how much we might desire to overcome certain biological constraints, all of us require a minimal amount of food, water, sleep, and other basic necessities to survive. Perform as we might, we cannot, as of yet, get around these biological realities. Furthermore, there are in fact embodied experiences that precede discursive mediation. An example is Eugene Gendlin's notion of the felt sense, a deeply embodied sensation that occurs prior to linguistic articulation. It is “how we feel *our bodies from the inside*” (Gendlin 22). Biological necessity and embodied experience provide limitations and opportunities that help define cultural constructions of bodily categories and this is where cognitive historicism comes into the picture. As a theory, it recognises and seeks to account for the “large and undeniable amount of coherence among various accounts of the world” (Richardson, *Neural* 4). As a methodological approach, it acknowledges the existence of both—

biology and culture—and attempts to understand one in terms of the other. Enaction, in particular, eschews the dichotomy between objectivist realism, on the one hand, and cultural relativism, on the other. It recognises the deeply embodied nature of human cognition and seeks to account for human experience in terms of the biological and environmental conditions that give rise to certain cultural expressions and formations.

In employing such an approach, I take seriously the Romantic poets' claims about emotion, the sublime, and other transcendent experiences that seem to offer unmediated experiences of reality in which the pure mind frees itself from the corrupting influence of the bodily senses and makes contact with an absolute reality that is unsullied by material constraints. In recent years, scholars have devalued these sorts of encounters because they assert categories of experiences that ostensibly exist outside of history. They stake a claim for experiences that are beyond the boundaries of discourse. According to Marjorie Levinson,

> Romantic transcendence is a bit of a white elephant. One wants to find a use for it. I believe that the way we do this today (which may not be tomorrow's way), is to refuse the transcendence until such time as we can trace its source and explain its character. (57)

This study offers "tomorrow's way" by examining these experiences not solely in terms of transcendentalist philosophy, but also in terms of embodiment.

While post-structuralist claims about the body provided some of the inspiration for this study, little post-structuralist theory will be found in the pages that follow. Instead, I examine Romantic theories of cognition, language, transcendence and so forth from a historical perspective. That is, I situate these theories within the contexts in which they were produced. Enactive theory helps

make sense of them from a cognitive historicist perspective. That is, it not only helps explicate the theories under consideration, it also points to persistent facets of these theories that make them important to multiple historical periods. Applying enaction to them is not, however, merely the retroactive imposition of a contemporary view on to the past, for the enactive view of cognition has precedents in Romantic cognitive science.

Looking to theories of mind that were formulated by British empiricists, I show that they provide a strong foundation for the poets' theories. Furthermore, two influences in particular provide eighteenth-century models of enactive cognition. In the case of Wordsworth, this influence was French rather than English. Baron d'Holbach's *System of Nature* (1770) provides a model for Wordsworth's understanding of the relationship between human beings and the natural world. In conjunction with the British theories he encountered in his school days, through Coleridge, and in his relationships with Davy and Wedgwood, d'Holbach enabled him to propose a theory of mind that places the subject and object in a mutually constitutive relationship. Coleridge, on the other hand, had a British model. Along with other empiricist theories with which he was familiar, John Thelwall's *An Essay, Towards a Definition of Animal Vitality* (1793) gave him a way to think about physiological organisation and its relationship to cognition that mitigates some of the problems in transcendentalism. He, too, formulates a theory that sees knowledge of the absolute as a product of the interaction between the subject and the object. In contemporary terms, both these poets' theories are enactive.

My final goal—to demonstrate that Romantic categories of experience persist throughout history—involves the relationship between twenty-first-century and Romantic-era cognitive science. I argue that both sets of discourse have striking resonances and parallels, despite vast differences in the actual scientific

explanations. Late twentieth- and twenty-first-century cognitive science exhibits many of the same preoccupations and concerns as late eighteenth- and early nineteenth-century cognitive science. Proponents of enaction are interested in addressing the phenomenological mind as they formulate scientific explanations of embodied cognition. Contemporary cognitive scientific discourse explains cognition in ways that are very similar to Romantic articulations. An examination of their points of intersections and commonalities suggests a number of fruitful areas of research involving Romantic theories and contemporary cognitive scientific methodologies.

This dissertation examines a variety of texts and theories from the Romantic period—both published and unpublished. It also deploys an array of enactive and embodied theories of cognition, the details of which are provided in discussions of various Romantic hypotheses as a way to help elucidate their theories in modern terms. In a work of this scope, which draws on theories old and new that at times deploy a specialized vocabulary, it may be useful to establish some terminology before sending the reader into the fray. Tom Wedgwood expresses this intention aptly: "As no precise sense has been generally agreed upon for the different terms enumerated in the text, I must endeavor to fix upon the senses most generally adopted & rigorously to adhere to them throughout" (WM E40-28452 19v). In the pages that follow, I refer to the "Romantic cognitive science debates" or "Romantic cognitive science," where scholars such as Richardson and Jackson use the term "science of the mind." I have deliberately broken from convention because I treat a subset of the discourse on Romantic brain science that is more accurately denominated cognitive science. In its current usage, the phrase refers to the multidisciplinary study of the mind and its physiological processes. This project is precisely the undertaking in which the Romantic participants in this discourse—both scientists and poets—were engaged. While it may seem anachronistic—after all

none of the figures discussed describe their subject in this way—it does accurately carve out the scope of this study. Romantic cognitive science was interested not only in the study of the mind, but how it relates to larger concerns such as the relationship between matter and spirit, religious and transcendent experiences, language, the production of knowledge, the relationship between human beings and the natural world, and even the origins of human culture.

Another anachronistic term is "scientist" or "Romantic scientist." This word was not in use during the period covered by this dissertation. It was, however, adopted during the Romantic period in 1834, when it was coined by William Whewell at Coleridge's request (cf. Snyder). In 1833, at a meeting to decide what its members should call themselves, Coleridge "stood up in Cambridge to forbid the British Association for the Advancement of Science the use of 'philosopher' to describe any student of the material world" (Levere 73). As the term "natural philosopher" was no longer widely in use, proponents of the empirical method wanted to find a name to describe people who use the scientific methodology in order to generate positive knowledge about the world. While "men of science" was in use, along with other terms such as "cultivators of science" and "votaries of science," the term has gendered implications that I wish to avoid (Barton 80-81). While this dissertation considers men of science, there were women of science active during this time frame as well.[4] In order to avoid the implication that only men practiced science during the Romantic period, I use the term "scientist."

Other commonly used terms that could cause confusion are "sensation," "perception," "feeling," "emotion," and "cognition." Sensation refers to the

[4] See Patricia Fara, *Pandora's Breeches: Women, Science, and Power in the Enlightenment* (2004) and Mary R. S. Creese, *Ladies in the Laboratory?: American and British Women in Science, 1800-1900: A Survey of Their Contributions to Research* (1998). It should also be noted that women such as Anna Barbauld, Joanna Baillie, and Maria Edgeworth were interested and engaged in scientific enquiry.

stimulation of an organ of sense—either external or internal—and the physiological response produced. Sensations are "the motions of the irritable fibre communicated to the perceptive matter" (RI HD/13/e 15). That is, they are the raw data that are gathered by the sensory apparatus and transmitted to the nervous system. Thus, as Wedgwood suggests, "perhaps it wou'd be best to use the term *Sensation* for all irritations of sense" (WM E40-28452 4v). "Perception," on the other hand, is "the means by which our ideas are acquired" (RI HD/13/e 96); it is the process by which sensation is transformed into percepts. While perception is often conceived of in terms of conscious awareness of sensation, that is, "*the consciousness of the operation of external objects upon the ordinary senses*" (WM E40-28452 19v), Romantic cognitive science challenges this notion. As we shall see in the chapter on Wordsworth, Romantic cognitive science suggests that percepts can be formed unconsciously as well as consciously. In enactive theory, perception is seen as an active process in which "the perception of objects and space is based on a person's anticipation of the sensory consequences of actions that could be performed in a given situation" (Gibbs, *Cognitive* 69). In this view, the world is understood in terms of environmental affordances and opportunities for action. In either case, it indicates that knowledge of the external world and of one's self results from sensation.

Sensation, according to materialist theories of cognition, is always accompanied by feeling. "Feeling," however, has two denotations. In the first definition, it can refer to "experiences such as touch as when we appreciate the shape or texture of an object;" in the second, it refers to "some variant of the experience of pain or pleasure as it occurs in emotions and related phenomena" (Damasio, *Spinoza* 3). What is interesting about feeling in Romantic theories is that the first definition of the word almost always leads to the second. That is, the experiences of sensation always have an emotional valence. To distinguish between

the two denotations of the term, I refer to sensory-feeling and emotional-feeling when it might not be clear which definition I mean or when the terms are being used proximally.

Regarding the difference between feeling and emotion, Ralph Ellis defines "feeling" as the "conscious or preconscious registering of the affective quality of an emotion" (17).[5] "Emotion," on the other hand, is "a barometer of the body's dynamical activity" that is both part of an organism's hard-wiring and can be experienced on an unconscious level (44). In very simple terms, feeling is the conscious awareness of emotion, while emotion refers to the bodily states that occur in response to stimuli. The problem with this basic definition, however, is that it gives the erroneous impression that emotion is always a response, whereas in the Romantic and enactive views, it is an active state that initiates consciousness and awareness of certain aspects of the environment. Emotion, then, is more properly understood as those biochemical processes that alert us to the conditions of our environment and how they are affecting us. It tells us when our attempts to achieve our aims are being thwarted or assisted. Historically it has been understood as any strong mental agitation—whether happy or sad. Until the eighteenth century emotion was distinguished from passion, which was considered a strong agitation of the body. As body and mind were conflated in the eighteenth-century and in Romantic cognitive science, the terms became somewhat more interchangeable. This twenty-first-century definition is consistent with the way in which the term was used historically in the Romantic cognitive science debates.

Cognition has typically been defined as an act of knowing that is discrete from other mental phenomena, such as volition or feeling. In recent years, it has

[5] Ellis notes that "'preconscious' refers to process able to quickly become conscious," which is quite different than unconscious since it implies eventual awareness of the felt quality of a given emotion (17).

been defined in various ways, but the most common has been the manipulation of symbols and the representation of the external world on an internal, mental level. I use the term more broadly, in keeping with enactive research, which has revealed that factors such as emotion are also involved in cognitive processes. Thus, cognition, in my usage, refers to the entire range of mental events that occur in the production of knowledge that helps organisms to negotiate their environments. It also includes phenomenological aspects of cognition that have been ignored by cognitive scientists until quite recently. Along similar lines, I distinguish between cognitive science more generally and cognitivism in particular. Cognitive science is a field with competing theories of cognition and cognitivism is but one of these theories. They are discrete terms and movements even though the cognitivist hypothesis, which views cognition primarily in terms of logical computations, has dominated the field until quite recently.

Clearly not all cognitive scientists are cognitivists, but unless theorists specifically denominate themselves as enactionist or as proponents of embodied cognition, we can assume that they have adopted a primarily cognitivist approach. That is, they adhere to one or more of the fundamental premises on which cognitivism is founded: that thought is most properly considered in terms of symbol manipulation and representation; that cognition refers to specific brain states and events and only marginally involves the rest of the body; and that consciousness is an epiphenomenon and emotion is best left inside a black box. Antonio Damasio, whose work on emotion informs this study, falls into this category. While he breaks with cognitive presumptions about emotion and consciousness, his work takes the other assumptions for granted. Cognitivist scientists in this category—which includes Patricia Churchland, Michael Gazzaniga, and V. S. Ramachandran—have been called "behavioural neurologists" by Alan Richardson and Edward Slingerland (see

Richardson, “Cognitive,” 544-56, and Slingerland). It is my hope that the brief history of modern cognitive science, including the emergence of enaction, in the pages that follow will clarify this terminology. Readers interested in a concise history that traces the three major strands of recent cognitive theory (cognitivism, connectionism or emergence, and enaction) are encouraged to consult *The Embodied Mind* (1991) by Francisco Varela, Evan Thompson, and Eleanor Rosch or N. Katherine Hayles’ *How We Became Posthuman* (1999), which provides another good, though less condensed, overview. In general, definitions and terms are clarified and explained further in the course of my argument and hopefully they have been made sufficiently clear for my readers.

My argument follows a loosely chronological trajectory that starts with the theories of David Hartley and Joseph Priestley and moves on to Erasmus Darwin, Humphry Davy, and Tom Wedgwood. Next it discusses Wordsworth’s and Coleridge’s theories of mind and concludes with an examination of the contemporary cognitive science debates alongside their Romantic counterparts. In the first chapter, I examine the materialist theories of mind advanced by Hartley and Priestley during the late eighteenth century which, I argue, launched the British Romantic cognitive science debates. In addition to an overview of each of their embodied theories of cognition, I consider the challenge they make to Neoplatonic and Christian hostility toward the body and the natural world, which represents the predominant attitude in eighteenth-century Britain. As theological scientists, Hartley and Priestley saw the body not as a hindrance to the pursuit of truth, but as necessary to cognition as well as to salvation. They positively revalue the body in ways that had long term implications within the Romantic period and beyond. I also situate their work within the contexts of theology and the development of empirical science. The epistemological implications of their work, which derives from their religious beliefs,

provide a commentary on the evolution of empirical science during the late eighteenth and nineteenth centuries. Furthermore, both Hartley and Priestley overturn Aristotle's *scala naturae*, which considers human beings as superior to rather than a part of nature. Their belief that nature contains divine truths, along with Hartley's taxonomy of intellectual development and his theory of philosophical language, influenced both Coleridge's and Wordsworth's theories of social reform.

This chapter also examines Coleridge's discussions of Pantisocracy in his early letters. I argue that materialist cognitive science provides him with the framework for this social experiment. I also look at the poetic and social theory outlined in Wordsworth's *1800 Preface* to the *Lyrical Ballads* and the fragmentary "Essay on Morals" (ca. 1798). With respect to the poets' early theories, I argue with Noel Jackson that "assertions for the social efficacy of aesthetic response grew most clearly out of an empiricist intellectual context in which sense experience was regarded as the most significant basis of the individual's mental and moral life" (4). Sensory experience is the foundation from which all feeling springs and according to Coleridge and Wordsworth, feeling is more important to moral persuasion than reason. This idea makes sense when we look at it in conjunction with Hartley's explanation of how change occurs on a physiological level. The poets believed that change occurs ontogenetically and that as more people move toward moral sense, the cumulative social effect would create phylogenetic change. Yet, where Jackson aims "to show how the normative claims often associated with canonical Romantic poetry . . . are both asserted and destabilized in Romanticism's 'language of sense'" (16), I show how these claims are based on scientific theories of embodied cognition. The turn to poetry was not a flight from reality, but a conscious attempt to alter the course of society in light of the failed French Revolution.

Where the first chapter looks at the positive aspects of Hartley's and Priestley's theories, the second chapter examines the flaws. While proposing a materialist model of cognition was a bold move, Hartley was limited by a Newtonian worldview. Consequently, his theory subjects cognition to the laws of physics and posits a mind that is a passive register of experience. It also subjects human beings to the Doctrine of Necessity. According to this doctrine, human beings are circumscribed by external circumstances. Constrained by association, we have no ability to react differently when faced with familiar situations because we lack free will. Hartley's theory represents the epitome of passive British empirical theories of mind and many scholars, especially when assessing Wordsworth's and Coleridge's relationship to British empiricism, stop here. In the Romantic period, however, Hartley's and Priestley's theories were significantly modified. Erasmus Darwin, Humphry Davy, and Tom Wedgwood each tried to rectify the flaws in Hartley's theory by advancing materialist theories of cognition that account for the phenomenological sense that thought is an active process over which we have some control.

Recognising the problems with Newtonian physiology, Darwin formulates a theory of cognition that distinguishes between animate and inanimate matter. His most significant contribution to Romantic culture is the paradigm shift he instigated away from Enlightenment mechanism to organicism. He also, however, offers theories of language and culture that reveal the importance of emotion to individual development and the formation of society. Along with Davy and Wedgwood, he shows that the Romantic preoccupation with feeling was not confined just to the poets. *Zoonomia, or the Laws of Organic Life* (1794) outlines a comprehensive theory of life that includes an organic account of cognition that inspired a second wave of cognitive science. While Davy's work on cognition remains largely unpublished, he

too contributes a materialist theory of the active mind.[6] His primary concerns are creativity, genius, and transcendent experiences, which he accounts for in terms of his research in chemistry. Davy's work is particularly exciting because in arguing against the existence of a transcendental realm that serves as the repository for abstract ideas—a common dualist argument—he offers a materialist account of transcendent experiences, such as encounters with the sublime or the feeling of athanasy. He, too, highlights the importance of emotion in these types of experiences and its importance to creativity and genius. Wedgwood, whose work is also unpublished, emphasises feeling as well.[7] He attempts to account for the subjectivity of cognitive experience through the mechanism of association. His consideration of time prefigures contemporary accounts of embodied language. He also argues that association is driven by emotion and participates in the larger cultural movement toward pleasure and happiness as the primary objects of human society.

The theories of each of these men anticipate and can often be understood in terms of contemporary cognitive theory, which in many respects validates their assumptions even as it corrects their science. Their work also had an impact on Wordsworth's and Coleridge's theories of mind and imagination. While this chapter does, to an extent, examine the influence of this work on the poets, its main purpose is to explicate the theories of Darwin, Davy, and Wedgwood in order to correct the common critical misunderstanding of British empirical theories of mind. This chapter sets the stage for the more detailed analyses of Wordsworth's and Coleridge's theories in the following two chapters by bringing forward new information that has not yet been considered in discussions of Romantic theories of imagination.

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[6] Davy's notebooks are available at the Royal Institution archives in London, where I was fortunate to examine them.

[7] I reviewed Wedgwood's private notebooks and letters at the Wedgwood Museum archives located Barlaston, Staffordshire. Other materials are held at Keele University in Staffordshire.

Chapters Three and Four interrogate the theories of mind and imagination produced by William Wordsworth and Samuel Taylor Coleridge, respectively. I argue that these poets were active participants in the cognitive science debates and that their theories are best understood within this context. In these chapters I use the enactive lens to explicate each poet's theory of mind and its relationship to empirical materialist theories. The third chapter is devoted to Wordsworth's theory as it was expressed in his early poetry, including the 1799 and 1805 versions of *The Prelude* and the later *1815 Preface*. This chapter examines the critical tradition that discusses Wordsworth's philosophy, particularly as it relates to empiricism and transcendentalism. A more accurate understanding of British empirical cognitive science allows us to better understand Wordsworth's theory of mind. Analysing texts such as "Tintern Abbey" and *The Prelude* of 1799, I argue that Wordsworth's concept of mind is essentially materialist because he envisions cognition in terms of embodiment. Both of these poems propose a mutually co-dependent relationship between human beings and the natural world that is reminiscent of enaction. This relationship between the mind and the world depolarises the subject and the object. My reading of the poetry solves certain critical dilemmas regarding the location of agency, creativity, and knowledge in Wordsworth's theory of imagination.

Furthermore, I argue that not only does Wordsworth draw on materialist assumptions, but that he proposes a model of an active mind that is more radical than that of his influences. Yet, this theory cannot be considered transcendentalist because of the relationship it posits between the subject and the object. Wordsworth's theories of mind and imagination are most appropriately viewed as enactive. Once we understand the mutually co-dependent relationship between the subject and the object, we are able to understand the contradictory language in *The Prelude* of 1805, particularly the passages that treat the imagination in Books VI and

XIII. In my analysis of these passages, I argue that Wordsworth does not reject materialist accounts of mind, but modifies them in ways that are similar to other second wave cognitive theorists. This chapter provides a theoretical outline of the enactive theory of cognition, including the model provided by d'Holbach. It also traces Wordsworth's concept of imagination from the 1800 edition of *Lyrical Ballads* to the more elaborate account in the *1815 Preface*. I show how, despite an influx of transcendentalist language, his concept of imagination retains significant materialist elements.

Chapter Four considers Coleridge's theory of cognition and argues that it too contains a combination of materialist and transcendentalist language and concepts that show him trying to mediate the two approaches. Contrary to the claims of critics who argue that Coleridge's rejection of Hartley's and Priestley's materialism was final and that his interest in science was a passing phase, I assert that Coleridge was driven to formulate a theory that posits a free and unconditioned subject that also takes into account the advances of British empirical science. This chapter examines the fragmented, digressive, and in many ways unsatisfying, account of imagination published in the *Biographia*. To make sense of his theory, including what to make of the purloined passages from Schelling, I look to supplementary material such as the early poetry, unpublished notebook entries, and his British empirical influences. This chapter examines the influence of John Thelwall's work on the relationship between life, sentience, and physiological organisation. I look to the early long poems, *Religious Musings* (1796) and *Destiny of Nations* (composed in 1796), which set up the theoretical parameters that define Coleridge's theory of mind and imagination throughout his career. Coleridge's theory is largely concerned with the relationship between the subject, the object, and God. While transcendentalism gave him a sophisticated language with which to articulate this problem, in fact, the basic terms

of this relationship are contained within these early poems. By considering them in conjunction with the abstruse discussion of subject-object relations in the *Biographia*, we see that in Coleridge's view knowledge of the absolute is produced by the interaction of the unconditioned subject with the conditioned object. The philosophical position espoused by enaction helps us to understand what Coleridge means when he reiterates Schelling's assertion that knowledge involves the coalescence of the subject and the object.

The early poems also point to Coleridge's interest in organisation and the role it plays in cognition. His discussion of the relationship between organisation and sentience reveals the influence of materialism. Thelwall's 1793 essay on animal vitality sheds light on this aspect of Coleridge's theory of mind. Coleridge was also obsessed with self-consciousness and its role in cognitive processes, including imagination. Again, enaction helps us to understand how the capacity for self-consciousness served as an anchor for Coleridge's concept of an autonomous and unified self. Finally, I argue that Coleridge posits a theory of embodied imagination in which the creative imagination enables the subject to know God through the object. The concept of the esemplastic imagination, though sometimes attributed to Schelling, is present in Coleridge's early poetry. Looking at these other materials alongside of the discussion in the *Biographia* gives us greater insight into Coleridge's theory of mind and its indebtedness to materialist theories despite his disavowal of British empiricism.

In the final chapter, I examine the parallels between cognitive science then and now by attending to their theoretical similarities and to the cultural contexts that make them possible. After a brief overview of the history of cognitive science from the Romantic period through the twentieth century, I examine the topics that Romantic scientists and contemporary enactionists address and the problems to

which they respond. These issues include mechanistic accounts of mind that fail to attend to the phenomenology of cognition; questions of autonomy, agency, and biological determinism; the unified sense of self; and, finally, consciousness, emotion, and the role of the body in cognition. In both periods, the debates centre on these primary issues. While it is always possible to point to parallels between periods, I address certain cultural similarities between the late eighteenth/early nineteenth centuries and the late twentieth/early twenty-first centuries. The issues raised by both sets of discourse point to issues that are important in both periods, perhaps because of these cultural similarities or perhaps because they represent larger, more enduring human concerns. Finally, I argue that the recent advances in embodied cognition have practical application to social issues that are often discussed by humanities scholars. I suggest ways in which the intersection of Romanticism and enaction might engender interesting and fruitful research projects.

Writing this dissertation has shown me that each generation of scholars and critics brings its positive knowledge about the world to bear on its objects of study in an attempt to better understand the past and to determine how best to move forward into the future

. In doing so, we reconstruct the past in ways that are meaningful to us in our particular cultural moment. We do this, I contend, because we believe that the past can speak to the present just as much as the present can speak to the past.[8] It is my hope that in applying a twenty-first-century methodology to Romantic poetry and prose, I have made Wordsworth's and Coleridge's theories of mind and imagination more intelligible to our cultural moment. I also hope, however, that by paying closer attention to the cultural circumstances in which their work was produced that I have provided historical and contextual information that more accurately depicts the

[8] I am indebted to Victoria Khan for this notion, which she calls reverse anachronism.

relationship between literary and scientific Romanticism. We are finally recognising that culture and biology intersect in ways that are mutually constitutive, that each shapes the other equally. In cognitive science, we are coming to see that cognition is not defined by the subject or the object alone but by both. It is a function of the interaction of the subject and the object and that perception is quite different for differently structured organisms. In this same spirit, I hope that this study presents a fertile intersection of the past and the present that creates productive knowledge about each.

> It is even impossible to conceive how the mind could have become possessed of any of its present stock of ideas, without just such a body as we have; and consequently, judging from present appearances (and we have no other means of forming any judgment at all) without a body, of some kind or other, we could have had no ideas at all.
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> --Joseph Priestley

Chapter 1 Spiritualising the Body: Enlightenment Beginnings

Recounting a story she heard as a child, David Hartley's daughter recalls that when her father was just nine years old he would swing "backwards and forwards upon a gate . . . meditating upon the nature of his own mind; wishing to find out how man was made; to what purpose, and for what future end" (Warner 93).[1] As a practising physician who had been educated for the clergy, Hartley was fascinated by the human mind, its relationship to the body, and the question of how a loving God could condemn sinners to eternal damnation. Though it took him nearly fifteen years, he finally answered these questions to his satisfaction in the two-volume *Observations on Man, His Frame, His Duty, and His Expectations* (1749), which offers one of the first detailed physiological accounts of sentience.

In 1745, a few years before Hartley finished *Observations*, his friend John Lister advised him not to publish. He warned, "You would thereby draw a shower of paper arrows upon you" and "it is troublesome to be . . . engaged in a war of any kind" (qtd. in Trigg 266). Recognising the radical nature of his friend's theory, Lister worried that it would invite a maelstrom of criticism. Despite John Locke's influential treatise *An Essay Concerning Human Understanding*—originally published in 1690, with four new editions during his lifetime—eighteenth-century views of the mind were still largely based on Christianised neo-Platonic dualism that saw the sinful

[1] A portion of this chapter has been published under the title "Soulful Sensorium: The Body in Early British Romantic Brain Science," *La Questione Romantica: Rivista Interdisciplinare di Studi Romantici* 3.1 (2011): 17-28.

body and the immaterial soul as two separate entities. In his attempt to reconcile the mind, the body, and the natural world with the concept of salvation, Hartley unwittingly challenged this longstanding tradition of hostility toward the body by making it necessary to higher order human functioning. Claiming that "the Brain is . . . the seat of the rational Soul," he argues that sentience is an embodied process rather than a function of an immaterial soul (Hartley I: 81). Hartley builds on Locke's work, yet *Observations* far surpasses the work of previous British empiricists.

As it turns out, Lister's fears were unfounded. At the time of publication, the reception of Hartley's work was uneventful. Twenty-five years later, in 1775, Joseph Priestley "forcefully brought Hartley's *Observations* to the attention" of the reading public by "placing it in a polemical context" (Allen 13). Priestley published an abridged version of the first volume, entitled *Hartley's Theory of Mind on the Principles of Association of Ideas, with Essays Relating to the Subject of it*. As the title implies, Priestley prefixed several of his own essays, which attacked the dualist theories of mind advanced by Scottish Common Sense School philosophers.[2] Two years later he published *Disquisitions Relating to Matter and Spirit* (1777), in which he claims that true Christianity is based on materialism and argues for the embodied mind. His goal was two-fold: to free Christianity "from many vulgar prejudices, and many . . . gross corruptions" and to "remove the *odium* which has hitherto lain upon matter" (*Disquisitions* 17). Where Hartley's critique of Christianised neo-Platonic views of the body is implicit, Priestley openly challenges the belief that the body is execrable.

Priestley's assault on dualism and his ardent defence of materialism, based on Hartley's work, had an explosive impact on the scientific and literary communities that lasted well into the nineteenth century and beyond. Not only did Hartley's and

[2] These philosophers are Thomas Reid, James Beattie, and James Oswald. See Schofield.

Priestley's work inaugurate the British Romantic science of the mind, it significantly altered the status of the body in scientific and literary discourse. The body shifted from being a site of temptation—something to overcome—to being indispensable to a number of valuable human concerns, ranging from consciousness and thought to morality and aesthetics. Additionally, they laid the foundations for modern cognitive science and contemporary understandings of both mind and body. Yet, their contributions in these areas are often overlooked. Hartley is recognised as a founding father of associationist psychology and as an influence on William Wordsworth and Samuel Taylor Coleridge, but his role in the history of neuroscience is generally ignored.[3] Priestley, on the other hand, is famous as a radical scientist-theologian, who helped establish the Unitarian Church and made important discoveries about electricity and atmospheric gas. His impact on modern attitudes toward the body, however, has not been examined. Together, these men shaped the foundations of our current understanding of the brain as the organ of thought as they challenged traditional eighteenth-century attitudes toward the body.

Observations on Man extends much further than Locke's well-known account of perception because it explicitly explores the mechanism of thought at the corporeal level. The implications of Hartley's theory challenge Platonic, neo-Platonic, and Christian conceptions of the natural world and the human body as he reframes nature in terms of God's love and moral truth. Hartley considered embodiment necessary for perceiving these truths in the natural world. Without meaning to, he instigated a shift in attitude toward the body that was taken up by Priestley. *Disquisitions on Matter and Spirit* is an ardent defence of materialism that argues against traditional views of the body and the material world. The effects of their work culminated in attitude changes about the body that are still common today.

[3] For a recent exception see Glassman and Buckingham.

Furthermore, these theories provided a basis for Wordsworth's and Coleridge's beliefs about nature and contributed to the scientific basis of early Romantic theories of poetry, imagination, and social change.

Hartley's Unexpected Radicalism

Hartley's work participates in a conversation about sentience and the mind-body relationship that extends much further back than the British empirical tradition. Spanning more than two millennia, the various theories advanced and adopted throughout the ages eventually culminated in the philosophical and religious beliefs that provide a context for Hartley's theories. The cognitive science debate dates back to the Egyptians and pre-Socratic Greeks, who linked thoughts, feeling, and volition—all the attributes of consciousness—to the heart region. In the fourth century BCE, Alcamaeon of Croton, like Hartley, noticed the effects of head trauma and "concluded that the brain is the locus of human understanding" (Santoro et al. 636). According to Carl Huffman, he was the first to affiliate intelligence with the brain. He was also the first to formulate a theory of the immortal soul, which Plato adopted (cf. Huffman).

In his creation story, Plato builds on Alcmaeon's theory. He asserts that the soul is made "out of the indivisible and unchangeable, and also out of that which is divisible and has to do with material bodies" (*Timaeus* 17 sec. 35). He speculates that its twofold nature enables the soul to act upon the body, but the immortal, immaterial parts of the soul are separate from the ever-changing, decaying body. These intelligent aspects of the soul exist independently of the material realm and transmigrate after death. In Plato's theory, because the soul is imperceptible it belongs to the realm of the imperishable, like the divine. The perceptible and perishable body, on the other hand, belongs to the material world. Attempting to mediate between Platonic dualism and pre-Socratic materialism, Aristotle locates the

soul in the heart (cf. Shields). He theorises that it gives form to organic matter, but he thinks it unlikely that the soul survives death. Of these opposing views, Plato's gained ascendency in Christian thought through Augustine and, later, Thomas of Aquinas. Despite his Aristotelian leanings, Aquinas adopted the doctrine of the immaterial soul. This doctrine, which holds that the soul is an entity independent of the body, dominated Christian thought. The view of the body as disgusting was common throughout the Middle Ages and into the sixteenth and seventeenth centuries. It continued into the eighteenth century as well, despite Hobbes' and Locke's work in sensationalist psychology and it is this tradition that Hartley inadvertently challenges with his physiological theory of mind.

While Locke is generally seen as the leading philosopher of materialist cognition, Hartley addresses the reciprocity between body and mind that he and other natural philosophers largely ignore. In fact, Locke's theory of mind is not concerned particularly with the body. Hartley's endeavour to "lay down the general Laws, according to which the Sensations and Motions are performed, and our Ideas generated" specifically investigates how the body receives and transmits data from material objects to the mind (I: iv). Locke deliberately avoids such an examination, declaring that he does "not meddle with the physical considerations of the mind," its relationship to "our bodies," or whether "ideas do, in their formation . . . depend on matter or no" (1). Ultimately, he is uninterested in the mind-body relationship and the possibility that thought is a material phenomenon. Hartley, on the other hand, tries to "trace out these Communications anatomically," even if only conjecturally (I: 19). He tries to explain how sentience occurs on a physiological level, even though "it

seems impossible" given the state of neuroanatomy in the mid-eighteenth century (I: 19).[4]

Hartley's theory is largely based on empirical study of the effects of different substances and events on cognitive ability. His observations led him to conclude that body has just as much of an effect on the mind as the mind has on the body. He notes the impact of emotion and other mental states on the body. For example, Hartley observes that "All Passions of the Mind increase the Motion of the Heart" except "Melancholy," which "makes Men inactive" (I: 246). Likewise, instinctive actions such as sneezing can be "checked for a time by . . . all strong mental Emotions" (I: 90). Not only are our emotions able to make our hearts to race or, conversely, cause us to become apathetic, they also disrupt involuntary processes that are beyond conscious control. These animadversions do not disturb dualist beliefs, which hold that the mind, as function of the soul, exists independently of the body and exerts control over it. His observations of the body's effects on the mind, however, do threaten such beliefs. Hartley also notes that "Narcotics operate so violently on the Stomach and Bowels, the Brain, and external Parts, as to bring Confusion on the Sensations, and Trains of Ideas" (I: 51). Furthermore, "Poisons, spirituous Liquors, Opiates, Fevers, Blows upon the Head *&c.* all plainly affect the Mind" (I: 9). In extreme cases of head trauma, "Memory, and Intellect, are either intirely lost, or much impaired" (I: 8). The simple finding that drugs, alcohol, and head injuries derange the senses and sometimes result in permanent mental impairment makes a powerful argument for the "great reciprocal influence" that the body and mind have on each other (I: 167). From these observations, Hartley concludes that the mind is an embodied process, a deduction that challenges conventional hypotheses based on Platonic and Christianised neo-Platonic views.

[4] Significant advances in this area would be made by Charles Bell in England and François Magendie in France in the early nineteenth century.

Like modern neuroscientists, Hartley locates all mental phenomena including consciousness in the central and peripheral nervous systems. To explain how an ostensibly immaterial phenomenon could be affected by material factors Hartley proposes that "Sensations are conveyed to the Mind, by the Efficiency of corporeal causes upon the medullary Substance" (I: 72). He asserts that "the spinal Marrow and Nerves are, in part, the Sensorium," which "in Men at least, ought to be placed in the internal Parts of the Brain" (I: 81). In other words, Hartley claims that sensation is communicated to the mind through an anatomical mechanism. The medium of conveyance is the "medullary Substance," now known as myelin—the white matter in the brain and spinal cord that envelops the nerve fibres. The mind and body in this hypothesis communicate through white matter. To clarify the long standing mystery of how sensory data from the external world are transferred to the mind, Hartley conjectures that "External Objects, being corporeal, can act upon the Nerves and Brain, which are also corporeal, by nothing but impressing motion on them" (I: 12). Expanding upon Locke's concept of sense impressions, Hartley postulates that they are the result of one material phenomenon (an object in the world) acting upon another (the nervous system).

Hartley's next problem is to explain how these data are transmitted—first from external objects to the organs of sense, then from sensory organs to the nervous system, and finally from the nerves to the mind. Arguing that the laws governing mental processes can be discovered and formulated empirically, like the laws that regulate the rest of the physical world, he adapts Sir Isaac Newton's concept of isochronous vibrations to the human body.[5] He theorises that mental and emotional states "arise from and are attended by corresponding Vibrations in the medullary Substance of the Brain" (Hartley I: 135). Neural transduction, according to

[5] In *Opticks* (1704) Newton theorises that refraction is caused by vibrations that move through an ethereal medium at a speed faster than light.

Hartley, occurs when vibrations travel through the myelin. "All the Sensations, Ideas, and Motions" are "conducted according to the Vibrations of the small medullary Particles" (I: 109). Hartley's hypothesis asserts that mentation is a material phenomenon governed by the same laws that control the natural world.

The implication of this theory is that thought, emotion, and even consciousness itself, originate from material causes. This proposition contradicts Locke's crucial distinction between ideas of sensation and ideas of reflection. In Locke's model, ideas of sensation correspond to objects in the external world while ideas of reflection give us knowledge of our own mental operations. According to Locke, all abstract thought—"perception, . . . reasoning, knowing, willing, and all the different actings of our own minds"—stem from internal reflection rather than direct sensory stimuli (60). He separates sensation and perception into two discrete processes when he claims that "*The soul begins to have ideas when it begins to perceive*" (62). In this view, the mind mediates sensation. Thought cannot occur without mental reflection. Hartley disagrees, calling ideas of reflection an "Error in Mr. *Locke*" (I: 360). He claims that sensation results in "*Ideas of Sensation*" (I: ii). That is, ideas are perceived instantly at the moment of stimulation without a mediatory process between sensation, perception, and ideation. The implication is that mental processes and states are phenomenal rather than extramundane.

Epistemologically, Hartley's proposition contradicts dualist theories of knowledge. Still arguing against Locke, he emphasises that these "*Ideas of Sensation* are the Elements of which all the rest are compounded" (I: ii). They form the building blocks of even the most abstract ideas. Locke argues that "Ideas of Reflection" furnish the mind with a "set of ideas which could not be had from things" outside the mind (60). Hartley acknowledges that abstract ideas "may appear to spring up in the Mind of themselves" without reference to external objects (I: ii). Nonetheless, he

asserts that "all the most complex Ideas arise from Sensation; . . . Reflection is not a distinct Source, as Mr. *Locke* makes it" (I: 360). Claiming that the material world is the source of all knowledge, Hartley inadvertently challenges Plato's notion of ideal forms that exist transcendentally, as well as his belief that knowledge is a process of remembering rather than accruing new knowledge based on experience and observation. He dispenses with the need for a transcendental realm to serve as the repository for abstract ideas.

Hartley's language is at times ambiguous, though, and in places it seems to belie his fundamental materialism. This prevarication, however, does not demonstrate a commitment to dualism. Rather, it reveals the epistemological underpinnings of his theory. Despite his thoroughly elaborated materialist account of perception, some critics see Hartley as a dualist because he is hesitant to "adopt unequivocally the 'vibration' principle" (Marsh 264). Richard Haven, for example, claims that Hartley's "hypothesis . . . enables him to assert a necessary connection between mental events and physical events without denying the existence of mind as a separate 'immaterial substance'" (481). Likewise, Jerome Christensen argues that "the one metaphysical limit that Hartley places on his observations"—"his inalienable commitment to the existence of an immaterial soul"—causes his argument to unravel on itself (39). Hartley does indeed equivocate. In the conclusion to the first volume, he remarks that he "would not . . . be in any-way interpreted so as to oppose the Immateriality of the Soul" (I: 512). He also notes that he is "reduced to the Necessity of making a *Postulatum* . . . which precludes all Possibility of proving the Materiality of the Soul from this Theory" (I: 511), a request that Joseph Priestley decidedly ignored when he used Hartley's theory to defend his materialist philosophy. A century earlier, Descartes encountered a similar problem. Regarding the immaterial soul as the principle of thought, he needed to account for how it

communicates with the body. His solution was to claim that though the soul is attached to the whole body, it acts on the body primarily through the pineal gland.[6] This led Priestley to assert that "notwithstanding his boasting about improving the doctrine of immateriality, he [Descartes] has been considered by some only as a more acute materialist" (*Disquisitions* 216).[7] Hartley, however, was not concerned with how matter and spirit communicate. His main concern was to show how scriptural propositions are true regardless of which philosophical system one adopts, which is essentially an epistemological problem.

Hartley is admittedly uncertain about the exact relationship between the mind and brain. A few sentences after he claims that his theory does not deny the immateriality of the soul, he remarks that "it is all one to the Purpose of the foregoing Theory, whether the Motions in the medullary Substances be the physical cause of Sensation . . . or the occasional Cause" (I: 511). Here, he asserts that the origin of sentience—whether physiological or divine—is irrelevant to his hypothesis. Earlier in the treatise Hartley distinguishes between the body and mind by claiming that "tho' Vibrations be of a corporeal, Sensations and Ideas must be of a mental Nature" (I: 34). Yet, he fails to define the difference between corporeal and mental natures. He further clouds the issue by proposing an "infinitesimal elementary Body" that acts as an intermediary "between the Soul and the gross Body" (I: 34). For some critics, including Christensen, the introduction of this "Body" is evidence that Hartley is a dualist. Yet, in his discussion of life after death Hartley makes the argument from both dualist and the materialist perspectives. He refuses to commit to either position, declaring instead that his "Design is only to shew that the Works of God are

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[6] Descartes discusses the pineal gland in *A Treatise of Man* (composed 1637) and *The Passions of the Soul* (1649).

[7] Priestley did not consider Descartes the founder of substance dualism, but attributed it to the Englishman Sir Kenelm Digby, author of *Two Treatises: in the one of which, the nature of bodies, in the other, the nature of man's soule, is looked into* (1644).

so far opened to us in the present Age" through nature, as we shall see below, "that, when the Question concerning a Future State is put, we ought to determine in the Affirmative" (II: 382). To understand Hartley's ambiguity, as well his belief in a future state (which the materialist Priestley also accepted as true), we must look to his larger epistemological commitments, particularly as they relate to British empirical philosophy.

Hartley believes that human beings are epistemologically limited, unable to gain full access to knowledge until they reunite with God. This position and its variants represent one side of the debate that eventually delimited the boundaries of modern science. There were those who believed that scientific research could and should be reconciled with the claims of religion and biblical fact. This approach to science was, in part, why Hartley appealed to Coleridge, who took a similar position (cf. Levere). On the other side of the debate were those who caution against making metaphysical claims that cannot be verified empirically. They believed that scientific knowledge should be limited to data that can be gathered by the senses, even when those senses are enhanced by technology, such as a microscope. Eventually, advocates of empiricism argued that science should not attempt to answer questions that cannot be solved by empirical research. That is, anything that falls outside the realm of human observation and experimentation should be excluded from scientific research. The issue of what constitutes the proper purview of science was another heavily debated topic in the Romantic period and is one of the reasons Coleridge became disillusioned with British empiricism. Hartley's epistemology is important on two fronts because it circumscribes the limits of empiricism, but despite these limits it outlines a scope for the empirical project that includes theological conjecture.

Though Hartley argues that empirical data should be used to extrapolate philosophical or religious truths, from an epistemological perspective he sees all

human knowledge as provisional. This leads him to admit the conditional status of his hypothesis in *Observations*. He acknowledges that perception may "have some other Source besides the Vibrations in the medullary Substance" (I: 34). Throughout *Observations*, Hartley qualifies his "attempt to treat mind as a scientific 'object'" (Haven 480). In conceding that his "Articles are only imperfect Conjectures," he acknowledges both the limitations of human knowledge and of the empirical project (Hartley I: 156). Like any rigorous empiricist, he constructs a hypothesis based on the best evidence available while recognising that additional research may (and probably will) reveal a more accurate description of the phenomenon in question.

It is crucial to understand that Hartley's epistemology is defined by his theology. Hartley's reluctance to unreservedly embrace materialism or abandon the notion of an immaterial soul signals his belief that human knowledge, prior to the end times, is incomplete. Educated at Jesus College, Hartley took a keen interest in theological questions, particularly the problem of evil and the promise of salvation.[8] This quandary provides the framework for understanding his philosophical position. While the first volume of *Observations* outlines a physiological account of sentience, the second volume situates it within the context of a postlapsarian world. In Hartley's view, prelapsarian human beings lived in perfect union with God and were, therefore, able perceive and apprehend his truth in the world around them. Nature, according to Hartley, "originally functioned to lead man directly from knowledge of created things to God, but was 'destroyed' after the Fall" (Marsh 273). Paradise was characterised by unmediated comprehension of the divine, but humankind's first disobedience fractured union with God and shattered perfect knowledge. "When Adam acquired knowledge of good and evil he lost his innocent, integrated vision of the world for a fallen vision" that grants human beings only partial apprehension of

[8] Though trained for the ministry, Hartley was never ordained because he object to the mandatory Articles—an act that made him popular with Dissenters such as Priestley.

the truth (Leslie 623). Human beings fell out of harmony with God and accurate perception was splintered, leaving postlapsarian people with only imperfect access to the truth encapsulated in the natural world. Since unified vision was lost to fallen vision, epistemological limitation characterises the postlapsarian human condition.

Within this context, the study of nature leads to revelations of God's truth. Thus, science should serve theological ends; this is its proper scope. The very act of pursuing knowledge, in Hartley's view, brings human beings closer to God because it serves as "Preparatories and Preliminaries" to the end-time when people will once again be able to apprehend truth directly (Hartley I: 366). According to Hartley, empirical science can help prepare the human race for this reunion. If we are able to decompose "the Affections . . . into their simple compounding Parts, by reversing the steps of . . . Association . . . we may learn how to cherish and improve good ones, [and] check and root out such as are mischievous and immoral" (I: 81). In other words, if science could work out precisely how association works, then people could manipulate the process to their theological advantage. The goal, of course, was to produce virtuous human beings by eliminating the conditions that cause people to develop vices.[9] Properly directed, association "has a Tendency to reduce the State of those who have eaten of the Tree of Knowledge of Good and Evil, back again to a paradisiacal one" (I: 83). By controlling association science could hasten the predestined reunion with God. Another benefit of empirical research is that it bridges certain logical gaps in religious doctrine. Hartley argues that "the Contemplation of our Frame and Constitution appears . . . to have a peculiar Tendency to lessen these Difficulties attending Natural and Revealed Religion, and to

[9] Hartley's theory was adopted and adapted by thinkers such as Tom Wedgwood and Maria Edgeworth, who were interested in applying the principles of association to education and early childhood development. While Wedgwood's theories are discussed in subsequent chapters, a thorough examination of the relationship between Romantic cognitive science and pedagogical theory is beyond the scope of this project, but would make a welcome contribution to Romantic scholarship.

improve their Evidences" (II: iii). The proper goal of science, then, is to pursue truth, encourage morality, and eliminate vice. This aim, he believed, could best be achieved by studying the human mind.

Though science could help bring about reunion with the divine by discovering truths ensconced in nature, only God can decide when this event will occur. The limits of empiricism have been set by God and Hartley warns against transgressing these boundaries. In his epistemological taxonomy, knowledge falls into two categories: "philosophical and vulgar" (I: 35). The former relates to truth, morality, and ethics, while the latter is ordinary, practical, and useful. He was aware that though knowledge is provisional, if often yields pragmatic discoveries. Empirical research produces "great Advantages respecting human Life" in addition to "numerous Connexions of Truth of all Kinds" (I: 433). He cautions, however, that scientific knowledge can be "true, in a very useful and practical sense, yet . . . not so in an ultimate and precise one" (I: 34). In other words, vulgar knowledge, though utilitarian, can be false. For this reason, the empirical project must always be guided by theological or philosophical goals; otherwise it can lead its practitioners into sin. Hartley warns researchers "that to set a Value upon Knowledge considered in itself, and exclusive of its Tendency to carry us to God, is a most pernicious Error, derived originally from *Adam*'s having eaten of the Tree of Knowledge" (I: 298). To pursue knowledge for practical reasons alone recapitulates original sin.

Wittingly or unwittingly, Hartley addresses the very issue that would later lead to scientific positivism, which divorces science from theological and philosophical concerns in order to pursue only questions that can be verified empirically. It almost seems as if he attempts to forestall British empiricism's development in this direction. Though he approves of "the Pursuit of Truth," Hartley urges that "the Study of Science, without a view to God and our Duty" is a

"dangerous and obstinate evil" (II: 255). Just fifty years after the publication of *Observations on Man*, Erasmus Darwin would commit the very error Hartley's warns against. In *Zoonomia* (1794), he tries to distance himself from the philosophical and theological implications of his theory of mind. While he acknowledges that "philosophers have been much perplexed to understand in what manner we become acquainted with the external world," he makes it clear that his contribution to cognitive science is meant only to serve practical purposes (Darwin 77). Darwin entreats his readers, "I beg to be understood, that I do not wish to dispute about words, and am ready to allow . . . and to believe . . . that the ultimate cause . . . of all motion is immaterial, that is God" (77). Darwin's theory, as we will see in the next chapter, is clearly materialist and his attitude toward God is ambivalent at best. In order to deflect criticism regarding the heretical implications of his work, though, he is ready to concede to prevailing opinion about the nature of God and the world. He maintains that the purpose of his text is "to unravel the theory of diseases" (10). Despite the philosophical speculations in *Zoonomia*, Darwin is interested in mapping out a practical system that is useful to his fellow physicians. His text brackets philosophical and theological concerns in favour of a systematic process for diagnosing and treating disease. Darwin prefigures a growing trend in the nineteenth century. Eventually, scientists would ignore Hartley's call to pursue empirical knowledge with the goal of discovering God's truth and, as we know, science and theology split.

Challenging Neo-Platonism

Attempting to mediate "between Christianity, physiology, and metaphysics" (Allen 2), Hartley's theory explains how the human body and the natural world fit into God's plan. Understanding the theological underpinnings of his epistemology is important because it contravenes Christianised neo-Platonic understandings of the

natural world and lends important insight into Romantic beliefs about nature and human beings' place within it. While some critics believe that Hartley's system "point[s] to a kind of unitarian Christian 'Platonism'" (Marsh 272), in fact it presents a significant challenge to Christianised neo-Platonism. This alternative view is reflected in Romantic understandings of nature, including Wordsworth's and Coleridge's. It is noteworthy that Hartley believes that the perception of knowledge—and not nature itself—is fragmented. He asserts that to discover truth "a careful Examination of Things, of the World Natural, the human Mind, [and] the Scriptures" is required (I: 333). Unlike neo-Platonic Christians, Hartley does not condemn the natural world, but sees it as the locus of morality and God's truth. In this way, he contradicts a view that was prevalent in the eighteenth century.

In some ways Hartley is similar to Plato and neo-Platonic Christians in that he believes that divine truth is the ultimate source of reality. Plato calls this eternal reality the Good; Plotinus calls it the One; and Christian philosophers call it God, or in Hartley's terms, "the cause of Causes, and the supreme Reality" (II: ii). Unlike Plato and his followers, however, who see the material world as corrupt, he thinks that this truth drives and structures the natural world; that it exists in nature despite humanity's impaired ability to apprehend it. Hartley defines "Philosophy," or the quest for truth, as "the Art of Decyphering the Mysteries of Nature" because he supposes that the empirical study of nature reveals divine reality (I: 350). In Hartley's view, the "absolute Perfection of the Divine" is found in nature (I: 492). Furthermore, he does not believe the material world will pass away after the apocalypse, but that it will abide eternally, according to God's will, and continue to be humanity's home.

In neo-Platonism, the sensible world emanates from God in a great chain of being with matter at the lowest level and God at the top. God represents perfect unity, while the material world is fragmented. Truth exists only in unity, thus, it

cannot be found in the natural world. Instead, it is found in the transcendental realm, which is accessible to the mind through the faculty of reason. In Platonism and its offshoots, the material world is illusory because it distracts people, leading them away from the true reality of God and transcendence. In its Christianised version, the world is sinful because it tempts human beings away from God. In both cases, God—and by extension truth—occupies an entirely different domain than humans and their environment. Hartley, however, does not accept this separation between God and the natural world. Humans lack full access to truth because of original sin, not because the material world is flawed. Even in the postlapsarian era, God inhabits the same space as humankind. Nature embodies his holy truth and is, therefore, sanctified as well as necessary for cultivating a relationship that will hasten his reunion with humanity.

Hartley regards matter as the substance from which God created the prelapsarian world. After the apocalypse, God will restore the earth to unity. Thus, the world is not a place alien to spirit, but human beings' natural environment. He suggests that “Man's Actions, and the Course of Nature . . . may be suited to each other in the best possible Manner” (I: 508). His understanding of human physiology suggests reciprocity between humanity and nature. “Since the Human Body is composed of the same Matter as the external World,” it is able to receive sensory data (I: 62). Hartley posits that perception is possible because each “Nerve and Region” of the body “is originally fitted to receive, and, as one may say, sympathize with, such Vibrations as are likely to be impressed upon them” (I: 42). In this view, God designed the natural world to accommodate the human body and, conversely, the human senses conform to nature. For example, Hartley claims “that Green . . . the middle Colour of the Seven primary ones, and consequently most agreeable to the Organ of Sight, is also the general Colour of . . . external Nature” (I: 420). That the

most common colour in nature is the one that, according to this theory, is the easiest to see and the most pleasing to the eye is no coincidence, but part of God's plan. Both body and nature share a common property—materiality—that permits a reciprocal relationship between the two.

Seeing uniformity throughout the various natural kingdoms, Hartley reasons that each of these taxonomic categories is inextricably connected to each other. “The Body Politic, the Body Natural, the World Natural, the Universe;—The human Mind, the Minds of Brutes . . . and even the infinite Mind himself” are accessible to each other because of shared characteristics that enable interchange amongst them (Hartley I: 296). In this respect, Hartley's theory overturns the great chain of being by blurring the lines between animals, humans, and the divine. In the end times, humanity will be restored to its proper place within the material world. Humans will exist in harmony with God and nature and perfect knowledge will be restored. This view situates humans within their natural environment rather than above it.

Though Hartley believes that humanity is steadily progressing toward the biblically promised end times, he could not believe that God would reserve paradise only for a repentant few. He was certain that God has a plan for ensuring all people eventually achieve salvation and that this plan guided his creation of the natural world as well as the human body. Based on John Gay’s *Dissertation Concerning the Fundamental Principles of Virtue and Morality* (1731), which argues that God coupled virtue with human happiness, Hartley concludes that nature and the human frame are designed to bring about reunion with God. Pleasure, if associated with the proper stimuli, necessarily fosters virtue. He proposes a series of six stages of development through which all people pass.[10] One of these "intellectual Affections" is theopathy, or a feeling of sympathy with the divine that is stimulated by

[10] The six intellectual pleasures are: imagination, ambition, self-interest, sympathy, theopathy, and moral sense.

meditating on God (Hartley I: 386). It is eagerness to submit to God's influence and will. Theopathy, according to Hartley, "is generated by the Contemplation of his Bounty and Benignity . . . as these appear from the View of the Natural World" (I: 489). Contemplating nature and contemplating God, in this view, are synonymous. Thus, the human body and its environment necessitate salvation by design.

Claiming that materiality is necessary for reuniting with God, both ontogenetically and phylogenetically, Hartley contradicts traditional views. In Platonism, embodiment—not disobedience—engenders humanity's fallen state. Because Platonists and Christian neo-Platonists think that truth exists transcendently and that matter is fragmented, the body inhibits the apprehension of truth. Plato contends that the material world is inchoate, ever the realm of becoming, but never of being. Matter, which includes the human body, can never converge with the Good because of its inherent imperfection. Plotinus, father of neo-Platonism, takes this view further. He regards matter as evil because it is separate from the One, whose disembodied intellect orders the forms. Matter, in his view, remains perpetually chaotic, devoid of form and intelligibility. The body, then, distracts humans away from truth. Consequently, seekers of truth should get "rid . . . of eyes and ears and of the whole body" because it hinders "the soul from the acquisition of knowledge;" truth can be grasped "with the mind alone" (Plato, *Phaedo* 54). Hartley's belief that "actual sensible nature . . . reflect[s] the tenets and beings of true religion" (Marsh 273) challenges this censorious view by ascribing a spiritual purpose to the natural world and to the body.

Attributing character formation to wholly material causes, Hartley positively revaluates human corporeality. If all ideas have material origins—including morality, ethics, and virtue—they can be perceived without the aid of extrasensory abilities and before death. According to Hartley, as well as to Platonists and neo-Platonic

Christians, merging with God (or the Good) allows humans to know and experience reality accurately. In traditional Christianity, this reunion can only happen after the soul discards the body and transcends the material realm. Hartley, however, does not see the body or its constitutive element, matter, as deterrents to uniting with the divine. He does not consider the body evil, but a necessary aid to accessing divine truth. His theory asserts a new, positive view of the body that was adopted and popularised by Joseph Priestley.

Priestley's Radical Materialism

Priestley took up Hartley's work as part of his objection to Christian neo-Platonic views of the body and the material world. A scientist and theologian who was forced to flee to the United States in 1794 because of his political and religious views, Priestley first discovered Hartley's work when he was "a student at Daventry Academy" in the 1750s (Garrett 54). Hartley's use of empiricism and theology to account for religious reality "in terms of contemporary science and psychology" fascinated him (Haven 494). He was particularly compelled by Hartley's materialist account of cognition. He thought, however, that the second volume, which elaborates the theological system, confuses the scientific theory. He believed *Observations* would have been more widely read if it "had not been clogged with a whole system of moral and religious knowledge" (Priestley, *Theory* iii). "To make *Hartley's theory of the mind* more intelligible" Priestley's edition omits the second volume and eliminates the discussion of vibrations (*Theory* v). His tactic was successful. Despite, or perhaps because of, its controversial nature, Hartley's theory was well known amongst late eighteenth-century university undergraduates (Wu 72). The polemical essays Priestley added to the beginning of *Hartley's Theory* also spurred debate.

In the prefatory essays, as well as in the later *Disquisitions*, Priestley extends Hartley's thesis by explicitly rejecting dualist theories of mind in order to contest traditional Christian views of the body. Where Hartley's critique of dualist views is implicit, Priestley overtly attacks dualism. Where Hartley is tentative, Priestley is bold. Hartley ambiguously opens his treatise by stating that "Man consists of Two Parts, Body and Mind," though he dismisses the immaterial mind as cursorily as Locke dismisses the material body (I: i). Priestley, on the other hand, unflinchingly declares that "man does not consist of two principles, so essentially different from one another as *matter* and *spirit*" (*Theory* xxiii). He argues against the view that the body is an "*incumbrance of clay,*" a "dreadful *contagion of flesh and blood*" that must be discarded before the soul possesses "all the powers and enjoyment, naturally belonging to an *unembodied spirit*" (*Disquisitions* 47). To prove that the mind is "part of the bodily machine" (Schaffer 276), he augments the empirical evidence supplied by Hartley.

To further establish the physiological connection between mind and brain Priestley discusses pathological brain states and observes that "there is no instance of any man retaining the faculty of thinking, when his brain was destroyed" (*Disquisitions* 27). He also links mental functions to physiological development, noting that mental acuity increases as children mature, while it often diminishes in the elderly. "The faculty of thinking," he asserts, "in general ripens, and comes to maturity with the body, it is also observed to decay with it" (*Disquisitions* 27). He marshals this evidence to support his argument that "the property of *perception*, as well as the other powers that are termed *mental*, is the result . . . of such an organical structure as that of the brain" (*Theory* xxiii). Declaring that "the business of thinking . . . depend[s] upon mere *matter*, as the doctrine of vibrations supposes," Priestley substantiates Hartley's theory of embodied cognition (*Theory* xxii).

The phrase “mere *matter*” is sardonic, however, for Priestley does not despise matter but also sees it as the material with which God created the world (*Theory* xxii). Like Hartley's outlook, Priestley's perspective of the natural world and humankind's relationship to it provides a model for Wordsworth's and Coleridge's views. Priestley asserts a “singular theory of nature-as-divine energy” (Erving 226) that reconceptualises matter and places human beings as cognate to other species. His goal, in part, is to overcome “the *baseness* and *imperfection*, which have been ascribed to” the material world by showing that matter is not the beginning of evil as in Plotinus's system (*Disquisitions* 17). Though he omits the second volume of *Observations*, Priestley does not abandon the religious implications of Hartley’s work. Instead, he reframes the issue of embodiment within the context of his own theological programme, which involves drawing on empirical and religious evidence to establish the veracity of materialism, disproving dualism and its theories of nature and the body, formulating a theory of embodied cognition, and showing how humans fit into the natural world.

Priestley's first task is to establish materialism, or the philosophy that all phenomena have physical causes. To accomplish this goal, in *Disquisitions* he launches a full-scale assault on Christianised neo-Platonic dualism. First he traces the rise of dualism back to “the ancient philosophers” Plato and Plotinus, who “made the Supreme Mind the author of all good, and *matter* the source of all evil” (*Disquisitions* xxxix). In addition to this history, Priestley provides a summary of contemporary eighteenth-century arguments in favour of dualism as he critiques and dismantles them. Predominant since at least the thirteenth century, this philosophical position was being weakened by advances in science, particularly cognitive science. Consequently, its eighteenth-century adherents took pains to demonstrate that the concept of “two *heterogeneous and incompatible principles in*

man," which are entirely discrete and profoundly polarised, is compatible with recent empirical observations (*Disquisitions* 61). For example, William Wollaston maintains that "the *soul* is detained in the *body* (the head or the brain) by some *sympathy* or *attraction* between this material vehicle and it" and that drunkenness, old age, or other infirmities merely disrupt this connection between body and soul (363 and qtd. in *Disquisitions* 76). Priestley discards this Enlightenment notion and others, such as Cartesian occasionalism or Leibniz's pre-established harmony, as illogical, overly complicated, and inconsistent with philosophical and empirical methodologies.[11]

To support his theory of embodied cognition and demonstrate that matter is neither evil nor illusory, Priestley challenges contemporary definitions of matter. He argues that the hostile view toward the material world endemic in neo-Platonism and Christianity arises from a misunderstanding of its properties. In the commonly accepted Newtonian view, matter was seen as solid, inert, passive, and lacking the capacity for self-propulsion. Abstractly considered, it does not have the qualities considered valuable by those vying for political power and social hegemony. That is, it lacks the power and ability to act. In Priestley's view, however, "matter is not basically hard, inert, and extended but rather consists of geometrical points surrounded by concentric spheres of repulsive and attractive forces" (Schofield 350-51). According to this redefinition, matter has very different properties—attraction, repulsion, and extension—that are active. If matter is properly understood, the concept of thinking matter is no longer incomprehensible. If matter is neither solid nor impenetrable but active and flexible "the whole argument for an immaterial

[11] Occasionalism is the belief that divine intervention, that is God, directly causes all thought and motion. Pre-established harmony is the doctrine that the body's actions correspond to the mind's thoughts not by cause and effect, but by the pre-established decree of a divine being. To see all the various hypotheses against which Priestley argues, see *Disquisitions*, Section VI, Part II, "*Of the MUTUAL INFLUENCES of the Soul and Body*," pp. 60-81.

thinking principle in man . . . falls to the ground" (*Disquisitions* 18). Not only is there no reason to believe that mind and matter are composed of separate substances, but there is also no reason to despise material objects, including the human body.

Marshalling scriptural evidence to support his theory, Priestley contends that Christianity is actually a materialist philosophy. Additionally, he attacks the notion of a disembodied, sentient soul, which he sees as heretical. According to his Socinian interpretation of scripture, "The whole of man is of some *uniform composition*" (*Disquisitions* xiii). Refusing to see the body as a site of temptation and sin, he refashions it as a spiritual vessel. He reasons that the body must have some good use because God created it. Priestley argues that embodiment is necessary for consciousness as well as for salvation. He observes that since "we receive our sensations" from the external world through "the organs of sense, the nerves, and brain," without the body "we could have no sensations or ideas" (*Disquisitions* 77). Without the body there could be neither perception nor thought. The notion that a disembodied soul could have consciousness is ludicrous because, in his view, the entire body is implicated in cognition.[12]

Priestley sees cognition as a function of organisation. He argues that the physiological structure of an organism determines its cognitive abilities. The significance of this claim, in addition to its positive revaluation of the body, is in how it conceives of human beings in relation to the natural world, particularly animals. This view of cognition is very much like twenty-first-century enactive theories, which

[12] Priestley's argument, in many ways, resembles Hayles' claims in *How We Become Posthuman*. There, she argues that informatics, that is, information and the methods for processing and storing it, do not exist as disembodied abstractions, but depend upon their material substrates. She situates her argument against cybernetic discourse, which ignores materiality and embodiment by focusing on information as an abstraction rather than a product of computer hardware, for instance, or an organic brain. Like Priestley, she argues that data cannot be processed in the absence of some sort of material infrastructure. She contends that the cybernetic revolution of the 1940s and 50s, with its disembodied concept of informatics, perpetuates a form of Cartesian dualism.

also assert that the structure of the nervous system as well as the types of actions the body can take determine how organisms perceive and understand their environments.[13] According to Priestley, the different physiological structures of different animals, including human beings, result in “quite *different* senses and . . . very different sets of sensations and ideas” (*Disquisitions* 35). In other words, the world appears different to different species.

Not only does this hypothesis anticipate modern cognitive theory, but it radically situates humankind within the natural world. Human beings, like animals and plants, are part of nature. Contrary to the Enlightenment view that animals are unthinking, unfeeling automatons, Priestley observes that “brutes have the same external senses that we have, they have . . . all the same *inlets* to *ideas* that we have; . . . they evidently have *memory, passions, will*, and *judgement* . . . as their actions demonstrate” (*Disquisitions* 238). That is, both structurally and behaviourally, animals exhibit sentience. If sentiency is not a function of an immaterial soul, but a property that emerges from material organisation, then animals “differ” from people “in *degree* only, and not at all in *kind*” (*Disquisitions* 42). In this view, all of nature shares the same essence—matter. For Priestley, however, this levelling of *scala naturae* does not denigrate humankind, for “matter (and thus everything comprised of matter) . . . participate[s] in the divine” (Erving 226). Instead, it celebrates God's creation. Priestley, like Hartley, views the world as a good place, created by God, and inevitably progressing toward reunion with him.

Priestley also rejects the idea that the body is inherently sinful. According to Plato and the traditions that follow him, while "in the body . . . the soul is mingled with [a] mass of evil" (*Phaedo* 54). For Priestley, the body is "naturally proper, and even necessary," for it is “the only means by which we receive our sensations”

[13] A more thorough discussion of enaction theory and its tenants can be found in subsequent chapters, particularly chapters three and four on Wordsworth and Coleridge.

(*Disquisitions* 77). As part of God's creation, the body is also necessary for salvation. Priestley posits that God cannot be directly apprehended by the human senses because "the Divine nature, or essence . . . has properties most essentially different from every thing else" (*Disquisitions* 107). In this respect, God is unknowable. Humans can, however, apprehend the divine order contained in the natural world. For this, the body, its senses, and its cognitive abilities are necessary. Unlike many millenarians, Priestley does not believe the body will be cast off in the end-times. Rather, it is necessary for the resurrection of the dead. In the post-apocalypse, material bodies—living and dead—will be transformed: "from *earthly* they will be *spiritual*; from *corruptible*, *incorruptible*; and from *mortal*, *immortal*" (*Disquisitions* 101). Drawing on historical and scriptural evidence along with empirical data Priestley asserts that, as a materialist religion, true Christianity cannot and does not condemn the body.

Concerning British empiricism and the evolution of science, Priestley's view of the natural world gave him great confidence in the empirical project. He disagrees with Hartley's notion that human access to knowledge was fractured with the Fall. Humankind, in his view, is not out of harmony with truth, but is simply incapable of understanding "God [who] is, and ever must remain *incomprehensible*" (*Disquisitions* 108). In this respect, humanity is epistemologically limited, but with respect to the natural world it is not. Though science will never be able to discover "the *original beginning of motion*, or *primary activity*," that is, God, study of the natural world will still lead to greater understanding of his laws (*Disquisitions* 150). As a materialist, Priestley held that researchers have only their senses and sensible phenomena to look for truth. Contrary to Plato, he argues that "*appearances* . . . ought to determine the judgment of philosophers," for neither the senses nor the material world are deceptive (*Disquisitions* 89). Instead, empirical research can reveal "the plan of

nature, from which the wisdom of God is inferred" (Schofield 349). Priestley was confident that science could and would lead to improved social conditions.

Priestley asserts that "the right philosophy of mind provided the appropriate model for reform" (Schaffer 253). In his view, empiricism, religion, and politics are intertwined. He considered science "the redemptive agent of emancipation and amelioration" that could bring society to equity and justice (Kramnick 3). Priestley's materialism provides a foundation for his politics, but his theology "sharply distinguishe[s] his position from the materialists who sought to establish an atheistic groundwork for republican politics" (Erving 227). Unlike the French *philosophes*, Priestley's radical politics has a twin foundation in materialist empiricism and benevolent Christianity. As such, his attitude, like Hartley's, marks a certain approach to the British scientific project. While he does not advocate the study of metaphysical questions per se, he sees an inextricable link between science, nature, and the divine; they could not be divorced.

Together, Hartley's and Priestley's work marks the beginning of shifting attitudes toward matter and the body. Though the general public would not view matter as neutral substance until the twentieth century when the scientific ideology took a firm hold on popular opinion, within some philosophic and scientific communities the neo-Platonic and Christian ideas about matter began to lose their stronghold. Despite a strong opposition to materialism in general, Priestley's challenge to dualism helped raise the status of the body. His edition of *Observations* and his defence of the material body "helped shape the worldview of an entire generation of dissenting factory masters, scientists, and reformers" and poets (Kramnick 28). Hartley's and Priestley's reformulation of the natural world as a divine place containing moral truths significantly influenced the Romantic view of nature. Their endeavour to remake the body into a spiritual object had wide ranging

ramifications on the body's status in medicine and science as well as on early theories of poetry and imagination. After Priestley published *Hartley's Theory of Mind* and *Disquisitions*, the topic of sentience was taken up by several other scientists and an on-going debate ensued.

In 1794 Erasmus Darwin published *Zoonomia, or the Laws of Organic Life*, which formulates a materialist hypothesis that offers an alternative to Hartley's vibrations. Distinguishing between organic and inorganic matter, Darwin postulates that sentience is the exclusive property of animate life, including plants, insects, and other nonhuman life forms. His theory elicited heavy attack, especially from Thomas Brown, who made his career publishing *Observations on the zoonomia of Erasmus Darwin, M.D.* (1798). In it he not only disparages the notion that sentience is a physiological process, rather than the function of an immaterial soul, he also attacks empirical materialism for positing "the groundless belief, that we are acquainted with the nature of causation" (*OZ* xvi). Two younger scientists, Humphry Davy and Tom Wedgwood, also formulated hypotheses of embodied cognition that were inspired by the work of Hartley and Priestley, though their theories were never published. Even the poets Wordsworth and Coleridge participated in these mind-matter debates. The query into the mind as a physiological process continued to be a topic of intense philosophical and medical debate well into the nineteenth century.

Debaters were sharply divided between the materialist and dualist hypotheses about the mind's relationship to the body. The debate also had political and religious overtones. Generally, dualists were conservative men, loyal to church and state. Like Priestley, the younger materialists tended to be political radicals who were sympathetic to the French. Consequently, they were accused of political subversion as well as atheism. While it is obvious that neither Hartley nor Priestley was an atheist, some nineteenth-century materialists lobbied for the separation of

science and religion. In a series of lectures on physiology and zoology delivered to the Royal College of Physicians in 1819, William Lawrence denounced the use of empiricism to pursue theological questions. Hoping to create an ideology-free zone, he insisted that scientists must not speculate about metaphysics. He argued that "An immaterial and spiritual being could [not be] discovered amid the blood and filth of the dissecting room" (Lawrence 18). With the rise of positivist science, Hartley and Priestley's theological programme was discarded and the body was no longer regarded as a spiritual entity.

As metaphysical issues were set aside, science objectified the body in much the same way it objectified the natural world—it became something to dissect and study. Though the body lost its moral and spiritual significance, science did not revert back to the Christianised neo-Platonic view of the body. The ideology of scientific objectivity turned the body into an object of study. The altered status of the body, particularly within scientific discourse, shows the transformation from hostile Platonic and Christianised neo-Platonic views to our modern conceptions of it. This new understanding of the body was due in no small part to David Hartley's and Joseph Priestley's spiritualisation of matter, particularly, the human form.

Their revaluation of the body also had a significant impact on Wordsworth and Coleridge. For these poets, the quest to know truth was not a speculative exercise, but an attempt to usher it into the world on a large scale. The role of the philosophical poet—and for many of the Romantics, the term poet *ipso facto* implied philosopher—was to help bring about an ideal social order based on democratic values that would ensure that "joy in widest commonality spread" amongst all people (*Pros*. 18). Ideal, in this sense, does not suggest the Platonic understanding of the term, but refers to a perfect moral relationship amongst people. This understanding of ideality was inspired by Hartley's and Priestley's inversion of neo-

Platonic understandings of the material world and the body. Furthermore, their belief that such an idyllic society could actually exist on earth, and not only in some heavenly immaterial realm, takes it origin from Hartley's materialist vision of the post-apocalyptic world and Priestley's elaboration of his ideas.

From Science to Poetry

The extent to which Hartley and Priestley influenced Samuel Taylor Coleridge and William Wordsworth is a matter of scholarly debate, though a number of critics have cogently argued that both poets drew on Hartley's *Observations* when formulating theories of the sublime, imagination, and feeling.[14] Their influence on Coleridge is well documented in his early letters to his brother George, Robert Southey, and others. He also expresses his admiration for them in *Religious Musings* (1794). While the evidence of their influence on Wordsworth is less conclusive, he probably read *Observations* between 1787 and 1790 as part of his Cambridge education (Wu 72). It is also likely that he read *Disquisitions* some time before 1795, since he refers to "the philosophical Priestley" in 1793 (qtd. in Pittman 55).[15] Traces of "associationism can be found in W[ordsworth]'s poetry as early as . . . 1787" (Wu 72). In Coleridge, it appears as early as 1790.[16] Some critics argue that the poets, Wordsworth in particular, could have gleaned associationist ideas "from any number of sources or from simply breathing the intellectual air of the times" (Hayden 102 n23). Nonetheless, the "spreading materialism" that was "a fact of social life" in the eighteenth century (Schaffer 242) was a result, in large part, of Priestley's work,

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[14] Christenson, *Coleridge's Blessed Machine of Language* and "Philosophy/Literature: The Associationist Precedent for Coleridge's Late Poems;" and Miall, "Coleridge on Emotion: Experience into Theory," and "'I see it feelingly': Coleridge's Debt to Hartley." See also Persall, Lamb, Christie, and William Empson's chapter "Sense in the Prelude" in *The Structure of Complex Words* (1989), pp. 289-305. For an opposing point of view, see Hayden.

[15] Charles Pittman conjectures that Wordsworth read something by Priestley, probably *Disquisitions*, because he references Priestley in the 1793 *Letter to the Bishop of Landaff*. Richardson also believes that "Wordsworth probably read" *Disquisitions* or something by Priestley (*British* 67).

[16] See "The Progress of Vice" (1790) in *CPW* I: 12.

including his popularisation of Hartley. Examining the assumptions that underwrite the poets' early plans for social reform in light of Hartley's and Priestley's theories helps explain how they perceived the relationship between nature, poetry, and social change. These theories reveal the mechanism that connects these elements and that mechanism is embodied cognition.

The cognitive theories formulated by Hartley and Priestley, particularly their revaluation of the body provide a theoretical base for Wordsworth's and Coleridge's early philosophy of social reform and its relationship to poetry. Hartley's taxonomy of intellectual affections, which charts the evolution of the individual and the species in their progression toward God, provides an ontogenetic and phylogenetic model for change. It maps out a logical sequence through which individuals pass when exposed to positive associative influences. This taxonomy allowed Coleridge to envision a plan for creating a more moral society. Furthermore, Hartley's and Priestley's conception of the relationship between human beings, nature, and the divine was important to the poets. It offered them a model that they could emulate. Hartley's view of nature and his theory of language were closely connected; it gave Wordsworth a way to conceptualise the relationship between poetry and morality. Furthermore, Coleridge and Wordsworth saw a necessary relationship between feeling and morality. Hartley's and Priestley's discussion of how feeling and imagination operate on a physiological level supplied a mechanism for ontogenetic transformation by explaining how change occurs in human beings. In short, Hartley and Priestley gave the two poets a way to think about how to actually bring about reform in light of the failed French Revolution.

In their early careers, Coleridge and Wordsworth theorised about how to expedite the progress toward moral sense. As supporters of the democratic ideals espoused by the French revolutionaries, they saw a need for social reform that

would bring about a more equitable and moral social structure, particularly after the revolution devolved into the Reign of Terror. Both men sought an alternative, non-violent method for achieving this goal. Coleridge, in particular, hoped to ameliorate society and help usher in the era of unity promised by Hartley, Priestley, and the bible by creating and living in an ideal society, which he and Southey dubbed Pantisocracy. Wordsworth, on the other hand, sought to bring about reform through poetry and the aesthetic experience, as outlined in his "Essay on Morals" (ca. 1798) and the *1800 Preface*. In both cases, their plans were meant to put Hartley's theory and Priestley's extension of it into action.

Hartley's Developmental Taxonomy

After setting out his theory of neural transduction in *Observations*, Hartley outlines the stages of intellectual development that each person passes through in the progression toward "the Love and Approbation of Virtue, and to the Fear, Hatred, and Abhorrence of Vice" (I: 497). He theorises that all people inevitably move toward spiritual maturity, passing through certain stages along the way. These intellectual affections, as he calls them, start with imagination and progress to ambition, self-interest, sympathy, theopathy, and culminate in moral sense, or "The Voice of Conscience" (II: 40). According to Hartley, the human body naturally encourages the passage from one stage to the next toward the highest state of being. He notes that the physical and emotional effects of virtue are usually positive, while the effects of vice are negative. These consequences are experienced on a physiological level. For example, "Sensuality and Intemperance subject Men to Diseases and Pain . . . whereas Temperance is attended with Ease of Body, . . . the Perfection of the Senses, and of the Faculties bodily" (I: 495). What occurs naturally is also replicated societally. Generally, virtuous action is encouraged by approbation, good reputation, friendship, and the like. Vice, on the other hand, leads to shame,

degradation, and reprobation. Furthermore, adults encourage good behaviour in children and discourage the bad by rewarding the former and punishing the latter. Thus, pleasure becomes associated with virtue and pain with vice, such that people move naturally through these developmental stages toward morality.

Hartley's taxonomy provides a framework for envisioning ontogenetic change in three ways. First, he shows how human beings change for the better by moving from immoral to moral behaviour. Second, he explains how nature encourages virtue by its effects on the body. Third, he establishes the possibility of change and describes how to bring it about. In Hartley's view, the progressive improvement of humankind was inevitable but could also be advanced by judicious intervention. Coleridge planned Pantisocracy to be just such an intervention. This social experiment, which was never fully realised because it required a move to the United States that could not be carried out, was intended to facilitate each member's progress through Hartley's taxonomy.

In a 1794 letter to George, Coleridge expresses his desire for social reform, writing that he can "see evidently, that the present is *not* the *highest* state of Society, of which we are *capable*" (*CL* I: 126). Dissatisfied with institutions such as aristocracy, slavery, and other exploitive conventions, he declares himself a "friend of universal Equality" and expresses a desire for reform that is based on his early reading in cognitive science (*CL* I: 126). "[A]fter a diligent," even "intense study of Locke, Hartley, and others who have written most wisely on the Nature of Man," he is able "to see the point of *possible* perfection at which the World may perhaps be destined to arrive" (*CL* I: 126). Designed to "to make men *necessarily* virtuous," the plan for Pantisocracy was based, at least in part, on Hartley's and Priestley's theories of embodied cognition (*CL* I: 114). Coleridge adopts Hartley's and Priestley's belief that humanity is progressing toward reunion with God. Pondering "how to lead Mankind

from one point to the other" (*CL* I: 126), that is, from imagination to moral sense, he determined to implement the cognitive theories of Hartley and Priestley by founding Pantisocracy, a community of like-minded women and men on the banks of the Susquehanna River in the newly independent United States, a location that happened to be in the vicinity of Priestley's settlement after his forced emigration.

The theories of Hartley and Priestley provide a hopeful outlook, as well as a starting point, for effecting the changes that the French Revolution had failed to bring about. Coleridge's letters in 1794 and 1795 are rife with references to associationism and its optimistic attitude toward the future. In his early years, despite setbacks at Cambridge, Coleridge was confident that he could positively influence the course of human progress. Though he acknowledged his failings—dropping out of school, excessive drinking and carousing, problems with money, disappointing his brothers—he believed they were a result of the poor environment at Christ's Hospital, where he was sent to live after his father died. He laments to his brother George that "This Vice Constitution seems to have implanted in me, and Habit has made it omnipotent" (*CL* I: 125). Assuming that "Man is a bundle of Habits," Coleridge saw Hartley's theory as an explanation for vice as well as a solution for the cultivation of virtue and it gave him great hope (*CL* I: 85). "Believing in an all-loving Omnipotence," he was "an Optimist" (*CL* I: 145). Coleridge was convinced that through Pantisocracy he and the other members of the society would be reformed. This was the promise of Hartley's and Priestley's theories.

Though Coleridge never considered himself a materialist, the theories advanced by Hartley and Priestley appealed to him because they posit an "unshakable continuity from physical to spiritual" that coherently links theology and empirical psychology (Haven 481). The seamless blend of science and religion satisfied his "need to find a scientific explanation for his [religious] experience"

(487). Equally important, their theories provided him with a way to transform his spiritual beliefs and social objectives into material reality. Hartley's theory presents an optimistic prospect for "solving the problem of evil" (Leslie 632) on the personal and social level. The intellectual affections were "steps, that upward to their Father's throne / Lead gradual" (*RM* 52-53) and Pantisocracy would lead its inhabitants up these steps.

The plan was based on the principle of equality and a belief in the reciprocity of body and mind. The desire for equality was based on Hartley's interpretation of Christian doctrine and on Priestley's theological politics. Hartley emphasises "the natural Equality of all Men," which is one of "the genuine Dictates of true Philosophy" (II: 179). Priestley connects equality with equity, particularly with respect to the law and the justice system.[17] The laws of society must be administered fairly to all members regardless of rank, status, or affluence. Equality, according to these men, was the "Foundation for Unity amongst Mankind" (Hartley I: 333). Prelapsarian human beings knew no social distinctions. They lived in union with God and each other and would again after the apocalypse. These philosophers believed that instituting this sort of unity amongst members of society would accelerate the reunion with God. To establish such a foundation in Pantisocracy, Coleridge wanted to abolish individual ownership of property as well as artificial social distinctions. All members should work together to cultivate the land to provide for the commune. Southey did not necessarily agree with this plan and he and Coleridge argued "about the propriety of taking servants" with them (*CL* I: 119). Coleridge did not want to replicate the class distinctions and unequal division of labour found in British society. Only a society founded on equality could cultivate virtue and eliminate vice.

[17] See, for example, Joseph Priestley, *An essay on a course of liberal education for civil and active life* (1765) and *An Interesting appendix to Sir William Blackstone's Commentaries on the laws of England* (1772-73).

In addition to sustaining the community, the purpose of doing manual labour was to regulate the body. Theories of embodied cognition see the mind as part of the body. Thus, to progress through Hartley's intellectual affections, both body and mind need to be exposed to wholesome influences. Part of the Pantisocratic plan was a course of study that would "habituate the Mind to a right Method," cultivate a "factitious Sagacity," and facilitate members' development through Hartley's stages of change (Hartley I: 347). Attention to the body, however, was as much of a concern as attending to the mind. Reiterating Hartley's argument, Priestley asserts that "the mind is affected in consequence of the affections of the body and brain" (*Disquisitions* 28). Working the land was part of the plan to foster salubrious reciprocity between body and mind. Coleridge wrote that he hoped that by "*learning* to get my own bread by my bodily labour," he would be "thus disciplining my body & mind" (*CL* I: 170). Intellectual and physical exercise would improve the bad habits of the adult inhabitants who were "already *deeply* tinged with the prejudice and errors of Society" (*CL* I: 119). In this way, they would move through the stages of development in the manner outlined in *Observations*. Of course, this lifestyle required the appropriate setting and it is not happenstance that Coleridge and Southey wanted to relocate to the American wilderness. Living amidst nature was crucial to their plan.

Divine Nature

Coleridge and Wordsworth were not only reacting to the French Revolution, but also to the "newly organised and interlocking world of politics and economics" of late eighteenth-century England (Kramnick 10). Rural life was being disrupted as recently unemployed labourers moved to the city to find work, causing cities to expand. Adopting Hartley's and Priestley's view of the natural world and its relationship to the divine, both poets decried the encroaching industrial revolution.

They did not consider the "industry, poverty, crowds, noise, [and] corruption" (Levinson 36) of city life to be conducive to the cultivation of virtue. Based on the doctrine of association, they believed it would promote the opposite effect because it separated human beings from their proper environment. Coleridge was convinced that his own upbringing in London contributed to his "Vice Constitution" (*CL* I: 125). "Man," he averred, "was not made to live in Great Cities" (*CL* I: 154). Wordsworth also condemned the urban environment, which was "acting with a combined force to blunt the discriminating powers of the mind" (*PrW* I: 128). He was concerned that the insalubrious living and working conditions were reducing the mind "to a state of almost savage torpor" (128). Both men believed that human beings were more properly situated within a natural environment.

For this reason, Coleridge wanted to establish Pantisocracy along the undeveloped banks of an American river. Coleridge believed with Hartley that nature contains divine truths that are apprehensible to the human mind. Living in proximity to nature has "Moral Effects" that are imparted through association (*CL* I: 154). Nature, in Hartley's view, can only be understood in terms of the "Benevolence of the Deity" (I: 366). Accordingly, Coleridge theorises that when people interact with the natural world, "the Images of this divine *καλοκάγαθόν* [benevolence] are miniatured on the mind of the beholder, as a Landscape on a Convex Mirror" (*CL* I: 154). The effect of this action improves human nature because "the beholder" is associating with the best possible influence. Wordsworth, too, believes that in the countryside the "passions of men are incorporated with the beautiful and permanent forms of nature" (*PrW* I: 124). He thinks that divine principles are manifested in the natural world. For example, in the *Prospectus* to *The Excursion* (1814), he asserts that "Beauty" is "a living Presence of the earth" that surpasses Plato's "most fair ideal Forms" (42-43). A material phenomenon much like electricity

or air—intangible, but known by its effects—these divine principles are "Composed / From earth's materials" (*Pros.* 44-45). They act on the mind through the medium of the body. Both poets believe that living close to nature improves the propensity for virtue and morality. For Wordsworth, however, nature is directly connected to the aesthetic experience through poetry and language.

Embodied Poetics

In the 1798 *Lyrical Ballads* Wordsworth famously experiments with plain language to describe common but affective scenes of rural life. The experiment met with mixed success. Some critics, Francis Jeffrey most notably, lambasted it, but the first edition of the volume sold out and required a second edition (Jones and Tydeman 14).[18] The republication of the ballads gave Wordsworth an opportunity to describe the nature and scope of the experiment he had undertaken. In the *1800 Preface*, Wordsworth explains that the poems were meant to serve two purposes. First, they are a meditation on the mind, an attempt "to illustrate the manner in which our feelings and ideas are associated in a state of excitement" (*PrW* I: 126). Second, they attempt to alter the mind by swaying their readers' sympathies through the mechanism of association. Both of these aims are predicated on the concept of embodied cognition. In the first instance, Wordsworth portrays situations that show how the mind is affected by certain life experiences that are common to most people. In the second, he draws on Hartley's concept of philosophical language and its effect on the mind.

Wordsworth explores the action of the human mind by writing poems that depict common feelings that many readers have experienced: "maternal passions, . . . the last struggles of a human being at the approach of death, . . . [and] the

[18] See Donald H. Reiman, *The Romantics Reviewed* (1972) to read the reviews of *Lyrical Ballads*.

perplexity and obscurity which in childhood attend our notion of death," for example (*PrW* I: 126). In poems such as "The Thorn," "The Female Vagrant," or "We are seven," he represents situations that, though set in the English countryside, are generally universal irrespective of culture, social class, or other categories of difference. As such, they dramatise the "inherent and indestructible qualities of the human mind" (*PrW* I: 130). In other words, they present certain persistent features of the embodied mind that transcend history and geography. These experiences are transcendent because they are an enduring part of a human condition that is shaped by the constraints and affordances of embodiment. The grief of losing a child, the suffering imposed by war, and the difficulty of trying to explain death to a child are situations to which nearly everyone is vulnerable.

Other poems such as "The Idiot Boy" and *Goody Blake and Harry Gill* show the effects of strong emotion on the mind. They explore the "fluxes and refluxes of the mind when agitated by the great and simple affections of our nature" (*PrW* I: 126). While these situations are on the fringes of human experience, they illustrate the power of embodied emotion on the mind. Just as contemporary neuroscientists learn about the healthy mind by treating patients with disordered brains, Wordsworth sheds light on the mind's workings by portraying extreme situations. His overarching goal is to extrapolate human commonalities—of situation and feeling—in order to explore the notion of universality based on embodied cognition. This "embodied, emotive universalism" (*British* 151) is the basis of Wordsworth's poetic theory.

Drawing on Hartley's concept of philosophical language, Wordsworth believed that certain language has the ability to capture incontrovertible truths because it describes life situations that most people encounter. According to Hartley, philosophical language "is common to all Mankind, and" conveys knowledge and

feelings “on which they all agree very nearly, after a moderate Degree of Experience” (I: 137). That is, it is language that accurately describes universal experiences. The truths it represents, however, are not transcendental in an immaterial or ahistorical sense, but materially significant phenomena that most people understand because they have experienced them either directly or indirectly. Philosophical language, then, depicts certain embodied experiences that are apprehensible by most people. Upon hearing or reading such language, the listeners or readers can immediately relate to the feelings being communicated because it evokes a certain embodied, emotional response. In order to affect its readers, then, the language of poetry must arise “out of repeated experience and regular feelings” because it is more likely to capture universal situations (*PrW* I: 124). It was also more apt to capture the truths encapsulated in the natural world.

Both Hartley and Wordsworth believed that it was possible for people to commune with natural objects. By “rejecting Locke's 'ideas of reflection' and by suggesting that the laws governing matter and motion in the physical world are equally applicable to the mental one” (Lamb 1067), Hartley suggests that direct, unmediated contact is possible between the mind and objects in the world. Direct, sensory encounters with nature allow people to feel the beauty and goodness of the divine. Furthermore, if “the circuit connecting the impression of sensations with the expression of sentiments is kept intact” (1067), then philosophical language accurately articulates the feelings evoked by encounters with the natural and human worlds. For Wordsworth, this meant that poetry can effectively communicate universals if it uses “a more permanent and far more philosophical language than that which is frequently substituted by Poets” who employ the artificial poetic diction of neoclassicism (*PrW* I: 124). Philosophical language responds to and conveys the vagaries of real life. The language of poetry, in order to affect its readers,

must capture these commonalities. For this reason, Wordsworth chose to represent "subjects from common life" and to bring his "language as near to the real language of men" as possible (*PrW* I: 150). Portraying simple people in natural situations was the best way to ensure that his poetry used philosophical language, avoided artificial diction, and captured feelings that are common to much of the population.

Wordsworth claims that "the powers of language are not so limited as [one] may suppose; and that it is possible that poetry may give other enjoyments, of a purer, more lasting, and more exquisite nature" (*PrW* I: 156). This notion that language has the power to produce enduring, purifying change is also based on Hartley's and Priestley's theories. Envisioning thought as a material process, they assert that ideas are powerful enough to effect change on a physiological level. Refuting a dualist objection to his theory that claims "the mind cannot be material, because it is influenced by *reasons,*" Priestley asserts that "*reason*s . . . do ultimately move matter" because they have a "common property with matter" (*Disquisitions* 84-85). Priestley likens the effect of words and ideas to other non-mechanical physical processes such as explosions or chemical reactions which do not rely on "levers and pullies" (*Disquisitions* 85). Hartley, however, provides a physiological explanation of how this power works. Like other material phenomena, "Common ideas may . . . excite motory Vibratiuncles, and consequently be able to contract the Muscles" (I: 102). Ideas and reason are expressed through verbal or written language. Thus, they are perceived through the ears or the eyes and have a physiological effect on the listener or reader. Wordsworth also believed that language—whether poetry or prose—works directly on the body.

The power of poetry for Wordsworth is that it can create an embodied experience by evoking a visceral response. According to Wordsworth, this aesthetic response is a function of organic sensibility. The modifier "organic" points to two

important implications. The first is that sensibility is a bodily capacity. Second, as such it is an innate ability that is present in all people. Indeed, in Wordsworth's estimation it is the "Great birthright of our being" (*Prel.* 316) and "the essential passion of the heart" (*PrW* I: 124). Sensibility, in part, is the ability to perceive the divine in nature and it is poets' obligation to foster and develop readers' organic sensibility through poetry. To do so, however, they must adopt a "worthy purpose" and eschew artificial and unphilosophical language in order to produce the right kind of response (*PrW* I: 124). Like Priestley's concept of taste, or "the ability to feel sentiment," which is "acquired and educable" (Townsend 566), organic sensibility is governed by the laws of "blind association" (*PrW* I: 150). It has the ability to habituate readers to moral sentiment through repetitive exposure to philosophical language and rhythms of metre. Poetry facilitates moral growth by reinforcing past paths of association or introducing new ones.

In addition to describing affective situations, the *Lyrical Ballads* use language that is meant to produce a particular aesthetic response in readers. For Wordsworth and for Coleridge aesthetic experience is an emotional response that occurs on the physiological level. British empirical materialist theories of mind, particularly Hartley's detailed explanation of cognitive processes, provide the underlying mechanism that undergirds the relationship between feeling and moral growth. They help "make sense of certain longstanding cruxes in Wordsworth's linguistic and poetic theory" (*British* 70). Furthermore, they illustrate how Coleridge's early "accounts of feeling . . . implicate the body" and seek "to overcome . . . the Cartesian dualism of mind and body" (Miall, "Emotion" 37). The Romantic theory of embodied cognition illuminates the significance of feeling in Wordsworth's and Coleridge's theories of social reform.

Feeling, Moral Persuasion, and Social Reform

In both Hartley's theory and Priestley's elaboration of it, feeling is fundamental to cognition because it provides the physiological mechanism that connects the body and the mind. According to Hartley, sensations are "internal Feelings of the mind," which "may be called Ideas" (I: ii). Priestley reiterates this point by noting that "ideas . . . are not more than . . . those terms expressing actual varieties in our *mental feelings*, occasioned by the impression of external objects" (*Theory* xl). The term feeling can be a bit confusing at times because in some instances it refers to "experiences such as touch as when we appreciate the shape or texture of an object" and in others, to "some variant of the experience of pain or pleasure as it occurs in emotions and related phenomena" (*Spinoza* 3). For Hartley and Priestley, the two phenomena are very closely related because sensory feeling is the basis for emotional feeling. In their account of cognition, all sensory experience is accompanied by either pleasure or pain, which in turn provides the foundation for the two most basic emotional states—love and fear. According to Priestley, "all our passions are only modifications of these general ones of *fear* and *love*" (*Theory* xxxiii).[19] Feeling—both sensory and emotional—is at the very heart of these early theories of embodied cognition.

[19] Both Priestley and Hartley use the term "passion" to signify mental and emotional states. According to Thomas Dixon, the term "emotion," though in use during the seventeenth and eighteenth centuries, did not become established as a psychological category until the middle of the nineteenth century. Prior to the mid-nineteenth century, the terms passions, affections, appetites, or moral sentiments were used to denote various mental states, which included emotion as well as its professed binary, reason. Up to and during the Romantic period, the primary distinction was between passions, which were often equated with uncontrolled desire, and the more innocuous affections or appetites. This distinction extends back to "ancient debates between Stoicism and Christianity" and particularly to the influence of Augustine and Thomas Aquinas (Dixon 2). Even with the rise of discourse on sensibility and nerve theory, with its emphasis on the body, in the eighteenth century, the fundamental distinction between the violent passions and the mild appetites remained intact. In an 1820 lecture, Scottish moral philosopher Thomas Brown, an ardent objector to materialist theories of mind (particularly the one proposed by Erasmus Darwin in *Zoonomia*), subsumed the various terms under a single category, the emotions. By the 1860s, the term had been adopted into psychological discourse. See Thomas Dixon, *From Passions to Emotions: The Creation of a Secular Psychological Category* (2003).

While feeling is fundamental to Hartley's theory, including his taxonomy of moral development, neither he nor Priestley considers the implications of making emotion so central to cognition. The poets, however, were quick to see its significance in the formation of virtue and bringing about change at the ontogenetic and phylogenetic levels and to incorporate it into their own theories. In the first place, feeing is central to human experience. According to Coleridge, "Some home-born Feeling is the *center* of the Ball, that, rolling on thro' Life collects and assimilates every congenial Affection" (*CL* I: 86). It is the core around which experience coalesces. Second, the type of experiences individuals have over the course of their lifetimes—either pleasurable or painful—determines whether they are prone to virtue or vice. "Philanthropy (and indeed every other Virtue)," Coleridge notes, "is a thing of *Concretion*" that develops over time and must be cultivated (*CL* I: 86). In essence, the poets recognised that the affective quality of an experience is more important to association than the actual sensory content. As we shall see in the next chapter, this notion that feeling drives association was extensively developed by Tom Wedgwood. For Coleridge and Wordsworth, however, it provides a link between poetry and politics.

The poets recognised that privileging feeling in the cognitive process overturns the Enlightenment distinction between reason and emotion. For this reason, they considered a change of heart to be more effective than a change of mind, particularly when it came to morals and social reform. They believed that feeling is necessary for persuading individuals to change their behaviour for the better. The force of an argument must be felt as well as understood. Coleridge asserts that though the "sterile Brain" can frame a "Song / Elaborate & swelling," if "the Heart / Not owns it," the argument is futile (*CL* I: 147). Likewise, "Reasoning is but *Words* unless where it derives force from the repeated experience of the person

to whom it is addressed" (*CL* I: 120). In other words, the person being persuaded must connect emotionally to the argument being presented. Without feeling, reason remains abstract and empty. "To perceive . . . and to assent to . . . an abstract proposition—is easy—but . . . It is not enough, that we have once swallowed it—The *Heart* should have *fed* upon the *truth*" and assimilated it at the level of feeling (*CL* I: 115). This emotional transformation, Coleridge claims, is necessary to make "reformation practicable" (*CL* I: 120). Head must unite with heart, to use Coleridge's favourite phrase.

Wordsworth agreed that reason alone cannot bring about social change, but must be accompanied by visceral emotional experience. In the unfinished "Essay on Morals," he argues that there is "undue value set upon that faculty which we call reason" (*PrW* I: 103). In this essay, Wordsworth criticises the political reformers William Godwin and William Paley, who rely too heavily on reason in their social theories. In *An Enquiry Concerning Political Justice* (1793), Godwin argues that feeling should be subordinated to reason because feeling can lead individuals to make irrational choices that are not in the best interest of society as a whole.[20] He asserts that moral law appeals to reason rather than to feeling. Wordsworth disagrees, stressing that he

> know[s] of no book or system of moral philosophy written with sufficient power to melt into our affections, to incorporate itself with the blood & vital juices of our minds, & thence to have any influence worth our notice in forming those habits of which I am speaking. (*PrW* I: 103)

[20] See the famous hypothetical situation in Book II of the first volume of *Political Justice* that asks readers to consider whether it is more important to save an important figure (Bishop Fenelon) from a fire than his valet, even if that valet is a close relative.

This passage contains a clear appeal to association, but association by feeling rather than by reason. The critique it contains is twofold. First, Wordsworth asserts that a certain "power" is needed to "influence" readers to adopt a particular moral or political philosophy. Additionally, this power must be vigorous enough to "incorporate itself with the blood & vital juices of our minds." It must be forceful enough to become part of the readers' very being. Described in terms of "blood & vital juices," the mind in this passage is clearly embodied. He conceives of being not in immaterial terms, but terms of human physiology. Moral philosophy, according to Wordsworth, must appeal to the feelings, which act on the mind through the body.

Second, Wordsworth reproves the style of writing employed by these philosophers. The critique of Godwin's and Paley's use of language explains why he considers poetry to be an efficacious tool for social reform. The dry, abstract propositions of rational moral and political philosophy fail because they present "no image to the mind" and "convey no feeling which has any connection with . . . human life;" in other words, "they *describe* nothing" (*PrW* I: 103). Unlike poetry, with its "endless combinations of forms and imagery" (*PrW* I: 144), the abstractions of utilitarian moral philosophy do not correspond to real life situations. Therefore, they cannot evoke an emotional response. According to Wordsworth, language that is divorced from actual objects and experience, that is unphilosophical language, cannot be morally persuasive enough to reverse the course of present association or initiate new associative pathways. No "old habit will be foregone, or a new one formed by a series of propositions" that "convey no feeling" (*PrW* I: 103). It is clear that Wordsworth's goal is change on the ontogenetic level through the mechanism of association. The question remains, however, why he and Coleridge thought that the feeling that poetry evokes could so effectively bring about such a change. Hartley's and Priestley's materialist theories of cognition supply an answer.

Hartley describes the physiological mechanism that enables people to change their ingrained habits. He affirms for the poets that ontogenetic change is possible. While the species as a whole is moving toward perfection, it also possible for individuals to improve themselves by altering old patterns of mind and body. He affirms that "we have a Power of suiting our Frame of Mind to our Circumstances, of correcting what is amiss, and improving what is right" (Hartley I: 84). These changes occur on the physiological level. "[T]he Alterations which Habit, Custom, frequent impressions *&c*. make in the small constituent Particles," that is, the myelin, "alter the natural Tendency to vibrate" (I: 60). This process occurs in infancy as external stimuli act upon babies' nervous systems to form the habits they will retain throughout the course of their lives. It is also feasible that this sort of change can occur later in life if people are exposed to a different type of stimulus than has been customary. This new stimulus, however, must produce pleasant sensations and feelings, for associating moral behaviour with pleasure is the best way to cultivate virtue. Wordsworth argues that the visceral pleasure associated with benevolent action provides the most compelling impetus for developing good moral habits. When we do "*good* actions, we feel internally their beneficent effect; we are satisfied with this delicious sensation" and are motivated to continue behaving virtuously (*PrW* I: 104).

Feeling is a powerful influence on the body and mind, "as is evident in the visible effects of all strong passions, hope or fear, joy or sorrow, exultation or despair" (*Disquisitions* 28) and poetry can induce feeling through the action of the imagination. According to Hartley, imagined scenes are as affective as real situations, for they evoke the same neurophysiological response. He claims that "imaginary Scenes of Compassion and Sorrow, so far agitate the Brain, as to bring on the Actions of Sobbing and Weeping" (I: 253). While the response may "not [be] in the same

Degree, as when they arise from a strong real mental Cause," they still stimulate the same pattern of vibrations as in the actual situation (I: 254). Hartley distinguishes between vibrations, which only occur in the presence of direct stimuli, and "ideal vibratiuncles," which occur when a person remembers or imagines an event (I: 102). Though they are "feebler," they nonetheless induce an embodied physiological response (I: 58). It is worth mentioning that Hartley's use of the adjective "ideal" is distinct from Platonic and transcendentalist definitions that refer to immaterial archetypes. In Hartley's usage, the term refers to neural activity that occurs in the absence of the original stimuli and that replicates the initial physiological response, both in terms of brain and nervous systems events and at the level of embodied emotional response. In contemporary terms, Hartley's vibratiuncles are equivalent to action imagery. Mirror neurons, a subset of motor neurons, are activated when a person imagines an event but takes no action. This process "involves many of the same neural correlates as executing the action" (Ellis 10). In other words, stimuli such as poetry that provoke the imagination have a real effect on the body, a fact that points to the embodied nature of mind.

The notion that poetry produces feeling by inducing vibratory motions that "leave a perceptible Effect of . . . a . . . permanent Nature" derives from Hartley's theory (I: 57). The aesthetic experience reinforces existing or establishes new associative connections in the readers' mind. Poetry accomplishes this goal by presenting affective scenes for the reader to contemplate until "an emotion . . . is gradually produced, and does itself actually exist in the mind" (*PrW* I: 148). Stimulating an emotional response, poetry engages the imagination, which according to Hartley and Priestley is a material process. In the *1800 Preface*, Wordsworth also asserts the corporeal power of the imagination, claiming that "the power of the human imagination is sufficient to produce such changes in our physical nature as

might almost appear miraculous" (*PrW* I: 150). Engaging the imagination, poetry that employs philosophical language produces a change in its readers in a manner that is consistent with Hartley's account of moral perfectibility. As the reader is "in some degree enlightened, his taste exalted, and his affections ameliorated," he is led through Hartley's intellectual affections, toward moral sense (*PrW* I: 126). The only way to achieve this goal, however, is through feeling. Poetry must be, in Coleridge's term, "a Convulser of the Heart" (*CL* I: 122). That is, it must appeal to the feelings.

With respect to social reform Wordsworth and Coleridge believed that change must occur at the individual level. One way to understand the Romantic emphasis on individuality is through Hartley's taxonomy of intellectual affections and the relationship it establishes between ontogeny and phylogeny. Phylogenetic change results from the cumulative effect of ontogenetic change. Moral behaviour at the individual level eventually culminates in increased justice and equity in society as more people evolve toward moral sense. As individual members of society develop this sense they enact moral relationships with God, the natural world, and each other. Viewed from this perspective, the Romantic emphasis on the individual is neither solipsistic nor evasive of social reality, but integral to the type of social reform New Historicists claim Wordsworth and Coleridge avoided.

Wordsworth's remarks about the power of the imagination and the efficacy of poetry to produce emotional change at the embodied level indicate that he did not believe that "'Thinking things' and their products, thoughts . . . suffer no interference from the material and social world" or that "thought is free—the mind is its own place, the world is another" (Levinson 40). As we have seen, the opposite is true. Wordsworth viewed the mind as an embodied physiological process that is integrally implicated in the natural world. Likewise, he saw the power of language not in metaphysical terms, but in terms of embodiment. Poetry and prose, he argues

"sheds no tears 'such as Angels weep,' but natural and human tears . . . the same human blood circulates through the veins of them both" (*PrW* I: 134). Wordsworth wished not to send his readers into a transcendental mental realm, but "to keep [them] in the company of flesh and blood" (*PrW* I: 130). The bodily metaphors that Wordsworth uses to describe language indicate his indebtedness to the materialist theories of cognition that were in circulation during the late eighteenth century. Coleridge, too, took recourse to these theories in formulating his plans for personal and societal reformation. "Hartley's psychology set the course for Coleridge's thinking on a set of issues relating to feeling" that influenced his theory both in his early career and beyond (Miall, "Feelingly" 151). Both men, as we shall see in subsequent chapters, were participants in the debate about the relationship between mind and matter that was initiated by Priestley's edition of Hartley's theory.

The materialist cognitive theories advanced by Hartley and Priestley helped engender a shift away from the Enlightenment view of the world, which dichotomised human beings and animals, reason and emotion, and body and soul. They set the stage for the less polarised Romantic view. Though the Newtonian universe was "complex, surprising and beautiful in its order," in it, humanity with its "thinking mind must always be an observer and a stranger" (Piper 9). By situating human beings within the natural order and spiritualising matter, Hartley and Priestley initiated the transition away from a mechanistic view of the world to a more organic one. Yet, their empirical theories of mind posit a mind that is passive and entirely subject to physical necessity. While Coleridge would eventually claim to reject materialist theories of mind because they are "merely mechanic," in fact the materialist theory of mind was developed rather significantly during the Romantic period (*CL* IV: 579). In the hands of Erasmus Darwin, Humphry Davy, and Tom Wedgwood, the theories of Hartley and Priestley took on a new dimension that

provided Wordsworth and Coleridge with even more fodder for their theories of mind and imagination. From the Enlightenment beginnings of Hartley's theory emerges the materialist theory of the *active* mind.

> Friction excites electric activity—May not the peculiar friction of external objects excite an analogous activity of our nerve assuming that Light, Heat, Electricity is the same matter differently elicited. Sight, Touch, Hearing &c may be the different modes in which the Spirit of Animation is excited in the fibrillae of the senses.
>
> --Tom Wedgwood

> Will, Ardent but indefinite hope: These constitute the great elements of that feeling which always appears as *something above* the common habits of thought . . . which though derived from the senses & the feeling bears very little relation to *them*, which is as it were matter converted *into mind*, spirit animating thought & feeling embodied in reasoning.
>
> --Humphry Davy

Chapter 2 Animating the Body: British Empiricism's Active Mind

While Hartley's theory of embodied sentience proved groundbreaking and influential in the late eighteenth century, it does have its flaws. First, similar to Locke, Hartley proposes a theory in which the mind passively registers experience. In Hartley's system it has little, if any, power to mediate sensation, thought, or emotion. Second, as a result of this passivity, his theory strips human beings of free will. Entrenched in Newtonianism, Hartley understood the laws governing nature in terms of classical mechanics and mathematical physics. He accounts for the mind in terms of the "billiard-ball model [that] had become standard in explaining the nature of the universe" (Hill 22). When the laws of physics are applied to the human mind, however, the mind assumes the characteristics of other objects that are controlled by these laws. That is, it becomes passively subordinate to forces in the external world, just as an apple does not choose to fall from a tree but is subject to gravity. Though Priestley redefines matter as an active substance, he does not entirely solve the problem inherent in his and Hartley's theories of mind. Matter may be capable of initiating movement, but it is not exempt from the laws of physics. The mind, under

this system, is still constrained by mechanical principles. It is "the general disposition of the mind," Priestley asserts, "to conform to its circumstances, and to be modified by them" (*Theory* xxxvi). In this view, the mind is a quiescent catalogue of sensory input. "[T]he slave of chances," in Coleridge's words, it is shaped by environmental factors (*BL* I: 111). Character formation is circumstantial.

The implication of this passive theory of mind is that "the doctrine of *necessity* follow[s] from it" (*Theory* xxvii). According to this doctrine, all actions are causally determined rather than the result of choice. Consequently, human beings lack the power of self-determination. What appears to be free will is simply a reflexive response.[1] Hartley addresses the Doctrine of Necessity in the conclusion to the first volume and in the second volume of *Observations,* acknowledging that both thought and action arise from "mechanical Causes" (I: 500). He attempts to mitigate this consequence by distinguishing between philosophical free will and "Free-will in the popular and practical sense" (I: 501). Philosophical free will, he argues, is "the Power of doing different Things, the previous Circumstances remaining the same" (II: 56). It is the capacity to respond differently when confronted with a familiar set of circumstances. Practical (or popular) free will, however, is the ability to voluntarily recall thoughts, to act or refrain from acting on an impulse, and to make everyday decisions. Popular free will, in Hartley's theory, "is not only consistent with the Doctrine of Mechanism, but even flows from it" because "the voluntary and semivoluntary Powers of calling up Ideas, of exciting and restraining Affections, and of performing or suspending Actions, arise from the Mechanism of our Natures" (I: 501). In other words, a certain limited agency with respect to the quotidian choices of daily life is part of the human design. Philosophical free will, on the other hand, "cannot take place in Man . . . it is an impossibility" (II: 56). True freedom of choice,

[1] For a twenty-first-century rendition of this position that offers experimental evidence and EEG data as proof of its validity, see Wegner.

according to Hartley's theory, is unattainable because human beings are constrained by environmental conditioning and their own physiology.

Given the theological context of Hartley's and Priestley's theories, the Doctrine of Necessity did not trouble them. Their belief in the perfectibility of humankind, which ever moves toward reunion with God, makes the ultimate outcome of Necessitarianism optimistic. To others, however, the idea that "A Man may speak, handle, love, fear, *&c*. intirely by Mechanism" was untenable (Hartley I: 508). In March 1801, Coleridge wrote to Tom Poole that he had "overthrown the doctrine of Association, as taught by Hartley" (*CL* II: 706). His public rejection of associationism, however, did not appear until several years later in *Biographia Literaria* (1817). Coleridge eventually rejected the Doctrine of Necessity because it posits "that the will, the reason, the judgment, and the understanding, instead of being determining causes of association, must needs be represented as its *creatures*, and among its mechanical effects" (*BL* I: 110). Coleridge objected to the distinction between philosophical and practical free will because he needed to see the human subject as an autonomous and entirely unconditioned being. Like many others, he found the idea that human beings are causally determined morally repugnant and inconsistent with phenomenological experience.

While perhaps their best known detractor, Coleridge was not the only one who disagreed with Hartley and Priestley.[2] In general, anyone who accepted the dualist hypothesis rejected their theories. One opponent, Thomas Brown, critiques

[2] For just a small sampling of work by objectors, see Caufield*, An essay on the immateriality and immortality of the soul, and Its Instinctive Sense of Good and Evil; In Opposition to the Opinions advanced in The Essays introductory to Dr. Priestley's Abridgment of Dr. Hartley's Observations on Man, etc.* (1778); Jacob Bryant, *An address to Dr. Priestley, upon his Doctrine of Philosophical Necessity Illustrated* (1780); Joseph Benson, *Remarks on Dr. Priestley's system of materialism, mechanism, and necessity, etc.* (1788); and David Simpson, *Strictures on religious opinions, and the best human means of ascertaining the genuine doctrines of Christianity: designed as an antidote against the theological writings of Doctor Priestley and other heterodox teachers* (1792).

Hartley's "fanciful comparisons of the affections of matter and mind" and the supposition that he "had reduced all the phenomena of mind to corpuscular motions" (*Treatise* I: 319). He, like many others, refuses to accept Hartley's theory because of its materialist premise. This response, which is exemplified by Coleridge's later rejection of materialist theories of mind (after his initial enthusiastic adoption of it) represents just one type of reaction to Hartley's and Priestley's work. Unfortunately, Coleridge's response is often seen as epitomising *the* Romantic view.

Given the general understanding of British empiricist theories of mind, scholars often consider Coleridge's discussion in the *Biographia* "symptomatic of how Romantic psychology rethinks associationist psychology" (Faflak 26). Until now, responses to Hartley's work other than Coleridge's rejection in the *Biographia* have remained unnoticed. The authors of these other responses did not categorically dismiss Hartley's and Priestley's early cognitive theories, but were inspired to improve upon this work by formulating their own materialist theories that account for the mind in terms of its activity. Scientists such as Erasmus Darwin, Humphry Davy, and Tom Wedgwood offer materialist theories of the active mind. They understood that an entirely passive theory of cognition fails to adequately account for the phenomenological experience of cognition. After all, people generally feel that they have some control over their thoughts and actions and experience thought as an active process. Though these scientists reject certain aspects of the early theories, the Doctrine of Vibrations for example, they accept the materialist premise that the mind does not function independently of the body. They use the empirical findings of Hartley and Priestley as a starting point for their own theories of embodied cognition.

This chapter examines the cognitive theories advanced by Darwin, Davy, and Wedgwood, along with their implications. In addition to formulating active theories

of mind that influenced Wordsworth's and Coleridge's theories of imagination, these men also contribute to conversations about characteristic Romantic concerns, such as creativity, genius, transcendence, the sublime, and emotion. Furthermore, they participate in an anthropological project that theorises about "how human beings, individually and as a species, made the transition from the state of nature to society" (Bewell ix). Such a study of human culture was frequently part of the cognitive project. Cognitive theorists, including Wordsworth and Coleridge, thought that if they could understand how the human mind works, they would also be able to unravel the history of social formation and, thus, determine the best model for contemporary society. Each of these scientists, in his own way, addresses some aspect of these questions. Their materialist theories of cognition offer explanations regarding the origin of society, the production of knowledge, and the phenomenological categories of human experience, such as transcendence, that seem to connect human beings synchronically across the diachronic limitations of time. They provide materialist explanations for phenomena that have traditionally been understood in terms of transcendental philosophy. Examining their theories sheds new light on Wordsworth's and Coleridge's engagement with these same topics. This chapter lays the groundwork for an interrogation of the poets' theories in light of empiricist and materialist influences.

This second wave of Romantic cognitive science was initiated by Erasmus Darwin with the publication of *Zoonomia* in 1794. Recognising that from a phenomenological perspective cognition is an active process, Darwin attempts to account for this activity in his theory of mind. He advances a biological model of cognition that departs radically from Hartley's "physiological Newtonianism" (Danziger 187). Consequently, he instigates a paradigm shift away from the Newtonian worldview toward the organic *Weltanschauung* that has become

affiliated with literary Romanticism. As Richardson notes, the term organic, which evolved into a "specialized term freighted with metaphysical import" as a result of Coleridge's use of the word in the *Biographia*, takes its origin from British empiricism (*British* 70).[3] It is necessary to flesh out and explicate the domestic theories that inform the poets' work in order to understand it more accurately within its historical context. Darwin's account of active cognition contributes to this understanding. Though his account still limits free will, his theory of knowledge, which is based on the concept of mimetic learning, provides insight into the importance of emotion in the Romantic period. According to Darwin, language, culture, and society originate in the human capacity for embodied emotion.

Embodied emotion is also a crucial component of Humphry Davy's theory of mind. Influenced by his friendships with Coleridge and Wordsworth, Davy saw the mind's activity primarily in terms of creativity and the capacity for genius. He wanted to understand what enables human beings to produce art, make scientific discoveries, and invent technology. The passive theories of mind proffered by Hartley and Priestley do not provide a satisfying account of creativity and genius. They see language, for example, as well as other cultural inventions, as a result of divine intervention—a gift from God. Davy's goal was to account for the generative aspect of the human mind. He speculates that emotion is the driving force behind all great thought, literary and scientific. Genius and sensibility, or the capacity for deep feeling, are necessarily intertwined. When pursuing knowledge or reading the works of another, "an enthusiastic feeling is awakened which collects, *concentres*, gives *motion & feeling* to all knowledge," and "warms the imagination; new thoughts or new combinations are the result.—The creative Genius begins its operation" (RI

[3] According to Richardson, critics fail to take the empirical origins of the term into account when considering Romantic organicism. He cites McGann's *The Poetics of Sensibility* (1996) as a prime example.

HD/22/c 47). Davy conceives of the "enthusiastic feeling" that activates and "gives *motion*" to "all knowledge" and sparks "new combinations" of ideas in terms of chemical processes, in which different substances act and react on each other, sometimes combining to produce dramatic results. Davy speculates "that perception & muscular actions are the result of some species of changes in organs," which "are produced by actions & attractions infinitely more subtile" than those described by the law of physics (RI HD/13/h 13). They could, however, be accounted for in terms of "knowledge of Sublime chemistry" in his estimation (RI HD/13/h 12). In his theory, then, we find elements of the poets' ideas elaborated in terms of chemistry, his primary area of research.

Bringing Davy's materialist theories to light enables a more accurate understanding of British empirical accounts of mind, particularly the ways in which they were modified during the Romantic period. One of his more interesting contributions to Romantic thought, though, is his materialist theory of transcendence. Like Coleridge and Wordsworth, Davy had experienced the thrill of the sublime firsthand. Thus, he thought that "the study of nature must always be more or less connected with the love of the beautiful and sublime" (qtd. in Sharrock 66 and Jay 298). Davy was also interested in the synchronic function of knowledge that allows people in the present to connect with great thinkers from the past. He wanted to account for the sense that human beings are connected synchronically, that we can relate to and understand previous peoples in earlier eras. Drawing on the work of his predecessors—Hartley, Priestley, and Darwin—Davy sought to explain these phenomenological experiences within an empirical context.

Emotion also fascinated Tom Wedgwood. He believed that it has a greater impact on the process of association than Hartley and Priestley had acknowledged. He extends Hartley's theory by asserting that feeling rather than ideas drive

association. Furthermore, he claims this happens on a subpersonal, or unconscious, level. In this way, his theory prefigures twenty-first-century research on the relationship between emotion and action. He was also interested in how a physiologically universal process—embodied cognition—could result in such different perceptions in different people. To account for this phenomenon, he examines the perception of time, which could seem to pass quickly or drag on. Finally, his preoccupation with emotion led him to advocate for pleasure rather than pain as the primary means for building character and motivating people to moral behaviour, especially children. His discussion of pleasure and pain participates in a larger cultural shift that was occurring toward the end of the eighteenth-century that also privileges pleasure over pain.

This phase of Romantic cognitive science spanned from approximately 1794, when volume one of *Zoonomia* was published, to 1805, the year Wedgwood died. During this period, materialist scientists continued to develop theories of embodied cognition that were at odds with the common scholarly understanding of the British empirical account of mind. The work done by Hartley and Priestley to revaluate the body was taken up by Darwin, who reframed it as vital and active rather than passive and inert. Widely circulated in the eighteenth century, his work inspired Davy and Wedgwood to formulate their own materialist theories of mind. The work examined in this chapter provides an important corrective to standard accounts of British cognitive empirical theory that only consider Locke's and Hartley's contributions to this fraught topic of debate and sets up the analysis of the poets' theories in the chapters that follow.

From Newtonian Mechanics to the Science of Life: Erasmus Darwin

Though a relatively obscure figure in the twenty-first century, overshadowed by his grandson Charles, Erasmus Darwin was celebrated during his lifetime. Famous

as a physician, inventor, and advocate for industry, he was also England's premier poet "until the anonymous publication of . . . *Lyrical Ballads* in 1798 changed the landscape of English poetry" (Page 151). His whimsical translations of Linnaeus's taxonomy of plants in *The Botanic Garden* (1791) entertained and instructed his readers with its heroic couplets and extensive scientific footnotes. His most significant contribution to science, however, is his pioneering work in biology, which initiated the shift away from the mechanistic Enlightenment view of the universe to the organic view. In the previous century, Newton had established the laws of physics that see matter as inert until acted upon by an external force. The law of inertia, along with his many other discoveries, contributed to the Enlightenment understanding of the universe as a static place, "ruled by unchanging law" (Piper 8). In this view, material objects are lifeless and mechanical, like a clock before it is set into motion by the clockmaker. In addition to characterising Enlightenment thinking, this worldview also dominated scientific enquiry until the 1790s when Darwin offered a new way to look at the material world.

While physics successfully explains many aspects of the material world, when physicians such as Hartley apply it to the human body it fails to provide a satisfying account of most anatomical processes. Dissatisfied with Newtonian physiology, which treats "the body as an hydraulic machine" by attempting "to explain the laws of life by those of mechanism and chemistry," Darwin created a new taxonomy to elucidate the laws that govern organic matter, in contradistinction to inanimate matter (Darwin 10). Instead of explaining anatomical systems in terms of apples dropping from trees or billiard balls ricocheting into side pockets, Darwin formulates a set of laws that apply only to living beings. In a move as bold as Priestley's redefinition of matter, he proposes a new category of motion, which he calls "the principle of organic life" (344). First, he divides the material world into two

categories—inanimate and animate—then he asserts that Newton's laws apply to the former and his new laws to the latter. To deduce the principles that govern animate matter, Darwin adopted a methodology of observation, comparative anatomy, and sensory experimentation. He uses cross-species comparison to determine the common attributes of all living creatures—from molluscs and mushrooms to plants and people. The primary distinction between living and dead matter, he concludes, is the capacity for self-initiated motion. "Animal motions," he notes, "have no mechanical proportions to their cause" (19). This is the primary distinction between animate and inanimate objects.

Darwin defines motion broadly to include both the ability to move from one place to another or take action in the world—which plants and other lower order life forms cannot—and, more generally, to indicate the life force or vital principle. Contrary to Newtonian physiology, Darwin's theory asserts that an organic principle that is different from other natural forces causes "all the motion of the animal and vegetable world" (12). This includes movement "of the muscles, which perform . . . locomotion," as well as "those of the organs of sense, which constitute their ideas" (12). In other words, organic motion can be understood in terms of the capacity for self-initiated motion and for thought and feeling. The term feeling is, again, used in both senses, referring to both the ability to gather sensory data from the world and to have emotional responses. Darwin calls this capacity for feeling, sensitivity, which is one of the four types of organic motion—along with irritation, volition, and association—that he delineates. These "four different modes of action" encompass the entire range of activity in living beings, including all anatomical processes from the function of vital organs to muscular movement to sensory perception and, finally, cognition (30).

Darwin calls the principle of organic life *sensorial power* or *the spirit of*

animation" To avoid the sort of persecution experienced by Priestley, whose laboratory was burnt to the ground in the Church and King riots, Darwin uses deliberately ambiguous language to describe this power. He uses both terms interchangeably throughout *Zoonomia*. Nonetheless, *sensorial power* is the more accurate term because it avoids the misleading dualist connotations inherent in *spirit of animation*. Darwin also makes seemingly contradictory claims about its powers. For example, while he asserts that sensorial power is "capable of existing . . . separately from the body" (77), he also contends that it is an organic substance that is "perpetually renewed by the secretion and production of it in the brain and spinal marrow" (57). This ambiguity is a rhetorical tactic used to protect himself from charges of apostasy in an era in which radical science and radical politics went hand in hand and were prosecuted mercilessly.[4]

Darwin professes to divide "the whole of nature" into "two essences or substances" in the common manner of opening discussions of cognition (12). As in the traditional dualist approach, spirit "possesses the power to commence motion" (12). Yet, Darwin subverts this apparent dualism by defining spirit as a subtle form of matter, much like the forces of gravity, electricity, magnetism, "combustion, fermentation, [or] combination," rather than as an immaterial substance (344). He uncouples the notion of spirit from the concept of immateriality by equating spirit with the imperceptible but still material Newtonian forces of motion. Like gravity, it is not "cognizable to our senses, except by its effect" (16). The best way to understand sensorial power, given Darwin's obscure language, is in terms of thermodynamics. Like combustion, it exists in both potential and kinetic states, but to manifest kinetically it must be embodied. Unlike the soul, a word Darwin sedulously avoids throughout his manuscript, sensorial power cannot exist as a disembodied entity, but

[4] In addition to Priestley, consider the case of John Thelwall, who is discussed in greater detail in Chapter 4.

only as a form of energy.[5] It "resides in the brain and nerves" and, contrary to the dualist conception of spirit or soul, has no capability to act outside the body (29). Its primary function is to transduce sensory data into mental phenomena.

Like Hartley with vibrations, Darwin provides an account of how sensorial power functions as a means of neural transduction. Following the commonly accepted postulate that "*No two things can influence or affect each other, which have not some common property common to both of them*," Darwin hypothesises that sensorial power is radically mutable (81). That is, it is able to assume the properties of any object with which it comes into contact. He claims that sensorial power can "assume the property of solidity, or disrobe of it occasionally" (81). In this way, it gathers data from external objects in the world and transmits this information to the body as well as to the mind. When sensorial power "communicates or receives motion from solid bodies, [it] must itself possess some property of solidity. . . . [A]t the time it receives other kinds of motion from light, it must possess that property" (81). Sensorial power's mutability explains how human beings are able to perceive such widely varying phenomena as solid objects, rays of light, and odours, for example. Radical mutability distinguishes sensorial power from Newton's forces of motion because it is the property of an active (rather than static) force of nature. It is a material substance that is capable of self-initiated motion.

Having conducted numerous ocular experiments, Darwin concluded that perception is an active process.[6] Many of his experiments—gazing at coloured fabric, pressing the eyes, or observing the horizon after spinning in a circle, to name a few—

[5] The word "soul" appears only twice in *Zoonomia*: once in the opening epigraph to first volume once in an epigraph to the second volume.

[6] Darwin designed these experiments as a way to explore the phenomena of perception directly. He invites his readers to try them on themselves in order to demonstrate the validity of his hypotheses. Davy, Wedgwood, and Coleridge conducted many of these experiments on themselves. See Section III, "The Motions of the Retina Demonstrated by Experiments," and Section IX, "Of Ocular Spectra," in *Zoonomia, volume I* for the details of Darwin's experiments.

produce afterimages such as seeing a green circle on the inside of one's closed eyelids after staring at a piece of red silk, sparks on the inside of the eyelids, or a rocking horizon after spinning. These results led Darwin to believe that the "spectra of the eye are not owing to the mechanical impulse of light impressed on the retina," for if the "spectra were impressions on a passive organ, they must continue as they were received last, or not continue at all" (23). He speculates that something must cause the initial sensory data to transform into an image that is different from that which is originally perceived. The "immediate organs of sense," Darwin claims, "posses a power of motion" (19). This power is sensorial power, which transforms sensory data into first percepts, then into ideas, thoughts, emotions, and other mental states. Unlike Hartley's vibrations, which simply convert one physical quantity into another, thus enabling perception, sensorial power actively directs cognition. In addition to actively processing external stimuli, it also "determines the nature of the response," depending on whether the stimulus is pleasurable or painful (Danziger 193). In this way, Darwin tries to account for the phenomenological sense that thought is active.

Despite his attempt to account for the activity of cognition, Darwin still limits free will. In his system Hartley's mechanical determinism gives way to biological determinism. Darwin argues that sensorial power acts according to desire or aversion. That is, it decides how to respond to external stimulus by initiating actions to pursue it further or to avoid it. This ability to act from volition indicates that organisms have some degree of agency. By granting sensorial power freedom of choice, Darwin tries to avoid the problem that "has confounded the metaphysicians, who have disputed about free will and necessity" (274). One problem with Darwin's account of free will is that it displaces the will from the conscious being to a subpersonal process. Furthermore, decision-making power is still rather limited.

Given the same set of sensory stimuli, an organism—humans included—has the capacity to respond differently than it did previously. In this sense, we are free from the Doctrine of Necessity. Nonetheless, "with respect to freewill, it is certain, that we cannot will to think of a new train of ideas," but are limited by how "far . . . our knowledge of the subject extends" (Darwin 93). That is, we are constrained by our sensations and perceptions, by what we have actually seen, heard, touched, and so forth. We cannot originate entirely new ideas and concepts, but are confined to combining and recombining the percepts that are extant in the mind. In this respect, Darwin's theory recalls Coleridge's description of fancy in the *Biographia*.

Darwin's theory of cognition and its attendant epistemology are essentially mimetic. Cognition itself is nothing more than a process of imitation. According to Darwin, the act of thinking repeats the physiological motions that occur in the nervous system at the time objects are sensed. Furthermore, perception itself is a mimetic process that replicates the subtle movements made by objects in the world. This view assumes Priestley's conception of matter as an active substance that is constantly in motion. Ideas, according to Darwin, are "those notions of things, which our organs of sense . . . acquainted [us] with originally" (17). That is, they are percepts in the mind that, for the most part, correspond to external objects. These "perceptions themselves," however, "are copies, that is, imitations of some properties of external matter" (175). Sensorial power, with its radical mutability, replicates within the sensorium the essential characteristics of external objects, which Darwin conceives in terms of motion. Perception and thought, then, are imitative acts. We perceive the world through mimesis. We also learn mimetically by observing other people. When we watch someone perform an action, sensorial power copies and repeats the motions within the nervous system; this is how ideas are transmitted to the sensorium and to the mind. When we perform the action, we

"transfer" the "actions" of the "nerves to the muscles of the limbs" (Darwin 174). That is, we repeat the so-called nervous motions at the gross muscular level. Cognition and action, in this view, comprise a mimetic cycle that produces knowledge on an embodied level.

Emotions, too, are in part acquired mimetically. According to Darwin, children learn certain emotions by imitating the movements of others. By smiling, frowning, scowling, and so forth, they stimulate the emotional feelings associated with each of these muscular actions. In this view, which has recently been proven correct, "facial configurations differentially affect . . . peoples [sic] felt emotions" (Glenberg et al. 121). Recent studies, which were inspired by researchers' own encounters with feeling certain emotions when "contracting various facial muscles," have shown that individuals experienced "strong physical sensations when they contracted muscles that produced facial configurations that resembled the universal facial expressions for certain emotions" (Levenson, Ekman, and Friesen 364). The relationship between facial expressions and emotion indicates that feeling originates in embodied action. According to Darwin, "All emotions and passions arise out of the exertions of . . . the animal sensorium," though they are not instinctual (46). Rather, they are a product of association by which muscular actions become affiliated with sensations of pleasure and pain.

Once again, sensory feeling is connected with and gives rise to emotional feeling. Emotional feeling originates in infancy with our first movements and their attendant pleasurable or painful sensations. For example, Darwin theorises that infants tremble in reaction to the unpleasant shock of birth and this action becomes associated with fear. This "early association of motions and sensations persists throughout life;" henceforth, "fear produces a cold and pale skin, with tremblings, quick respiration," and other physical symptoms that are experienced as part of the

original birth trauma (102). Happiness, on the other hand, begins with breastfeeding, as sucking naturally causes the corners of the infant's mouth to pull upward into a smile. This enjoyable experience and its attendant motions of the mouth persist throughout life, so that when we feel pleasure we smile.

The significance of embodied emotion is manifold. Not only does Darwin propose emotional cures to physical ailments, such as prescribing "cheerful ideas, hope, [and] affection" along with opium or bark to treat "ague," but he also sees it as the foundation of society (70).[7] Emotion, according to Darwin engenders both language and sympathy, which he sees as the twin foundations from which society originates. Darwin's theory of language is deeply embodied. He argues that language evolved from "natural signs," or body language (101).[8] Natural signs are the outward expression of emotion that is observable to others. These external displays of emotion "are the natural signs by which we understand each other" (101). For example, crying is "the natural or universal language of grief" (103). According to Darwin, due to the mimetic nature of cognition we understand these natural signs when we observe them in others because they are repeated in the sensorium. When we see someone cry, wince, or laugh, we involuntarily imitate these actions in our minds. This enables us to feel what that person is feeling and to understand the facial expressions and actions. Natural language is the precursor to speech and

[7] Darwin drew on the Brunonian system established by John Brown. Explaining all disease and their cures in terms of the simple principle of excitation, Brown attempted to formulate "a physiological system that would exhibit a kind of Newtonian balance" (Fullmer 78). Brown developed his system in Edinburgh after Darwin had already matriculated from the University of Edinburgh Medical School, thus Darwin must have read Brown's *Elementa Medica* (1780) or learnt about his theories from his friend and colleague Thomas Beddoes. The subject of Brunonian medicine was so controversial that in 1802 at Göttingen, just a few years after Coleridge had studied there, "the cavalry was called out to put down rioting between Brunonians and their critics" (Levere 203). For another example of a nosology that connects emotion and health besides *Zoonomia*, see William Falconer's *A Dissertation on the Influence of the Passions upon Disorders of the Body* (1788).

[8] For an overview of the various theories of natural language that were in circulation during the Romantic period and their relationship to twentieth-century linguistic theory, see Richardson, *British Romanticism*, pp. 74-92.

writing: “from this slender basis is built all human language. For without some natural signs, no artificial ones could have been invented or understood” (101). Language in this view is not, as many twentieth-century linguists have argued, a random set of signs that represent arbitrary connections between signifiers and the objects they signify.[9]

Instead, language originates in the body. Theoretical work done by Mark Johnson and George Lakoff in the 1980s and 90s posits that language and even thought itself is structured by metaphors that are based on embodied experience. That is, in language human beings map knowledge from the bodily domain onto objects and experiences in the external world as a way to conceptualise and articulate them. Their work has been substantiated by twenty-first-century empirical studies. For example, Gibbs argues that “embodied activity is an essential part of the grounding for thought and language” and cites evidence from “both cognitive linguistics and psycholinguistics” (“Metaphorical” 88). Similarly, Zwaan and Madden argue that language comprehension occurs on an embodied level (see Zwaan and Madden). Spivey, Richardson, and Gonzalez-Marquez, on the other hand, point to the relationship between language and perceptual-motor and image-schema. Essentially, they argue that the infrastructure of language relies on these embodied cognitive processes (See Spivey, Richardson, and Gonzalez-Marquez).

Recent research supports also Darwin’s theory by positing “strong connections between language and emotion” (Glenberg, et al. 120). Challenging the Chomskeyan notion that language developed suddenly and unexpectedly, twenty-first-century cognitive theory posits that it is both embodied and emotive. According to V.S. Ramachandran, it is likely to have evolved “from more primitive gestural

[9] See, for example, work by Ferdinand de Saussure, Noam Chomsky, Roland Barthes, Jacques Lacan, Claude Levi-Strauss, and countless others.

language" and the impulse "to produce emotional calls" ("Imitation" 2-3).[10] Cognitivist theories that see language primarily in terms of symbol manipulation often ignore the social function of language. According to Darwin, as well as Ramachandran, society evolved, in part, from people's need to understand and respond to each other's feelings. This ability to communicate with each other enables social animals to form societies. Furthermore, embodied language is necessarily sympathetic. Thus, it facilitates the development of social networks.

Society developed in part, according to Darwin, from the overall cognitive capacity for sympathy. Like most eighteenth-century moral philosophers, Darwin saw sympathy as crucial for the formation not just of society but moral society. Darwin's concept of sympathy is similar to Adam Smith's in *The Theory of Moral Sentiments* (1759), but with one critical difference that distinguishes his Romantic theory from Smith's Enlightenment one. That difference is embodiment. According to Smith, even if "we have no immediate experience of what other men feel," we can form an "idea of the manner in which they are affected . . . by conceiving what we ourselves should feel in the like situation" (2). Smith's theory is based on imagination, or the ability to picture ourselves in similar circumstances and to approximate what the other person might be feeling. Yet, for Smith sympathy is primarily a disembodied mental experience. He claims that people have a natural "aversion for all the appetites which take their origin in the body: all strong expressions of them are loathsome and disagreeable" (40). In this view, people only have empathy for mental suffering because physical suffering is disgusting.

Darwin, on the other hand, locates the sympathetic urge in the body. It is a mimetic process that encompasses all experiences—mental, emotional, and physical.

[10] For recent empirical studies that make claims that are similar to Darwin's, see Pecher and Zwaan, Gibb, Lakaff and Johnson, and Johnson.

When a person observes the pain of another, for example,

> a double imitation takes place, first the observer imitates with the extremities of the optic nerve the mangled limbs, which are present before his eyes; then by a second imitation he excites to violent action of the fibres of his own limbs as to produce pain in those parts of his own body, which he saw wounded in another. (Darwin 175)

This process mirrors precisely the process of cognition described earlier, only here it applies to sympathy rather than to imitative learning. In contrast to Smith and most other Enlightenment-era moral philosophers, Darwin considers sympathy an embodied phenomenon. Moreover, it is "the source of all our virtues" (Darwin 176). Along with language, it is one pillar on which society rests. Darwin also asserts that mimesis, or "imitation, in the moral world . . . is the foundation of all our intellectual sympathies" (175). In contrast to Hartley, whose theories of language and intellectual affections posit human beings in relationship to the divine, Darwin positions people in relation to each other.

While the idea that identifying with other people's emotional states is a necessary prerequisite for civilisation may seem like a quaint but antiquated notion, like many of Darwin's other hypotheses, it has been substantiated by contemporary neuroscientific research. According to the theory of mind theory, human beings have the "ability to 'read minds' in order to predict other peoples' behavior" ("Imitation" 2).[11] This capacity for sympathy is a function of mirror neurons. Discovered by Iaccomo Rizzolati and Vittorio Gallese in 1995, mirror neurons are a subset of the neurons located in the ventral premotor area of the brain that control motor skills. These neurons fire when we perform actions, but also when we observe someone

[11] To learn more about theory of mind theory, see Mar, Oatley, Hirsh, dela Paz, and Peterson; Frith and Frith; and Carruthers and Smith.

else performing an action. The brain activity is largely the same regardless of whether we are actually performing an action, watching it be performed, reading about it, or imagining it. Mirror neurons, according to Ramachandran, are "part of a network that allows" higher order organisms such as monkeys, apes, and human beings "to see the world 'from the other persons [sic] point of view'" ("Vat" 5). They allow us to experience sympathy by imagining ourselves in the situation of another person, much as Darwin conjectures.

The discovery of mirror neurons substantiates Darwin's theory about the role of mimesis and emotion in the formation of society. Some neuroscientists even believe that mirror neurons are responsible for the spread of human culture. Ramachandran, for example, speculates that the "emergence of a sophisticated mirror neuron system . . . in early hominids" enabled the conditions for culture to not only emerge, but promulgate quickly ("Vat" 5). As Darwin asserts, humans acquire new skills through an imitative learning process. According to Ramachandran, "once imitation learning was in place" in the central nervous system "it allowed for the rapid horizontal and vertical propagation of . . . culture" ("Vat" 5). The emergence of humans from a state of nature into civilised society was enabled, at least in part, by the "mirror neuron-based abilities such as imitation and language," or in Darwin's parlance sympathy and language ("Vat" 5).

Darwin's theories had significant influence on Romantic culture in general, but on Wordsworth and Coleridge specifically. The impact of Darwin's theory of organic matter cannot be overstated. Many of the ideas that are usually attributed to German *Naturphilosophie* have their roots in British empiricism. For example, Blumenbach often receives credit for instituting the vital materialist view that is often considered as characteristic of Romanticism. While Blumenbach was able to "synthesize some of the best elements of Enlightenment thought on biology . . . in

terms of a view of biological organization that he found in the writings of Kant" (Lenoir 115), in fact, Darwin's work also affected the development of *Naturphilosophie*. The first volume of *Zoonomia* "was immediately translated into German and read by both Schelling and Goethe" (R. Richards 5). Not only were the *Naturphilosophen* familiar with Darwin's work, but both Wordsworth and Coleridge "read *Zoonomia* soon after it was published in 1794" and adopted their organic view of nature "in the 1790s, before Schlegel's or Schelling's publications appeared" and before their 1798 sojourn in Germany (King-Hele 124). While paradigm shifts were, of course, occurring concurrently in Germany and Britain (and France, for that matter), British organicism—including Coleridge's—takes its origin from Darwin.[12]

Like the earlier theories advanced by Hartley and Priestley, Darwin's theory also integrates human beings into the natural world. Distinguishing between organic and inorganic matter, Darwin sees the principle of organic life as the common characteristic that unites all living beings. Since they are animated by sensorial power they are not only cognizant, but self-aware and have a mental capacity similar to human beings'. According to Darwin, all organisms, including plants and insects, "possess ideas of . . . the external world, and of their own existence" (76). Based on observations of his botanical garden in Lichfield, Darwin concludes that all living beings have a sensorium that allows them to experience pleasure, pain, and consequently, feeling.[13] Furthermore, he claims that all organisms share the same biological and evolutionary origin, all species are "*one family of one parent*" (10). Darwin's view of the relationship between humans and nature is, in some respects,

[12] In another example, Kant is often credited with formulating of a dynamic theory of matter based on Ruđer Bošković's work when, in fact, Priestley published a similar theory in *Disquisitions*, which was available to the English reading public long before Kant's work was available in translation. See Muller.

[13] As it turns out, according to twentieth- and twenty-first-century research, there is "abundant evidence of 'emotional' reactions in simple organisms," such as single-celled organisms or plants (*Spinoza* 40).

more radical than Hartley's or Priestley's in that it sees life as having evolved from a common ancestor rather than having been created by God as separate species.

Contrary to Hartley and Priestley, Darwin does not situate human beings or the natural world within a theological context. In fact, his theories threaten established Christian teachings. It is likely that Darwin was a Deist, though he denied "the possibility of revealed religion" (Ullrich 75).[14] His "naturalistic approach to the origin and development of life, had usurped the role reserved for God" (*King-Hele* 32). His system is, perhaps, best understood as a secular version of Spinoza's pantheism. While Spinoza saw God as the immanent cause of nature, he did not endow God with anthropomorphic qualities. Instead, he saw God as comprising the substantial fabric of existence. In Darwin's quasi-pantheistic view, all organic nature is animated by sensorial power, or the spirit of animation, and though it possesses amazing qualities, it is neither anthropomorphic nor divine. Initially, this animistic view of nature appealed to both Wordsworth and Coleridge as they were trying to work out the relationship between human beings and the natural world. It contributed to their "belief that the universe was a living unity which could be known through the imagination" (Piper 3). The poets' early theories of the "One Life," or the idea that matter is animate, owe much to Darwin.

Darwin also exerts an influence on their poetry. Wordsworth's poems in *Lyrical Ballads* draw "almost verbatim from . . . *Zoonomia*" (Bewell 154). His "position on nature's mental life, his emphasis on the symbiotic relationship of the human body to nature, . . . the corporeal texture of his inner-body imagery . . . all bespeak of

[14] Based on Coleridge's account of his one meeting with Darwin, scholars have generally assumed that Darwin was an atheist. His grandson Charles and "other contemporary scholars of Erasmus Darwin deny this, stating that [he] believed in the existence of God" (Ullrich 75). Overall, it is difficult to know what Darwin's exact beliefs were because, as a practicing physician in a politically tumultuous period, Darwin "could not afford to insult the Church" or the government (*King-Hele* 8). As we see in *Zoonomia*, he purposely obfuscated his views in order to avoid the type of persecution experienced by Priestley and Thelwall.

the bio-medical influence" of Darwin (Matlak 77). Likewise, Coleridge's use of the term organic in his 1795 poem "The Eolian Harp" reflects the earlier usage. When he asks "if all of animate nature / Be but organic harps diversely framed / That tremble into thought," he references Darwin's materialist theory (44-46). In an unpublished version of the poem entitled "Effusion xxv," Coleridge affixes a note to the phrase "Organic Harps" that explains what he means: "Organiz'd Body as Instruments" (qtd. in Wylie 38).[15] The poets owe a debt to Darwin both poetically and theoretically.

Equally important, Darwin's efforts to find a more plausible account of motion in living organisms initiated a second wave of cognitive science in which young scientists continued to account for the active mind from a materialist perspective. Not only did his publications influence Wedgwood and Davy, but he had a personal influence on them as well. As a member of the Lunar Society, which included Thomas Beddoes and Josiah Wedgwood I, Darwin frequented Beddoes' Pneumatic Institution in Bristol, where Davy oversaw the laboratory and conducted his experiments with nitrous oxide. Darwin also provided medical treatment to Wedgwood, who had chronic health issues. His influence, both direct and indirect, had a pervasive effect on the spirit of the age that is most noticeable in the paradigm shift that marks the sharpest distinction between the Enlightenment and Romantic periods. He was, perhaps, one of the most significant contributors to the vitalist, organic approaches to nature that were in the air during the late eighteenth and early nineteenth centuries.

"A Process Purely Chemical": Humphry Davy

Humphry Davy burst onto the Bristol intellectual scene in October 1798, arriving just after Coleridge had left for Germany. A young man from a respectable but impecunious family in Penzance, Davy hoped to make a living as a physician

[15] According to Wylie, this note appears in the Rugby Manuscript on folios 31-32.

despite his fascination with chemistry. While he was serving as an apprentice to the Penzance surgeon John Bingham Borlase, family friend Davies Giddies recommended him to Thomas Beddoes. Beddoes, a well-known radical physician, was looking for someone to oversee the laboratory in his newly established Pneumatic Institution, which he established to research atmospheric air and other potential cures for pulmonary diseases such as consumption. Impressed by the experiments Davy had shown Giddies, Beddoes offered him the position. Generously released from his apprenticeship, Davy jumped at the opportunity to pursue chemical research and to have his first experiments on light and heat published by Beddoes. At the Pneumatic Institution, Davy immediately began making a name for himself with his experiments with factitious airs, the most notable of which is nitrous oxide.

Famous for later inventions and discoveries, such as the safety lamp and isolating several elements, Davy has not generally been considered a contributor to the Romantic mind-matter debates, most likely because he never published a theory of sentience. His early notebooks from Penzance and Bristol, however, reveal his fascination with cognitive science. With characteristic enthusiasm, Davy saw the "science of the human mind" as nothing less than the study of "existence" itself (RI HD/22/a 5). In addition to the general popularity of the subject, his father's paralytic stroke may have sparked Davy's interest in the relationship between mind and matter. His father's loss of mental competency seemed to indicate "that the physical brain was the single centre of 'all Mental faculties'" (Holmes, *Wonder* 243). His notebooks from Penzance contain lists of arguments for and against dualist and materialist accounts of sentience, which indicate Davy's attempts to educate himself about the prevailing arguments that were in circulation. During his employment with Borlase, he "did extensive late night reading" to familiarise himself with the subject (Lefebure, "Alchemist" 86). Included in this reading were Locke's *Human*

Understanding and Hartley's *Observations on Man*. Later, in Bristol, he read Abraham Tucker's *The Light of Nature Pursued* (1768-77), a seven volume discourse that "treated all the same topics that association psychologists who had preceded him had" (Fullmer 115). Davy's self-education culminated in an attempt to formulate his own materialist theory of cognition.

Davy's notebooks are filled with observations, outlines for essays, and queries that reveal his thoughts on sentience. Though his theory remains fragmentary and unpublished, it is an important contribution to the Romantic cognitive science debates. Furthermore, Davy proposes a model that captures the quintessential Romantic view of mind. He sees the mind as active, creative, and boundless, but contrary to the commonly accepted view that such a concept of mind must be based on the transcendentalist philosophies that were popularised by Coleridge, Davy's theory is firmly rooted in the British empirical materialist tradition. His work combines Hartley's associationist psychology, Darwin's organicism, and his own research in chemistry in an attempt to provide a materialist account of a mind that is active and creative. It disturbed him that the "action of the Mind" was "neglected under the name of Metaphysics" (RI HD/13/e 55). Davy did not, however, necessarily reject metaphysical questions, but he thought they should be approached empirically. One of Davy's goals was to discover "the truth or falsehood of Hartley's Theory of the Automatic origin of Voluntary Motion . . . by experiment" (RI HD/13/e 30). This question, though never answered, points to the chief problem with which Davy was concerned.

According to Hartley's theory, even actions that feel unconstrained originate in automatic responses to environmental stimuli. For Davy, who saw the mind primarily in terms of its capacity for genius, creativity epitomizes the active mind. A theory that posits the essential automaticity of human action not only falls short

from a phenomenological standpoint, it also fails to account for the inventiveness and ingenuity that characterises much of human culture. A genius himself, who actively participated in the Romantic period's scientific and technological revolution, he wanted to know how "great & powerful exertions in the sciences & the arts" were possible (RI HD/13/c 61). He was driven by questions such as: "What is this generating faculty of man, which acts through the immensity of ages? How is it produced, and in what manner does it operate?" (*CWD* I: 62). Davy saw the mind as a generative force that enables human beings to discover, create, and shape their material environment. His theory of mind, then, addresses this aptitude for creativity from a materialist perspective.

Influenced by Darwin's work, Davy defines the mind in terms of its essential activity, but he sees this activity as a chemical process rather than a function of a soul. Where Darwin hypothesizes that sensorial power is responsible for the active nature of the mind, Davy's earliest theory attributes it to light. Light makes an excellent analogy for the mind because it is subtle and impalpable, much like thought, yet it is still a material phenomenon. It is "matter of a peculiar kind, capable" of "moving through space with the greatest velocity" (*CWD* II: 11). This description from Davy's first publication highlights light's two most significant properties—it is both material and active. For Davy, it initially served as more than just a metaphor for the mind; it was "the source of a numerous class of our sensations" (*CWD* II: 11). In "An Essay on Heat, Light, and the Combinations of Light" (1799), he asserts that "All our different sensations must arise from . . . light" (*CWD* II: 41). For a while, he "regarded light as the *Anima Mundi*" (Sharrock 59) because it offers a plausible alternative to dualist explanations of animation, in general, and sentience, in particular. Thought, in Davy's earliest theory, derives from the same active energies that "kindle in the stars" and "dance in the light of suns" (RI

HD/13/c). In this way, Davy tries to overcome the critical flaws in Hartley's, Priestley's, and Darwin's theories. By attributing sentience to such a powerful but material source, Davy makes a significant contribution to British empirical theories of mind. He demonstrates that it is possible for the mind to be an active physiological phenomenon that is not entirely constrained by Necessity or biological determinism. Light captures the essence of material processes that are so subtle that they seem immaterial and provides him with a way to account for these types of phenomena within an empirical context.

While Davy's essay on light and heat contains his only published remarks on sentience, he had "relegated his experimental results to a minor role of support for an overambitious metaphysical and theoretical construct" (Fullmer 154). As it turns out, his experimental data were incorrect, a fact that undermined his entire theory. Consequently, his 1799 speculations on heat, light, and their combinations met with harsh criticism from the scientific community, causing him great embarrassment. While he continued to accept the materialist assumption that "Sensations are affections of the Nerves communicated to the brain," he believed that "It would be wandering into Hypothesis to examine whether this affection is a vibration or any other" (RI HD/13/e 56). Though Davy did not publish on cognition again, he continued to theorise about its cause in his notebooks. His new research project on nitrous oxide at the Pneumatic Institute offered him another avenue of exploration as he abandoned the hypothesis that light is the sentient principle. This avenue was chemistry.

In the wake of Darwin's theory of organic life, chemistry assumed a new significance within the British empirical tradition. Rather than focusing on "the permanent and unchanging" aspects of the natural world, it studies "the laws of their alteration," which "developes [sic] and explains their active powers" (*CWD* II:

312). The Romantic counterpart to Enlightenment physics, chemistry "deals with matter in activity" and "sources of power" (Sharrock 66). Where Newton's laws explain how inert objects are forced into motion, chemistry explores the source of these forces. It seemed to promise insight not just into secondary causes, but prime causation. Davy was sure that "knowledge of Sublime chemistry" would give humankind "The knowledge of the laws of his own existence" by solving the mystery of cognition (RI HD/13/h 11, 12). Concentrating on the modifying powers of nature that cause change, chemistry seemed to provide a promising methodological tool for discovering the principles of the active mind. Furthermore, Davy's experiments with nitrous oxide gave the exhilarating impression that he was on the verge of discovering the laws that govern perception.

In clinical trials, Davy administered the gas to himself, his patients, and his friends, including Coleridge and Wedgwood, often with startling results. Southey and his wife, for example, were "rendered giddy," while others broke out into fits of hilarity (RI HD/20/a 208). Nitrous oxide appeared to "stimulate the mechanisms of perception and sensation, and thus had the potential to reveal the material cause that underlay them" (Jay 303). Davy theorised that cognition must be "a process purely chemical" (RI HD/20/b 40). The chemical activity found in nature that transforms one substance into another, or into different states altogether, provides evidence that the natural world is not static. It "necessarily implies the existence of active powers" (RI HD/2/D/2). These active powers in nature make it unnecessary to resort to dualist theories to explain phenomena traditionally attributed to immaterial principles. According to Davy, "life" itself "is the result of chemical changes" (RI HD/13/h 11). In combination with "the experiments of Dr. Darwin on ocular spectra," Davy's research supported the hypothesis that the active mind is a physiological fact (*CWD* II: 41).

Like Darwin, Davy notes that "visible imagery perpetually undergoes modification" (RI HD/13/d 20). This observation led him to believe that the mind has "the power of modifying" sensations from the external world (RI HD/20/a 132). While percipient beings are changed by the external world, this process is not entirely passive as in Hartley's system. Davy asserts that the "changes in organised matter producing living action can never be the objects of sense" (RI HD/20/a 81). While this claim sounds suspiciously like Coleridge's dualist proposition in the *Biographia*, in fact, Davy sees the process of mental modification in material terms. According to Coleridge, the mind has "an endless power of combining and modifying ideas," but it remains unaffected by external objects except when "by means of mediation they have passed into *thoughts*" (*BL* I: 31). While Coleridge does not elaborate on the mediatory process, Davy accounts for it in terms of "irritable matter and perceptive matter" (RI HD/13/e 15). He suggests that "irritability might be considered as a chemical change" that, in turn, stimulates chemical reactions in the nervous system (RI HD/20/a 80). In this way, "impressions [are] modified by ideas" in the embodied mind (RI HD/22/a 10). Davy tries to provide material explanations for mental phenomena that are not satisfactorily accounted for in earlier empirical theories. He specifically addresses those claims that dualists use to prove that thought is a function of the immaterial soul. Davy does not see the mind as a "being in which sensations ideas &c exist," but as "a word expressing . . . all our sensations ideas pleasures & pains" (RI HD/20/b 224). In other words, the mind does not exist as an entity or a thing, but as a process.

Davy generally expresses his theories in tentative terms because he was aware that more research was required to fully substantiate his hypotheses. He demonstrates, however, that it is plausible to account for the mind's activity in terms of materialism. Where previous theorists had noted the effect of substances on the

mind, Davy's experiments with nitrous oxide seemed to reveal the precise connection between the mind and the material world. The gas appeared to emulate the very process of thought as it moved from sensory perception to ideation. Around the same time, Davy outlined and began a treatise entitled "Memoirs on Anthroponomia or The laws of Human Nature" (RI HD/13/e 15).[16] Though it was never completed, it describes the process by which sensory data are transformed into ideas. A related fragment entitled "Essay on Ideas" in the same notebook delineates his basic theory of cognition. Davy claims that "Human existence may be considered as the perception of an almost infinite number of sensations and ideas presented to the mind successively in different numbers, classes and orders" (RI HD/13/e 56).[17] In other words, he defines ontology in terms of phenomenology. Our experience of being is nothing more than a series of sensations transformed into ideas, which are constantly presented to and processed by the human mind. He describes this process as an "action of the Mind," rather than as a sequence of impressions made by the external world onto the passive mind (RI HD/13/e 55).

Though he claims that the mind "is governed by laws which are as yet unknown to us" (RI HD/13/e 56), he attempts to outline its general process in material terms. According to Davy,

> The body is every where covered with irritable fibres. The nerves are not primarily affected by the action of external objects on the organs of sense but only thro the medium of the irritable fibre. . . . Sensations, then, are contractions of the irritable fibre excited into action by stimuli exterior to it. In what manner the nerve is affected we know not.

[16] It clear from the title, which mirrors *Zoonomia, Or the Laws of Organic Life,* that Darwin provided the inspiration for this unfinished treatise.
[17] Cf. Tom Wedgwood: "The existence of Man is a series of perceptions" (WM E40-28457).

> Sensations are affections of the Nerves communicated to the brain. . . .
>
> Ideas are similar affections of the brain and nerves, sometimes sufficiently strong to stimulate the muscular fibres & then voluntary motions are the consequence. Ideas are images or types of sensations and increase or decrease in vividness, in proportion to the original causative sensations & are oftener or seldomer impress'd. Whenever Sensations are strong and vivid and accompanied with high degrees of pleasure or pain the corresponding Ideas are proportionally strong. (RI HD/13/e 56-55)[18]

First, Davy describes how sensation is transmitted from objects to the body via the irritable fibres, which serve as an intermediary between the external world and the nerves. Not only does Davy emphasise the active nature of irritability, but also that sensations are not things, but motions. That is, they "are contractions of the irritable fibre excited into action." Cautious, in light of the criticisms garnered by his earlier essay on light and heat, Davy acknowledges that science does not yet know "in what manner the nerve is affected." Sensation, however, is not only an action of the muscles, but also of the nerves. It is how "the Nerves" transmit information to "the brain," thus producing particular mental states. Davy reasons by analogy that ideas are produced in a parallel process. They are produced by the action of "the brain and nerves" and are "sometimes sufficiently strong to stimulate" the body into action. "Ideas," he explains, are "types of sensations" whose vividness depends upon a variety of factors, including repetition as in association and "high degrees of

[18] In this portion of the notebook, Davy started working from the back of the notebook toward the front. Hence, the pages are numbered in the reverse sequence.

pleasure and pain," or feeling.

The fact that nitrous oxide elicited such an intense emotional response in most of Davy's test subjects seemed to reveal an ineluctable relationship between thought and emotion. In the passage from "Anthroponomia," he makes a connection between thought and emotion by asserting that all "Sensations & Ideas are from the laws of human existence either pleasurable or painful" (HD/13/e 56). Consequently, Davy saw emotion as the driving force behind creativity and genius. "Great powers," he claims, "have never been exerted independent of strong feelings" (RI HD/22/a 20). Likewise, "vivid feeling always produces vivid ideas" (RI HD/20/b 158). According to Davy, a genius is a person possessed of a vigorous mind and deep sensibility. "The man of Genius," he argues, "will connect together his ideas & impressions under the influence of feeling" (RI HD/22/a 21). In Davy's theory, the mind's ability to synthesise sensory data into ideas is a mark of creativity. Since pleasure or pain accompanies all sensation, feeling is necessarily implicated in this process. Sensibility, according to Davy, is the "peculiar habit in the base of the intellect by which it [the mind] combines readily with great quantities of pleasure & pain" (RI HD/22/a 8). Sensibility refers to the capacity to experience sensations intensely as well as to the emotional feelings that are attached. Coleridge also claims that "sensibility . . . both quick and deep, is not only a characteristic feature, but may be deemed a component part of genius" (*BL* I: 43). This ability to transform sensation and feeling into vibrant ideas is the mark of all active minds, but those who feel more deeply exhibit greater creativity.

In this respect, Davy adopts an outlook that makes him, in his early years at least, more like the Romantic poets than some other Romantic scientists. Unlike his employer, Beddoes, who was suspicious of emotion, and later men of science such as William Lawrence, who ignore it, Davy sees emotion as central not just to creativity

and genius, but also to the imagination. For Davy, as for Coleridge, the imagination has two functions. First, it enables creativity; second, it helps create a unified perception of the world. Davy asks, “What is imagination” but “the occurrence of remembered visible imagery under the influence of hope or fear” (RI HD/13/d 22). The synthesis of ideas and feeling that Davy and Coleridge claim constitute great thought is a function of the imagination. It unites thought with feeling to produce creative ideas. Davy recommends “presenting pictures to the imagination” because it “imprints facts more deeply in the reasoning” (RI HD/15/i 61). The imagination is crucial not just to artistic production, then, but to the generation of all types of knowledge.

In its second, synthetic, function, it helps make sense of the world. Davy’s concept of the imagination has resonance with Coleridge’s in that it amalgamates and integrates sensory data into a unified whole, but this happens on a rather prosaic level by filling gaps in perception. It supplies “the intermediate links” of “unconnected images” by generating the missing data to give us a comprehensive picture of the external world (RI HD/13/d 22). This understanding of how the imagination processes visual data is similar to contemporary accounts of vision. When we look at an object or a scene, the brain continually omits data from the visual field. It “constructs the object world that we perceive . . . more economically than we might suppose, simply leaving out details low in salience” (*Neural* 21). These missing data are supplied by the imagination in order to create a cohesive visual experience. For Davy, the imagination fills in the missing information literally and figuratively. Along with supplying visual data, it also enables us to make connections between ideas. The flashes of brilliance and interpretative leaps that result are the essence of genius.

According to Davy’s chemist-biographer, June Fullmer, the Romantic poets,

particularly Coleridge, had very little influence on his concept of genius or anything else for that matter. She claims that he was "supremely independent" and "never willingly sought anyone's help in intellectual matters" (139).[19] I contend that his friendships with Coleridge and Wordsworth had a significant impact on the trajectory of his early thought, just as his ideas affected their thinking on these matters. The parallels between his concept of the imagination and its relationship to creativity and emotion clearly reveal the influence of his conversations with Coleridge. Furthermore, according to Roger Sharrock, "Davy may have derived his associationism from Hartley" (and Priestley and Darwin), but "Wordsworth was the intermediary" (68). When, at Coleridge's request Davy corrected the proof sheets for the 1800 edition of *Lyrical Ballads*, he became interested in ostensibly transcendent experiences such as the sublime. Part of his fascination with creativity and genius was the immortality they seem to grant. Great poets, such as Milton, and scientists, such as Newton, are not only immortalised by their achievements, but by the fact that they continue to provide inspiration long after their deaths.

This immortality, however, is not contingent upon the soul leaving the body to occupy a transcendental realm, but is the result of producing works of genius that survive long after their authors or discoverers are dead. Davy reformulates transcendent experiences such as this sense of immortality in terms of embodied emotion. Transcendence, the sublime, and athanasia in Davy's account are species of spiritualised materialism. Inspired by Wordsworth's poem, Davy made a moonlit visit to the ruins at Tintern Abbey sometime in 1799 or 1800. There he contemplated life, death, and the creative aspect of human consciousness that endures from age to

[19] Fullmer minimizes Coleridge's influence on Davy and claims that "Coleridge depended on Davy for enlightenment about science" (139). Though Coleridge did occasionally consult Davy regarding chemistry, his reading in British empirical science and, later, German *Naturphilosophie* was extensive. As Levere cogently argues, Coleridge was quite competent in many of the sciences without Davy's assistance.

age. Pondering death, he wonders if all people will eventually "sink into the dust . . . [and] in the course of time be no more?" (RI HD/20/a 129). Like Coleridge in the *Biographia*, he concludes that "individuality can never cease to exist," but his conception of immortality is decidedly materialist, for it is not an attribute of an immaterial soul but "deep and intense feelings" that give "presentiments of a more sublime and energetic state of existence" (RI HD/20/a 130). He asserts that "the ever living & sublime energy" of nature is the "source of an immortal activity" (RI HD/13/d 7). The sense of athanasia is a feeling, not a glimpse into the afterlife or an encounter with a transcendental realm.

Davy's thoughts on life-after-death and his denial of a transcendental realm have implications for the mind-matter debates. In Platonism and its variations, material objects are seen as imperfect copies of their immaterial counterparts that exist only as ideal forms. According to dualist cognitive theory, a transcendental realm is necessary for the comprehension of complex ideas, which exist there abstractly. This realm, according to dualists, contains abstract knowledge and general principles that exist separately from any particular instantiations of them. Human beings perceive these absolute truths through the soul, the mind, or through an immaterial sentient principle. In this view, abstract ideas must exist in an ideal realm, or else it would be impossible for people to have them. The classic example from Romantic cognitive science, which both dualists and materialists use to illustrate their respective points, is the concept of a triangle. In the dualist hypothesis, such a triangle must exist as a general idea in the transcendental realm in an immaterial state akin to Plato's forms. Thomas Brown, Darwin's nemesis, articulates the dualist position when he claims that we can only "have a general idea of the nature of triangles" if "their common properties may be objects of thought, without reference to particular degrees" (*OZ* 151). We can only understand a triangle in the abstract if

we take this "idea for granted, as previously existing" (*OZ* 203). He concludes that "the existence of general ideas" must be "a necessary part of the phenomena of mind" (*OZ* 149). In this system, both ideas and the sentient principle are immaterial.

In the materialist view, however, abstract ideas such as triangles—or even benevolence—are the amalgamation of multiple material objects and events that have been perceived throughout the course of a person's life. Materialists such as Davy and Darwin argue that we gain conceptual understanding of something like a triangle by extrapolating the ideas of many actual triangles that we have seen and synthesising them into an abstract notion of something that has three sides and three angles. Darwin, for instance, argues that "we can be sensible to a number of ideas at the same time" and can "form compound ideas from" these simple objects" (89). When we see or touch a tri-cornered hat, for example, we receive a great deal of information about it such as colour, shape, and texture. One of the ideas that we gain from such a hat is the idea of a triangle. We abstract simpler ideas, such as angles or lines, from complex objects. Dualists such as Brown object to the hypothesis that an abstract idea could be generated by the mind from an aggregate of actual triangles. These "general ideas," he argues, "are not repetitions of any particular motions" but transcendental notions (*OZ* 132).

Davy responds to objections such as Brown's by attributing the power of abstraction to the active mind. According to Davy,

> all Triangles that we have seen are representations on the retina of a space of a peculiar figure included by three right lines. The best Triangle we have seen supposes to be right angles. The next we see oblique $<^{o}$ [angles]. The oblique angled Triangle raises in our mind by the association of resemblance to the oblique $<^{o}$. If we afterwards see an

> obtuse <^{o} Δ it will probably raise the ideas of this other &
> thereby being frequently raised in succession of association
> will at length be raised synchronically & hence will a
> peculiar complex idea of a triangle exist in the Mind.
> Whenever we see a peculiar figure with three sides & three
> <^{o} it directly raises by association, the complex idea of a Δ.
> (RI HD/13/e 30)

In Davy's explanation, the image of a triangle is perceived by the eye. The mind abstracts the data from the actual triangle by noting that it has "three right lines." The next time the eye sees a triangle, the mind will recall seeing something similar in previous instances. Regardless of whether the triangle is obtuse or oblique, it will recognise the abstracted features. Eventually, the mind will "synchronically" conflate all the images of triangles into "a peculiar complex idea of a triangle." Davy affirms that while "Its abstracted ideas certainly do not exist," neither is this idea in the mind "a particular Triangle as it is possible we have never seen such a thing before" (RI HD/13/e 31). Instead, this notion of an abstract triangle is a "mental feeling" that has been created in and by the embodied mind (RI HD/13/e 31). As an active process, the mind has the ability to abstract data from objects in the world and synthesise them into conceptual abstractions that exist in the mind as a feeling.

In an interesting reversal of the transcendentalist notion of the ideal, Davy defines it not in terms of an immaterial realm that is separate from material reality, but as an embodied mental state. According to Davy, "when the impression or trains of impressions exist without the physical pleasure or pain they call up ideal pleasure or pain, i.e. hope or fear—so that physical pleasure & pain are to hope & fear what ideas are to impressions" (RI HD/20/b 161).[20] In other words, the ideal is simply the

[20] Cf. Hartley's ideal vibratiuncles.

memory of a feeling or an object in the absence of actual stimuli that exists in the sensorium. Davy recognised, however, that abstract ideas do, indeed, seem immaterial. For example, he notes that "One may consider whiteness, yellowness and sound as immaterial when we abstract them from Matter" (RI HD/13/f 45). This idea helps him to account for how a belief in immateriality came about in the first place. With respect to the origin of dualism, he speculates that humankind

> first gained the idea of the immateriality of the soul from the following considerations: Reasoning abstractedly concerning his ideas, he found them shadows without substance. He therefore supposed them to be immaterial. (RI HD/13/f 45)

When we consider our own thoughts in the absence of original stimuli, it is feasible that we might come to the conclusion that they are nothing but shadows playing on the side of Plato's cave. "Yet," Davy argues "without substance they [ideas of whiteness, yellowness and sound] never wou'd have existed" (RI HD/13/f 45). According to this logic, transcendence itself is an abstract idea that has its origins in the embodied mind.

While not all species of Romantic transcendence can be read in terms of embodiment, they certainly cannot all be read in terms of Platonism and transcendentalism either. As we have seen, Davy offers a materialist account of these phenomenological experiences based on the idea that sentience is an embodied process. While the Romantic fascination with immortality, transcendence, and the sublime is often associated with German transcendentalism, Richardson argues that if we consider cognitive explanations of transcendence we will begin to see that the "sublime does not depend on an intuition of a transcendent realm somehow above the ordinary mind but rather on a palpable sense of the active brain that subtends

the ordinary workings of the mind" (*Neural* 34). Yet, where Richardson provides evidence from twentieth- and twenty-first-century cognitive science to support this claim, I offer Davy's contribution to cognitive science as a materialist explanation of these experiences that serves as a contemporary model for Wordsworth and Coleridge.

When Coleridge describes these experiences as "modes of inmost being" to which the "attributes of time and space are inapplicable," he refers to the phenomenological sense that we are somehow connected to something greater than the here and now (*BL* II: 147). In their poetry, the poets try to capture and recreate this ineffable sense of the terrible vastness of life that sometimes threatens to overwhelm and subsume the individual. They also try to account for these experiences in their theories of mind and imagination. Coleridge often describes "the transcendent energies he had continually glimpsed upon the fells" (Holmes, *Early* 334). As we shall see in a subsequent chapter, while he denies the influence of these early materialist conceptions of the relationship between mind, matter, and transcendence, in fact, his theory incorporates aspects of them. Wordsworth, on the other hand, more clearly grounds transcendent experiences in corporeality. "[N]ature and the language of sense" provide "The anchor of [his] purest thoughts" in "Tintern Abbey" (109-110). The experience of being "laid asleep / In body" so as to "become a living soul" depends upon corporeal "sensations sweet, / Felt in the blood, and felt along the heart" ("TA" 46-47, 28-29). Even the "purer mind" is, at base, a physiological process ("TA" 30). Furthermore, the sympathy that he feels for Dorothy, as modern cognitive science tells us, is "a form of 'transcendence.' Through it one can experience something akin to 'getting out of our bodies'—yet it is very much a bodily capacity" (Lakoff and Johnson 565). This articulation of transcendence gives us a more nuanced view of the Romantic understanding of the sublime

experiences that are recorded in the poetry and poetic theory.

Davy's theory of mind posits that sentience is an active process, much like the interplay of light and the objects it illuminates. His early philosophical and poetic fragments frame the key questions that intrigued Wordsworth and Coleridge with respect to the creative mind, the origin of genius, and the experiences of transcendence and the sublime. They show how Romantic cognitive science and Romantic poetry were connected by similar concerns about the growth and development of the human mind. After Davy became a professor of chemistry at the Royal Institution in 1802, his work began to move away from metaphysical speculation toward scientific pragmatism. Nonetheless, his love of humanity, and his desire "to benefit mankind" continued to unite him with the poets of his age (*CWD* I: 71).

During the same period that Davy participated in the mind-matter debates, Tom Wedgwood was also exploring questions of body-based sentience, but from an even more phenomenological perspective. Where Darwin tries to solve the problem of passivity by formulating the laws of organic life, Davy accepts Darwin's distinction between organic and inorganic matter and applies the principles of chemistry to theorise about how the mind operates on sensory data. Wedgwood, however, was fascinated by the subjectivity of perception. He also continues the work on emotion begun by Hartley and furthered by Darwin. Through extensive observation of himself and others, he directed his research toward "accurate investigations of our real nature" in the hope of shedding light on the cognitive processes (KU W/M 36 5).

"So exquisitely sensitive are we": Tom Wedgwood

Son of Josiah Wedgwood I, the famous potter and Lunar Society member, Tom Wedgwood is not as well-known as some of the other members of the circle of friends and acquaintances that surrounded Coleridge and Wordsworth. During his

lifetime, however, Wedgwood's influence in the cognitive science debates was well-known in his circle. Coleridge's eulogy of him in the October 1809 issue of *The Friend*, published four years after Wedgwood's death, asserts that he "had already established the foundations and law of the theory" of perception (*Friend* I: 146). Indeed, his explanation of ghosts and apparitions in this essay derives from Wedgwood's theory of perception and Coleridge deems Wedgwood "the benefactor of my intellect!" (*Friend* I: 147).[21] The poet does not exaggerate the influence of Wedgwood on his thoughts and, particularly, his methodological approach to the study of human perception that led to his theory of imagination.

Nonetheless, Wedgwood often merits only the briefest mention in critical studies on the poets.[22] Generally, he is credited alongside his brother Josiah only as Coleridge's benefactor. When treating him more fully critics such as Neil Vickers view his associationist theories of mind as a "naïve commitment to the idea of man as a machine" ("Wedgwood" 89). In John Beer's view, he "obviously needed to be reasoned into a subtler view of the human mind, no longer taking for granted the fashionable belief that its working could be explained simply through association of ideas" (69-70).[23] This view disparages and underestimates Wedgwood's contributions to the mind-matter debate, particularly the influence he and Coleridge had on each other and his more diffuse influence on Wordsworth.

In a letter to Thomas Poole dated 13 February 1801, Coleridge notes the he supposes Wedgwood's discoveries regarding space, time, and motion to have been already recorded by Kant. While Coleridge notes that this supposition is but a guess, it is perhaps this statement, which disparages Wedgwood's other admirers—his

[21] See, for example, Wedgwood's notebook entry on trying to discern shapes and figures in the distance, WM E40-28585/149 and WM E40-28515/83.
[22] See, for example, Levere, pp. 11, 16, and 26; McFarland, p. 185 and notes on pp. 350 and 354; Wylie, pp. 57 and 59; and Grob, n24 p. 166.
[23] In addition to Vickers and Beer, for a focused discussion of Wedgwood's relationship to the poets see Erdman. For the exception to this narrow view of Wedgwood see Doherty.

brother-in-law James Mackintosh and Richard "Conversation" Sharp—that has led critics to dismiss Wedgwood. This statement, however, should indicate Wedgwood's sophistication rather than his naivety. As the son of a successful merchant, Wedgwood was educated to speak and read French, but not German. So, he could not have gotten this notion of time directly from Kant. Coleridge may have been correct that Wedgwood's observations on space, time, and perception had already been articulated by Kant, but they were original to Wedgwood. Like Kant, he regarded "time and space" as "only sensible forms of our intuition, not determinations given as existing by themselves" (Kant A369). He asserts that "Time independently of human perception, is a nullity" (WM E40-28459 5). In this respect, Wedgwood's concept of time accords with Kant's definition in *Critique of Pure Reason* (1781/1787). Whereas, Kant's theory of time as a sensible percept is a form of phenomenalism that reduces objects of sense to mental representations, Wedgwood believed that objects exist as things-in-themselves and that human beings can perceive them. Though they come to similar conclusions, in contrast to Kant's transcendentalism Wedgwood's approach is materialist. The similarities between Wedgwood's ideas about time and Kant's demonstrate that his thought cannot be justifiably reduced to immature mechanism.

Though Wedgwood was, indeed, an adherent of association, who accepted the premise that ideas are associated together in the mind through an organic, rather than mechanical process, he made at least three significant contributions to Romantic cognitive science. First, he offers a theory that accounts for the subjective nature of perception. Second, he qualifies and extends Hartley's theory by considering the role of feeling in the process of association. Finally, he participates in the eighteenth-century debates about pleasure and pain by arguing that painful experiences, particularly in childhood, have long-range consequences that are

detrimental to character development.

Wedgwood was curious about the vast differences in perception "both in the same individual *at different* times, or in different individuals at the same time" (WM E40-28459 5). He wanted to understand why perception and cognition varied so greatly from person to person and on different occasions. He tries to account for the subjectivity of experience that results from association by investigating the relationship between time and vision and their effect on perception. He also reworks associationism to account for the role of emotion. His discussion of emotion asserts an activity of mind that is absent from Hartley's and Priestley's work. Wedgwood took seriously Hartley's suggestion to "some curious Experimenter" to take "the Time and Pains" to analyse the affections to discover how they affect character development (I: 196). Through rigorous observation of himself and others, he theorised about the effects of pleasure and pain on character development and concluded, in accordance with the spirit of the age, that pleasure shapes character more effectively than pain. Wedgwood takes up and elaborates several strands of work begun by Hartley, Priestley, and Darwin and his observations about the development of various emotions lead him to talk about mind as active, despite his commitment to associationism.

While Wedgwood's work remains largely unpublished, his manuscript notebooks offer rich insight into his theory of mind. Though his family paid his brother-in-law, James Mackintosh, to sort through his notes and to publish his theories posthumously, Mackintosh never completed the job. Like Coleridge, who failed to write the biography of Wedgwood that he had promised, Mackintosh was a notorious procrastinator. Consequently, with the exception of a few notes in Mary Everest Boole and Margaret Olivia Tremayne's *The Value of a Maimed Life* (1912), most of his work is available only through the Wedgwood archives. His notebooks

contain a collection of fragmentary notes containing observations about his perceptive states, vision, notions of time, distance, and association. For example, if he fell into a sudden state of dejection at hearing the sound of church bells he would jot it down and trace it back to the original associative circumstance. He diligently described and classified the different experiential phenomena so that he could use them to formulate a theoretical explanation of perception.[24] Many of these observations were incorporated into unpublished essays about time, vision, and education. Other essays, such as the treatise on emotion, remain partially written, though they may have a complete outline. Overall, though, Wedgwood was able to develop his theories despite his ill health and early death and the notebooks provide a good record of his thoughts and methods.

Methodologically, Wedgwood anticipates the introspective approach pioneered by the experimental psychologist Wilhelm Wundt in the late nineteenth century. Like Coleridge, he closely observed his own mental and emotional states and made notes about them. In this way, he hoped to provide not only insights into perception, but also to outline a process that others might follow to verify or correct his hypotheses. He openly acknowledges that his records "consist only of a statement of my own observation & experience so that every man who will watch the state of his own mind may judge whether it be correct" (WM E40-28495 2). In addition to self-observation, he devised thought experiments designed to test out his theories and "conducted all sorts of [other] experiments" with Davy and Coleridge in which they examined "their hallucinations, dreams and visions, often under [the

[24] See, for example, his "*Investigation of the nature of Feeling*" in manuscript notebooks E40-28542 and E40-28498 and his "Sketch of the Origin of our Emotion" in E40-28457, which outline the source of each emotion and classify them according to the two primary emotional stimuli: pleasure and pain.

influence of] drugs" (Wedgwood and Wedgwood 124).[25] The use of drugs was valid within the context of cognitive science research because they had such a dramatic effect on the mind's functioning and did much to support the materialist hypothesis that thought is an embodied process. Medicinal substances such as bhang, hyoscymus, and nepenthe were also used experimentally to test their effects on perception.[26] With these methods Wedgwood hoped to discover the "few & . . . simple original principles" from which "all the functions of the Mind [are] derived" (WM E40-28451 5). Though different from Davy's method, which tries to reproduce the same results over a large battery of trials, Wedgwood's self-experiments attempt to apply an empirical approach to phenomenology.

One of the inherent assumptions in materialist theories of cognition is that structurally comparable organisms will perceive the world in similar ways. If cognition is governed by natural laws, then the process should be the same for every organism that shares a particular physiological structure. Yet, despite the uniform mechanism of embodied cognition, conscious experience in humans is remarkably subjective. Wedgwood's experimental objective was to analyse the structure of conscious cognition in order to discover the cause of perceptual subjectivity. He wanted to discover why perception "differs astonishingly in different minds" (WM E40-28478 c). According to the principles of association, percepts, or compound

[25] In addition to opium and nitrous oxide, Coleridge, Wedgwood, and Davy experimented with a number of other drugs. In 1803 Coleridge wrote to Wedgwood: "We will have a fair Trial of *Bang*—Do bring down some of the Hyoscyamine Pills—& I will give a fair Trial of opium, Hensbane, & Nepenthe" (*CL* I: 934). Wedgwood, like Coleridge suffered from chronic ill-health and took many of these drugs on the advice of a physician. Though Davy was in good health, in the name of experimentation "every drug that came within his reach he sampled; opium, marijuana . . ., hyoscyamine were all tried enthusiastically by him; he exchanged notes upon them with Coleridge" (Lefebure, "Consolations" 180).

[26] There are approximately seven references to nepenthe and hensbane; eleven references to bang (in the sense of the drug); one reference to hyoscyamus and one to Hyoscyamine in Coleridge's letters. Bhang was a form of marijuana, which Coleridge procured through John Wordsworth and Joseph Banks. Nepenthe is an opiate that sometimes refers to the plant from which it is derived and sometimes refers to a tincture of opium, morphine, and sherry. Hyoscyamine is a plant poisonous extract, though Coleridge may have been referring to hyoscyamus, which is a narcotic tincture of the henbane plant.

perceptions, are made up of multiple simple perceptions. Wedgwood thought that if he could "resolve these compound perceptions into their ingredient simple perceptions" he would be able to determine which "ingredient" occasioned the sense of difference (WM E40-28459 1+). For example, he claims that "Tasting honey includes 5 simple perceptions"— sweetness, flavour, texture, warmth, and pleasure (WM E40-28459 i). These simple, or separate, perceptions intermingle during the act of tasting and form a compound perception referred to as the "*flavor of honey*" (WM E40-28459 2+). Given that simple perceptions are constant, he wanted to determine why tasting the same honey regularly yielded different sensations. He speculates that compound perceptions are affected primarily by time. That is, the longer one keeps the honey in one's mouth, the sweeter and more intense it will taste.

Wedgwood thought that time was one of the most important factors for explaining the subjective nature of experience. Time, he observes, sometimes seems to pass quickly and sometimes slowly. In his journal, he describes his visit to the Wordsworths, noting that "on the fifth day at Alfoxden" it seemed "that the time had gone like lightening" (Wedgwood qtd. in Litchfield 51, Beer 70). Later, when "entering the garden at Langford . . . it struck" him "as being very long . . . though" he "knew it was only five days" (Wedgwood qtd. in Litchfield 51 and Beer 70). How, he wondered, could the same period of time, five days, seem so short in one instance and so long in the other? This sense that time passes quickly or slowly on different occasions struck him as being representative of perceptual subjectivity. Thus, he decided to investigate time and apply his findings to other perceptions using rational analogy.

While Wedgwood never did discover an answer for why time feels different at different times, he determined that it is one of the major contributors to how a subject experiences a particular sensory stimulus. It also accounts for why a subject

perceives the same stimulus differently at different times. He theorises that "duration compensates for different intensity" of perception (WM E40-28459 i). That is, the length of time a sensory stimulus lasts will determine how the subject experiences it. The longer it lasts, the more intense it feels. Wedgwood demonstrates with a note played on an organ. A note with the same pitch, tone, and loudness is pressed three times, but is held for different durations. The longer the note is held, the louder and more intense the sound seems. The first three variables remain the same; time is the only variable that is not constant. The longer the note is held, according to Wedgwood's understanding of association, the greater the number of impressions it will make on the ear. He theorises that the simple perception of time compounded with other simple perceptions is one cause of the conscious subjectivity of perception. Wedgwood's research led him to conclude that "Time is the grand modifier of all other perceptions;" it is "a guide or measure to judge of other perceptions" rather than a transcendental absolute (WM E40-28459 8v). As a simple perception, time "coexists [with other] perceptions . . . but always *secondarily* and *subordinately*" (WM E40-28459 11). Time is not an abstract category that exists transcendentally, but a corollary to visual percepts.

Our sense of time, Wedgwood hypothesizes, originates with watching objects move. For example, if we are riding in a coach and someone sneezes, then sneezes again a few minutes later, the length of time between the two events is measured by the number of visual perceptions that occurred from one sneeze to the next. In this way, we account for time in terms of past perception and it becomes the measure by which we mark our lives: "the existence of Man is a series of Perceptions" (WM E40-28457).[27] Wedgwood's work on time establishes it as a

[27] Cf. Humphry Davy: "Human existence may be considered as the perception of an almost infinite number of sensations and ideas presented to the mind successively in different numbers, classes and orders" (RI HD/13/e 56).

function of sensation that contributes to subjectivity rather than an absolute measurement. He speculates that the construct of time as a measurement originally developed as an offshoot of spatial measurements, but has become so embedded in our language that its origins have been obscured.

One of the implications of Wedgwood's theory is that abstract concepts are understood via metaphors. Expressions of time demonstrate this idea particularly well. Time, he theorises, must have been measured originally by moving objects, such as a "stone's throw" or the "Running of some quantity of sand through a hole" (WM E40-28459 6).The current increments of time, however, have become "so familiar that the original measures are become obsolete—& it is probable that whatever moving object has formerly been employed as a measure of length in space was also one of length in time" (WM E40-28459 6). According to Wedgwood, "expression[s] of past Time—present Time & future Time," such as "Look, *back*—at *past* ages—*on* the present moment—*onwards* or *forwards* on *future* ages—or ages *to come*" reflect embodied experiences such as walking toward someone, someone walking toward us, or riding in a coach (WM E40-28459 11v). For example, if we face forward in a coach we see scenery coming toward us; if we sit backwards we see the scenery that we have already passed. This idea that language is based on metaphors prefigures the work of Lakoff and Johnson, who argue that abstract language maps against embodied experience.

Wedgwood's account of time is also similar, in some respects, to the accounts of abstract ideas found in Darwin's and Davy's work in that it helps demonstrate the material basis for cognitive abstractions that dualists attribute to immateriality or to a transcendental reality. As it turns out, recent research bears out several aspects of their theories about how people come to understand abstractions based on embodied experiences. Time, in particular, "might be understood by

metaphorical mapping on 'movement in space.' Evidence for such metaphorical mapping comes from expressions such as 'time flies'" (Pecher and Zwaan 3). This twenty-first-century explanation of our concept of time mirrors Wedgwood's description.

In his efforts to understand the subjectivity of perceptive experience, Wedgwood also turned to feeling. Like time, feeling contributes to the subjectivity of perceptive experience by lending an emotional valence to ideas at the time of association. Wedgwood argues that emotion largely drives the process of association. He claims that "muscular action is associated with Feeling & not with Idea (WM E40-28451 2) and that "visual ideas representative, must be associated thru feeling & idea" (WM E40-28459 6). Coleridge articulates this idea more elegantly in an 1803 letter to Southey in which he states that "association depends in a much greater degree on the recurrence of resembling states of Feeling, than on Trains of Idea . . . Ideas *never* recall Ideas, as far as they are Ideas . . . it is the Soul, the state of Feeling" that recalls ideas (*CL* II: 961). The consequence of this assertion is that if an object or idea associates under pleasant circumstances, subsequent experiences of it will be positive. If it associates under negative conditions, it will later be experienced negatively. This facet of association accounts for why some people enjoy certain experiences while others do not.

Wedgwood also theorises that mood is induced by memory, a proposition that can be understood in terms of the mood-state dependency effect. One assumption in the research on the relationship between memory and mood is that remembering "information with a specific valence, leads to activity in the emotional system corresponding to that mood or valence" (Lewis and Critchley 431). In the previously noted example of bells chiming during the day, Wedgwood notes that he falls into a state of dejection every time he hears bells sounding in daytime. Tracing

the path of association back to its origin, he comes to understand that this mood-stimulus relationship had been established during an actual event. The first time Wedgwood recalls hearing bells being rung during the day he was in Hamburg, depressed and homesick. The tolling of the bells initially associated with his dejected emotional state; hence every time he hears bells during the day subsequently the depression is recalled even though the initial sensory stimulus had been forgotten.

Recent research "suggests a neural basis" for this phenomenon: "the valence of mood at encoding may become associated with otherwise neutral stored information" (Lewis and Critchley 432). In other words, sensory data that have no particular emotional quality attached to them will become attached to a feeling state through association. It is likely the Wedgwood had heard bells chiming during the day at some time prior to his trip to Germany, but his mood at that time gave a particular valence to this otherwise neutral stimulus, which he recalled on later occasions. As we shall see in the following chapter, in *The Prelude* Wordsworth also addresses the phenomenon of unconscious perception and the association of feeling. From this experience Wedgwood concludes that association applies to feelings as well as ideas, a connection that Hartley, Priestley, and Darwin had failed to make.

One of Wedgwood's most significant contributions to Romantic cognitive science is the elaboration of the relationship between emotion, cognition, and association. Not only does he claim that emotion directs association, but also that it precedes conscious thought. He claims that if we "trace Motory action to earliest & rudest beginnings . . . it [can] be shewn that they are originally caused by *Feeling*," though afterwards they are associated by ideas (WM E40-28451 3). Wedgwood uses the term feeling in the same sense as his predecessors. That is, it refers to sensory stimulation, but because sense data are always accompanied by pleasure or pain it

takes on the emotional connotation as well. Wedgwood, seeing the intimate connection between sensory feeling and emotional feeling conflates the two senses of the term. He recognises and highlights the fact that, in most cases, when we experience a sensation it is accompanied by an emotional feeling, i.e. pleasure or pain, before it associates with a thought. Often this association happens on an unconscious level such that when Wedgwood "views a beautiful object in nature without Emotion," the "next moment on reviewing it, [he] feel[s] Emotion" (WM E40-28451 35). This fact proves for him that "Emotion is an existence independent of Notion" because he can have an idea without experiencing any feeling until later recollection. At the later time, however, it becomes clear that there was an emotional feeling attached to the perception (WM E40-28451 35). In other cases, he reports feeling a pleasurable emotion without knowing its cause until after searching the room he alights on the object that was initially associated under pleasurable circumstances.

Association is actively directed by emotions in this theory. Where Hartley and Priestley describe association as a passive process, Wedgwood sees it as active. People are driven to seek out stimuli that gave them pleasure and avoid those that caused pain. Yet, this happens on a largely subpersonal level. He claims that "a child has three states of existence viz: 1 pleasurable, 2 painful & 3 neutral" and that to seek the first and to "avoid the 2nd are the only intelligible motives to children" (WM E40-28515/162 1-2). The emotional content of our thoughts affects our attitudes toward particular objects or experiences. While objects themselves are neutral, our initial experiences with them determine our attitudes toward them. Yet, children are not aware of this motivation nor, for that matter, are most adults. Consequently, emotion drives our actions. Davy makes a similar assertion when he claims that "All our voluntary actions are nothing more than a procession of feelings ideas & actions"

(RI HD/22/a 25). The relationship between emotion and action that Wedgwood posits reverses traditional paradigms that see action as the driver of emotion.

Wedgwood's theory is explicable in terms of recent research into emotion. According to enactive neuropsychology, emotion is the primary motivator of behaviour. Drawing on empirical studies conducted in the late 1990s which demonstrate that "emotional responses occur earlier in the [neurological] processing stream than perceptual or intellectual ones," Ralph Ellis asserts that all action is emotionally motivated (26).[28] Because emotion is different than consciousness of one's feelings, this emotional motivation often occurs on a preconscious level. Ellis argues that if something changes in a person's emotional state, then behaviour will also change. The idea is that emotion is not a reaction to external circumstances, but drives organisms to act on their environments. This process is considered active because emotion is not viewed in terms of simple stimulus-response, a largely passive process in which an organism merely responds to its environment. Instead, it is viewed in terms of motivation that initiates voluntary action.

Aspects of Wedgwood's theory are also reflected in Wordsworth's theory of embodied poetics. Wordsworth spent time with Wedgwood in 1797 and it is likely that he, Wedgwood, and Coleridge discussed issues such as these. According to the *1800 Preface*, feeling in the poems takes precedent over and precedes action: "The feeling therein developed gives importance to the action and situation and not the action and situation to the feeling" (*PrW* I: 128). The poems, in this view stimulate emotion because emotion drives the poetry, which in turn will motivate its readers to action. Ellis also addresses this aesthetic phenomenon. He claims that tragedy, for example, is inspirational because the audience values the hero's status not as a great person, but simply as a human being. Tragedy evokes a response because it elicits

[28] His sources are Joseph LeDoux, *The Emotional Brain* (1996); Jaak Panksepp, *Affective Neuroscience* (1998); and Antonio Damasio, *The Feeling of What Happens* (1999).

the audience's empathy and compassion. The *Ballads*, likewise, seek to incite these feelings for more mundane characters. They do not need high characters or great action because the emotion, unlike in Dr. Johnson's mocking stanzas which "neither originate in that sane state of feeling which arises out of thought, nor can excite thought or feeling in the Reader," do, in fact, derive from actual states of feeling that can excite passion (*PrW* I: 154). The reader is able to literally experience these feelings on a physiological level.

In the theories of Davy, Wedgwood, and Wordsworth feeling influences character formation more profoundly than the simple association of objects with ideas and it becomes a primary motivator of action throughout life. If we have been punished for telling the truth, for example, we will be led by aversion to lie. If we receive praise, we develop a desire to be honest. Our emotional experiences as children determine whether we will be led toward or away from moral behaviour. Davy cautions against the coalescence of pain with moral agents. If a child is in pain, "the pain should be either . . . deconnected from moral agents—or connected with moral agents who were only before connected with pleasure" (RI HD/21/b 6). According to Wedgwood when it comes to the choice between "*Sensation* & *Emotion* it will afterwards appear that *Emotion* is the chief subject of Education" because pleasure and pain, the source of all emotion, are the most significant influences on the development of the personality and the growth of the mind (WM E28515/162 3). This discovery led Wedgwood to devise an elaborate pedagogical scheme that focuses on creating the right environment in the pupils' early years and ensuring that their early development is marked by more pleasure than pain.

Wedgwood's research and theories grew out of his own experience. For most of his adult life he suffered from a mysterious illness that was so "so severe that he would sometimes throw himself to the ground screaming" (Wedgwood and

Wedgwood 101). This condition helped stimulate his interest in cognitive science. Wedgwood's symptoms included debilitating depression, digestive problems, mood swings, and chronic pain that eventually led to drug addiction and, ultimately, his untimely death in 1805. The "ceaseless struggle with bodily suffering" (Litchfield 91) that Wedgwood experienced motivated much of his work on pleasure and pain. Given his own physical and mental health, he as well as Coleridge had "enormous medical curiosity, prompted in part by the need for relief from their own ailments" (Wedgwood and Wedgwood 112). With the publication of texts such as *Zoonomia* and William Falconer's *A Dissertation on the Influence of the Passions upon Disorders of the Body* (1788), attention to the relationship between sensation, emotion, and illness increased during the Romantic era. Texts produced by Darwin and Hartley that emphasise the role of feeling in cognition encouraged Wedgwood to examine the relationship between pleasure, pain, character development, and health.

Wedgwood argues that painful experiences and harsh treatment in childhood must be avoided. Pain disorders the body and leads to personality problems later in adulthood. Too many painful experiences in childhood will lead to personality disorders, such as depression or even violent behaviour. Wedgwood blamed his illness, particularly the physical and mental suffering that he endured, on his upbringing. He "attributes the errors of his parents and teachers to ignorance of the true principles of nerve-action" (Boole 28). Had they had access to Hartley's findings, they could have ensured that he suffered little pain, which would have allowed him to grow into a healthy, stable adult. Interestingly, it is likely that Wedgwood's father was familiar with Hartley, if not directly then at least through the Lunar Society, and Wedgwood was educated upon a plan that Darwin helped devise (Meteyard 18). Nevertheless, hoping to figure out how to avoid the problems he experienced, Wedgwood made an "objective study of the behaviour of [his brother]

Jos's young children," Bessy and Joe (Wedgwood and Wedgwood 111). He performed experiments in the nursery—though just what these experiments were has yet to be discovered—and observed their actions and responses to environmental stimuli. He concludes that common childhood character defects, such as crying at "any trivial provocation" and the subsequent "dejection of spirits" are not inherent to a child's temperament and can be avoided (WM E40-28467). Wedgwood criticises eighteenth-century methods of parenting and educating children because they neglect to observe how different actions affect children's behaviour and unintentionally inflict pain on them. Many routine parenting tactics actually cause undesirable behaviours and cultivate poor dispositions.

Pain is not only unnecessary in Wedgwood's view, but harmful. Since the experiences of infancy and early childhood "become the principal means & instruments of all" future actions, care must be taken to treat children gently and ensure that they do not become unnecessarily frightened or provoked (WM E40-28482 1). Negative experiences in childhood have enduring effects that are difficult to undo. "All sudden interruptions of their pleasures, all harsh refusals, every privation" derange "the harmony of . . . childrens [sic] feelings" (WM E40-28463 9). Coleridge also noted the pain caused by interruption. Witnessing his son, Hartley, cry when snatched away from his mother's breast for a kiss, Coleridge observes "That Interruption of itself is painful because & as far as it acts as Disruption" (*CN* I: 1833). Given the organic relationship between body and mind posited by materialist theories of cognition, painful childhood experiences cause not just emotional or mental instability, but physical weakness as well. The effects of pain are not just mental, but also physical. It "debilitates the body—the heart—the stomach—the muscular system are disordered by it" (WM E40-28515/37).Diseases such as consumption were widespread and defied medical treatment. It seemed reasonable

with the advances in cognitive science that chronic illness stemmed from emotional causes.

Of course, pain is not entirely avoidable, but "Why procure useless pain?" (WM E40-28451). Like Jeremy Bentham, who argues that happiness results from pleasurable experiences and the elimination of pain, Wedgwood offers pleasure as an antidote and advocates replacing pain with pleasure. Pleasure creates a sense of well-being and the desire to continue the pleasurable behaviour. In this respect, Wedgwood's theories are in keeping with shifting attitudes in the late eighteenth-century. During this period, people were beginning to see pleasure rather than pain as being the most effective motivator of human behaviour. This shift coincides with the rise of the cult of sensibility earlier in the century and the abolitionist movement in 1787.[29, 30] Pleasure, in Wedgwood's definition is "*that affection of self which a rational being woud* [sic] *wish to have repeated*" (WM E40-28452 4v). Thus, the best way to create productive, beneficent members of society is to make people want to engage in moral behaviour. To rear cheerful, healthy children who will be the most benefit to themselves and to society, parents must "make the child like to do whatever they want the man to do, or rather whatever Humanity will want him to do" (Boole 15). They must be motivated by pleasure to enjoy performing their duties and being of service to others.

The belief that "ideas of pain are much more powerful than those . . . of

[29] The first challenge to practices of pain came from "the eighteenth-century cult of sensibility [which] redefined pain as unacceptable and indeed eradicable and thus opened the door to a new revulsion from pain" (Halttunen 304). Grounded in nerve theory, sensibility can be seen as a precursor to the science of the mind.

[30] The Society for the Abolition of the Slave Trade was established in 1787 by Thomas Clarkson and others (Archer). Josiah Wedgwood I, Tom Wedgwood's father, was active in the movement to abolish the slave trade and served on a committee in the society. His potteries manufactured a cameo brooch with the well-known emblem that featured a kneeling slave with his chained arms raised to the heavens. The caption reads: "Am I Not a Man and a Brother?" The brooch became so popular that it was worn by women who supported the abolitionist movement prompting Clarkson to remark, "fashion, which usually confines itself to worthless things, was . . . seen promoting the cause of justice, humanity, and freedom" (qtd. in "Josiah Wedgwood").

pleasure" was tied to the neo-Platonic Christian view that saw the body as a temptation to indulge in sinful pleasure (Burke 59). Edmund Burke reflects Thomas Hobbes's view of human nature when he assumes that "the passions belonging to the preservation of individual, turn wholly on pain and danger" (Burke 61). In a state of nature, according to Hobbes, humans are at war. In Burke's view, however, society springs not from strong government, but from the desire for sex. Society is propagated by the passions "which belong to *generation*" and "have their origin in gratifications and *pleasures*" (61). Nonetheless, even this "confessedly . . . highest pleasure of sense" motivates less effectively than pain (61). Thus, humans are more "strongly affected with whatever threatens the destruction of either" life or health than by any sort of pleasure, sexual or otherwise (63). Yet, associating pain and terror with the experience of the sublime, Burke concerns himself with the mental experience of pain more than its bodily effect. Burke's concept of pleasure and pain demonstrate the neo-Platonic, Christian mind-body conflict.

In the Romantic era, with the rise of materialist cognitive science, this move away from pain engendered an ideological commitment to the "great standard of human conduct, the production of Happiness" as the ultimate goal of human existence (WM E40-28515/28). As the view of the body changed as a result of Hartley's and Priestley's work in cognitive science, so did the attitude toward pleasure. The political and social goal of scientists, such as Darwin, Davy, and Wedgwood, and poets, such as Coleridge and Wordsworth, was to bring about an ideal society. Wedgwood, however, "devoid of any religious sense," did not see this happiness in biblical terms (Doherty 305). He stripped the "Spiritualization of sensual pleasure" of the theological implications found in Hartley's and Priestley's work (WM E40-28451 31A). Though the end goal had been secularised, pleasure was still connected with moral and social good. This happy utopian state would manifest in

equitable social relationships and the abolition of slavery.[31] Wordsworth and Coleridge believed that poetry has a moral purpose to help restore balance to disordered social relationships. Consequently, pleasure became an aesthetic goal as well as a political goal. Coleridge defines poetry as "that species of composition, which is opposed to works of science, by proposing for its *immediate* object pleasure, not truth" (*BL* II: 13). Pleasure supersedes truth because, ultimately, it leads to truth. This shift toward pleasure as a political, social, and aesthetic goal was effected, in part, by the work done by Hartley and Priestley in the last half of the eighteenth century to spiritualise the body and counter the prevailing neo-Platonic Christian condemnation of the body and its attendant pleasures.

Though Wedgwood died young and his contributions to Romantic culture have been largely ignored, his theories influenced Coleridge and Wordsworth. With Coleridge he shared "a frank & mutual confession of thoughts & feelings" (WM E40-28515/15). Their joint experiments and enthusiastic conversations furthered their metaphysical speculations. Furthermore, Wedgwood suggested "to Wordsworth some of the concepts that guided him in the writing of his own poetical biography" (Erdman II: 488). His own project to analyse "the composition of Feeling, its growth & maturation—to display in my own history some of the errors & perhaps some of the advantages of my education—to unravel the web of my ideas & sensations—to trace my present habits to their origins—to attend to their formation" inspired Wordsworth to do the same (WM E40-28490 1). The result, which we shall examine in the next chapter, is *The Prelude*, which like Wedgwood's notebooks expresses Wordsworth's theory of mind.

Responding to the passive theories of mind advanced by Hartley and

[31] This early cognitive science was devoid of the ugly race theory that crept in toward the middle of the nineteenth century and denied social equality to non-Europeans. Davy's foray into race theory occurs near the end of his life in *Consolations in Travel, or the Last Days of a Philosopher* written in the 1820s, but not published until the turn of the century.

Priestley, Darwin, Davy, and Wedgwood formulated materialist theories of mind that attempt to overcome the limitations of first wave cognitive theories. Not only did their work have larger implications for the relationship between cognitive science, society, and creativity, it deeply engaged the poets, who were also trying to understand the creative capacity of the human mind and its relationship to the material world. The theories put forth by these scientists left indelible traces on the poets' theories of mind and imagination, particularly in the continued emphasis on the body as the locus for poetic and imaginative experience, despite the poets' later rejection of materialism. Darwin contributes to their organic view of the natural world; Davy provides a context for understanding transcendence; and Wedgwood articulates a theory of pleasure and pain that is echoed in their poetic theory. The models of active mind proposed by these scientists inform the more radical conception of mind found in *The Prelude* and *Biographia Literaria*. The next two chapters examine the theories of mind and imagination advanced by Wordsworth and Coleridge in light of both Romantic cognitive science and twenty-first-century theories of enaction. By situating their work within empirical as well as transcendental contexts, we are better able to understand the ways in which both poets attempt to mediate between the two epistemological positions.

> We need, in other words, to discover just what each is doing, and a means of comparing these doings—a common framework in which the rival speculative machineries can be examined. Such an analysis and such a technique of comparison are beyond our present powers. But until we have them we should be chary of deciding that there is any irreconcilable clash between their results.
>
> --I.A. Richards

Chapter 3 "Ennobling Interchange Of Action / From Within and Without": Wordsworth's Enactive Theory of Cognition

Sometime during 1798-99 William Wordsworth, at the repeated urgings of Samuel Taylor Coleridge, formed a plan to write "the *first* and *only* true Phil[osophical] poem in existence" (*CL* IV: 574). With this statement the poets situate themselves within a philosophical tradition in addition to a literary tradition. The poets lived and wrote during an era full of rich philosophical debate, often polarised into two camps—the transcendental dualists and the empirical materialists. This division was particularly evident in the debates about cognition. Challenging the traditional dualist position that saw thought as a function of the immaterial soul or regarded the sentient principle as an immaterial substance, the materialists considered cognition a physiological process. Engaged in questions of mind, matter, and creativity, the poets did not consider these questions in isolation or in merely literary terms. I contend that they were active participants in this larger philosophic-scientific conversation. Their positioning of themselves as poet-philosophers raises questions about their philosophical influences as well as questions about the central tenets of their philosophy, particularly their philosophies of mind. These questions can be answered only by examining their work as part of the discourse on cognitive science

It would, perhaps, be easier to answer such questions if Wordsworth had finished this grand project, but fifteen years later in 1814 when he published *The*

Excursion, he described it as "the second part of a long, laborious Work" that was to be his philosophical opus (*PW* V: 1). The following year, in the spring of 1815, Coleridge wrote to Wordsworth that he still "looked forward to the Recluse," the title they had given this mythical poem (*CL* IV: 574). Over fifteen years after they had conceived of the plan, Wordsworth was still working on and thinking about how best to accomplish the task Coleridge had set before him. Though Wordsworth never completed *The Recluse*, he published enough on the topic of imagination that a critical tradition has emerged, which examines his philosophy and his philosophical influences.[1] This chapter engages with this critical tradition that has sprung up around Wordsworth's philosophy and argues that we must consider his work against the backdrop of Romantic cognitive science in order to accurately understand his theory of imagination, his relationship to empiricism and transcendentalism, and the influence of materialism.

Wordsworth's earliest, Victorian, critics saw him primarily as a transcendentalist (See Stephen; Arnold 331-346). Viewing the "Immortality Ode" as the centrepiece of his system, they believed that "the idea of the high instincts and affections of childhood" testify to "a divine home recently left," though Wordsworth disclaimed this as a serious belief (Arnold 341). Generally, though, these critics were less interested in Wordsworth's philosophy than his poetry. Matthew Arnold, in particular, censured those (including Wordsworth himself) who sought to fashion the poet as a philosopher. In fact, though the philosophical and scientific debates regarding cognition raged on into the Victorian era, Wordsworth's early participation in the late eighteenth and early nineteenth centuries—despite the posthumous publication of *The Prelude* (1850), a poem that overtly explores the topic of mind—

[1] Wordsworth planned for *The Recluse* to have four parts: an introduction and three epic-length sections. While he wrote the introduction, the first book of part one, and the second part, he never completed the rest of the first part or the entire third part. See Thomas, p. 8.

was ignored.

Twentieth-century critics do, of course, acknowledge that Wordsworth saw himself as a poet-philosopher, particularly in his youth. They do not simply assume that Wordsworth was a transcendentalist, particularly since contextual and historical research has revealed his familiarity with British empiricism as well as Christian transcendentalism. Beginning with Arthur Beatty's study on the influence of Hartley's associationism, scholars have debated the empiricist and idealist influences in the poet's work. Critics such as H.W. Piper, Alan Grob, and Keith G. Thomas have done much to demonstrate that Wordsworth was heavily influenced by British empiricism, particularly in the 1790s (See Piper; Grob; and Thomas). Piper has established a French materialist influence on Wordsworth's early thought as well. Modern scholars tend to agree that while Wordsworth's early poetry is marked by the influence of empirical philosophy, by 1804 he had definitively rejected materialism in favour of the transcendentalism that appears in the later poetry as pedantic Christianity. Despite the interest in Wordsworth's philosophical influences, until quite recently the critical tradition has not considered the poet in terms of the Romantic debates about mind and matter. While Richardson's *British Romanticism and the Science of the Mind* has opened up this important new area of inquiry, he does not discuss Wordsworth's theory of imagination.

To understand the poet's theory in this context, an accurate understanding of Romantic empiricism is required, particularly as it relates to the science of the mind. Critics who have examined the influence of empiricism or transcendentalism on the poet's theory of mind—Grob or Thomas, for instance, typically understand the materialist theory of mind in terms of Coleridge's representation of it in the *Biographia.* They think it entails a mind that "stands to the external world in an essentially passive relationship" and base their understanding of the empirical

mind—and the poet's—on Locke's model (Grob 59). Moreover, they have not taken into account the active theories of mind proposed by empirical materialists such as Darwin, Davy, and Wedgwood. According to this standard account, the mind is a blank slate on which the external world etches itself. Character, knowledge, and the mind are built up from experience, which results from sensory input. All activity and agency are ascribed to nature. Humans may have a limited ability to combine or recombine existing thoughts, but, in the end, they are mechanically determined. Critics juxtapose this misunderstanding of empiricism against transcendentalism. According to Kantian transcendentalism, the mind, or subject, imposes its categories onto natural phenomena in order to understand and make sense of the natural, or objective, world.[2] Thus, transcendentalists locate agency in the human mind. They see the natural world as passive and inert, a view similar to the Newtonian understanding of the universe as static.

These two poles, scholars claim, represent the two extremes of the empiricist and transcendental positions. Consequently, they see Wordsworth's enquiry as a question of location: Does creative agency reside in the natural world, or in the human mind? Does knowledge exists objectively, as in the empirical view, or subjectively, as in the transcendentalist view? In this formulation of the critical question, both poet and critic are forced into an irresolvable binary. They must choose between "empiricism or transcendentalism, nature or consciousness" (Grob x). Many critics claim that the poet eventually embraces a view of imagination as autonomous, self-contained, and separate from the natural world. In this view, nature is considered insensate, passive, and dumb. Human beings, on the other hand, with their conscious ability to reason are not just separate from, but superior

[2] Critics often assume that Wordsworth was versed in German idealism because of his relationship with Coleridge, however, while Kantian principles are useful for outlining the transcendentalist position in general, I in no way argue that Wordsworth understood transcendentalism specifically in Kantian terms.

to the natural world. In this theory, imagination becomes an "expression of man's essential separateness from nature," which necessitates a radical rupture from the natural world (Grob 10). Drawing on an understanding of British empiricism as it was articulated during the Enlightenment, this view does not see that Romantic cognitive science situates the human mind within nature, thus placing it in an active relationship with it. Wordsworth's concept of the imagination posits this relationship between human beings and nature not in terms of rupture, but reciprocity.

The early Romantic cognitive scientific theories that expand on Locke's and Hartley's account of mind, including those produced by French materialists such as Baron d'Holbach, provide a necessary context for understanding Wordsworth's theory. Otherwise, we end up with insoluble problems regarding subject-object relations in his poetry. During his so-called empirical phase, which Grob dates from 1797 to 1800, Wordsworth describes the mind as passive in some poems and active in others. According to critics such as J. Wordsworth and Grob, these contradictory elements are the function of a shifting philosophical perspective. J. Wordsworth argues that the poetry of the mid-to-late 1790s, particularly *The Pedlar*, expresses a pantheistic philosophy that views nature as not merely active, but as being "permeated by the One Life" and, therefore, "living" (*Music* 188). In his view, Wordsworth was a pantheist until the end of 1798 when he adopted a secular humanist perspective. In 1805, however, "the death of his favourite brother, John, made it necessary for him to accept the doctrine of an afterlife" and precipitated a turn to orthodox Christianity (J. Wordsworth, "Borderers" 183). While it is necessary to historicise Wordsworth's views, the pantheistic elements in the early poetry do not necessarily indicate a philosophical commitment to either pantheism or animism. Rather, they reveal his attempt, given the limited language of materialism and transcendentalism, to articulate an epistemological position that recognises a

mutually co-dependent relationship between human beings and the natural world. Wordsworth did indeed back away from his early commitment to materialism around 1805, primarily, as I shall argue, for political reasons. His description of the imagination in the 1805 version of *The Prelude* does draw heavily on transcendentalist language. Even so, these facts do not indicate, as Thomas concludes, that Wordsworth's conception of the "subject-object interaction is epistemologically ambiguous" (68). Instead, Wordsworth conceives of the relationship between the subject and object in enactive terms. He asserts a position that draws on materialism and transcendentalism both, but unless we trace his materialist influences, his articulation of the imagination in the 1805 *Prelude* can easily be misinterpreted as wholly transcendentalist.

The poet's theory of imagination reconciles the two epistemological approaches. Until recently, though, scholars have lacked an adequate critical methodological approach to account for these philosophical continuities in Wordsworth's ever-evolving concept of mind and imagination. If, however, we look to recent developments in contemporary neuroscience, we find that the enactive theory of cognition provides the critical tools we need to make sense of Wordsworth's claims that the mind exhibits a "wise passiveness" ("Ex." 24) even as it "half-creates" the world it perceives ("TA" 107).[3] As a methodological approach, enaction dissolves artificial distinctions such as "matter and spirit, nature and the inner psyche, materialism and transcendentalism" (Engell, *Imagination* vii). Advancing a theory of embodied cognition, enaction proposes a relationship between object and subject that is very similar to Wordsworth's. It obviates the polarisation of subject and object by envisioning a relationship between the mind

[3] David Miall makes a similar claim in "Wordsworth's 'first-born affinities': Intimations of Embodied Cognition." He argues "that 'the active principle' in Wordsworth's understanding parallels the conception of 'enactive' mind in contemporary cognition" (694).

and the world that is mutually constitutive. Given a particular set of structural and environmental affordances and constraints, organisms bring "forth a domain of significance," or knowledge, that is relevant to them (Varela et al. 156). In this view, knowledge inheres neither in the objective world nor the subjective mind, but is produced by the interactions between the two. Hence, sentient organisms can be considered simultaneously active and passive. That is, they act on environment even as they are inscribed by it.

While it may seem anachronistic to apply a theoretical model developed in the late twentieth century to Wordsworth's work, I contend that his theory reconciles empiricism and transcendentalism in the same way that enaction reconciles contemporary competing epistemologies. Moreover, the materialist theories advanced by British and French materialists provided Wordsworth with a model of active mind that contains enactive elements. Darwin, Davy, Wedgwood, and d'Holbach advanced theories that enabled Wordsworth to posit a reciprocal relationship between the mind and the natural world that is not found in transcendentalist philosophy. Yet, Wordsworth was familiar with the theories of each of these men through publications or conversations. Not only is his theory predicated on materialist assumptions, but he pushes the empirical view of the active mind even further than his influences did. In short, Wordsworth's theory of cognition is not merely active, but enactive.

I contend that Wordsworth was a materialist in his early years, particularly with respect to the concept of embodied cognition. Poems such as "Tintern Abbey" and *The Prelude* of 1799, discussed below, present mental experiences that have typically been considered as disembodied flights into the realm of pure intellect—experiences such as transcendence or encounters with the sublime—in materialist terms that clearly make the body the locus of these events. Even if his commitment

lasted only for a short time, traces of materialism in his work persist beyond 1805. The concepts elaborated in the 1799 and 1805 versions of *The Prelude*, as well as the *1815 Preface* to *Poems* do not neatly conform to transcendentalist tenets, as critics such as Grob have argued, but continue to draw heavily on empirical materialism. In this chapter, I interrogate Wordsworth's cognitive theory in the 1799 and 1805 versions of *The Prelude* and turn to other significant poems such as "Tintern Abbey" to establish the materialist basis of his views. While I look to the two-part *Prelude* of 1799 as the "more tightly constructed" poem with "its single theme the birth and growth of imagination" (J. Wordsworth, "Two-Part" 581), I also interrogate the apostrophe to imagination in Book VI of the 1805 *Prelude* as well as the discussion of imagination in Book XIII. I argue that Wordsworth did not "decisively reject . . . the Hartleyan account of mind" (Miall, "Problematics" 235), but offers a significant modification of Hartley's theory that is in keeping with the second wave of Romantic cognitive science.

While the 1805 *Prelude* does contain transcendental elements, I argue against Grob's assertion that "by the time he reached the end of *The Prelude* Wordsworth's principle article of faith had unmistakably shifted" (Grob 38). The contradictory transcendentalist and materialist elements in the poems composed between 1795 and 1798 are more usefully read in terms of enaction. In order to analyse Wordsworth's work in terms of this critical approach, I first outline the basic premises of enaction, focusing on the concepts that provide the most insight into Wordsworth's theory of imagination. My discussion includes d'Holbach's *System of Nature; or the Laws of the Moral and Physical World* (1770), which Wordsworth would have read before it was translated into English in 1797, as an eighteenth-

century model of enaction.[4] After a discussion of the texts under consideration, the chapter concludes by tracing Wordsworth's evolving definition of imagination from the 1800 head note to "The Thorn" to the more involved discussion in the *1815 Preface*. I maintain that despite his adoption of orthodox Anglican Christianity, Wordsworth's concept of imagination retains some decidedly materialist characteristics.

The Enactive Theory of Cognition

Enaction is a model of cognition proposed in the 1990s by Chilean biologist Francisco Varela and his colleagues Evan Thompson and Eleanor Rosch. Basing their theory on work Varela had done on autopoiesis in the 1970s and 80s with his mentor Humberto Maturana, they developed enaction as a corrective to the cognitivist hypothesis. The dominant model that emerged in the wake of the 1940s and 50s Macy Conferences on cybernetics, cognitivism sees the brain as a computer.[5] Under this model, the brain takes information in from the external world, processes it, then delivers outputs in the form of behaviours, intentional states, and other observable phenomena. In this "traditional way of looking at the brain, perception was supposed to feed information into the brain, which in turn led to thoughts about the information . . . and finally action" (Ellis 169). Cognitivism defines cognition in terms of computation and symbol manipulation, much as a computer processes code. Underlying this view is an objectivist philosophy that sees information as something

[4] Years later, Wordsworth still retained a French copy of d'Holbach's book that was republished in 1781 (Shaver and Shaver 125). Paul Henri Thiry, Baron d'Holbach had originally published his theory in 1770 under the title *Système de la Nature ou Des Loix du Monde Physique et du Monde Moral* under the pseudonym Jean-Baptiste de Mirabaud.

[5] The Macy Conferences were a series of interdisciplinary conferences that met from 1946 to 1953 to develop a universal theory of communication that would apply to both organic and artificial systems. From these conferences emerged the twin disciplines of computing science and neuroscience. For a history of the Macy Conferences, particularly as it relates to literature, cultural production, the body, and humanism see Hayles. For a complete transcription of conference proceedings, see Claus Pias, *Cybernetics: The Macy-Conferences 1946-1953, Volume I* (2003).

that is present in the external environment, disconnected from percipients. Knowledge accrues when a subject accurately perceives empirically verifiable facts about the world. In this respect cognitivism shares certain assumptions with the early empirical theories of mind advanced by Hartley and Priestley. While cognising organisms are equipped with the appropriate sensory apparatus to gather environmental data, natural phenomena constitute an objective reality that exists independently of apperception.[6] This view locates knowledge in the object.

Opposing the idea that information exists without reference to a perceiving subject, enaction responds to cognitivism from a philosophical position that is altogether different from objectivism. Drawing on autopoiesis, the biological systems theory that posits a mutually co-dependent relationship between organisms and their environments, enaction begins with an assumption of reciprocity, rather than privileging either objectivity or subjectivity (See Humberto and Maturana; Maturana and Poersken). Varela and his colleagues do not see cognition in terms of symbol manipulation, but define it as the "enactment of a world and mind on the basis of a history of actions that a being in the world performs" (Varela et al. 9). According to this principle, known as structural coupling, perception is based on action. Perception initiates "movement of the eyes, hands, feet, and body, as well as providing information about the body in its environment" (Miall, "Embodied Cognition" 698). The action that any given organism can take, perceptive or otherwise, is both enabled and limited by the organism's structure, as well as by the environment in which it lives. Thus, cognition is, in this respect, structurally determined.

According to structural determinism, perception is determined by an organism's structure, or physiological organisation. The structural composition of an

[6] For a thorough, though partisan, summary of the cognitivist position, see Chapter 3, "Symbols: The Cognitivist Hypothesis" in Varela, Thompson, and Rosch.

organism's nervous system, its organs of sense and the body as a whole, delimits the types of interaction it can have with the world. For example, some animals have dichromatic vision (squirrels, rabbits), while others are trichromatic (humans, dogs). The number of colour dimensions an organism sees in its environment—whether two, three, or more—has a significant impact on its experience of the world. It shapes the type of world that it sees and the knowledge it has about its environment. Structural determinism shifts the emphasis from the external world to the interactions that occur between an organism and its environment and calls attention to embodiment. Enaction is a way of knowing the world in consequence of the actions an organism performs. Human beings (and all other cognizing species) acquire knowledge by engaging in the activities that they are capable of executing, given the constraints of their bodies and the environment, both.

In this sense, cognition is "both *embedded* (the mind is actively situated within the environment around us) and *embodied* (shaped by a living body with sensual, kinaesthetic, visceral, affective, and other powers)" ("Embodied Cognition" 697-98). Emphasising embodiment, enaction rectifies another limitation in the cognitivist approach. Where cognitivists focus on the brain, almost to the exclusion of the rest of the body, enactivists take the entire body into account.[7] They see it as part of an organism's cognitive apparatus along with the central and peripheral nervous systems. Referring back to the example of vision, cognitivism understands colour as a quality that exists in the external world to be perceived and understood by percipient subjects. Enaction, on the other hand, understands it as part of an organism's phenomenological world, that is, the world of its lived-experience. The

[7] A representative example of the way cognitivism ignores embodiment as a crucial facet of cognition, see Ramachandran, "Vat," which claims that the cranium is simply a "vat" that holds the computational brain Another example is Hans Morevac's dream of uploading human consciousness onto a computer microchip in *Mind Children: The Future of Human and Robot Intelligence* (1988).

concept and definition of colour do not exist independently in the world, but emerge from structurally defined interactions with the environment. Enaction emphasises the structure of the organism's body as a central factor in perception and knowledge production.

This emphasis on structural organisation has a theoretical corollary in the Romantic period. While it found a precedent in the British tradition in the work of John Thelwall, which will be considered in the following chapter, a more likely influence on Wordsworth's thinking is Baron d'Holbach's *The System of Nature*. In this three-volume text, d'Holbach outlines a system of ethics based solely on the natural order, discrete from any religious metaphysics, and argues that "man is, in the whole, the result of a combination of certain matter, endowed with peculiar properties, of which the arrangement is called *organization*" (I: 32). The types of actions that an organism can undertake is enabled by as well as "circumscribed" by its organisation (I: 18). In twenty-first-century terms, these opportunities and limitations imposed by environmental and structural factors are known as affordances and constraints. One human affordance is the ability to know the world around us on not just a conscious but self-conscious level. Our ability "to feel, to think, to act" is a direct result of our corporeal organisation; however, while it "distinguishe[s us] from other beings," self-consciousness does not radically separate us from the rest of the natural world (I: 32). Rather, we are joined to it, according to d'Holbach and his British colleagues, by our status as organised material beings.

"Man," d'Holbach claims, is not situated above the natural world, but "is the work of nature---he exists in nature" (I: 17). Like the British Romantic cognitive materialists, he saw human beings as integrated into the natural world, not elevated above it. Differences between people, animals, and insensate forms of matter arise only from differences in organisation. Not only are "the faculties . . . called

intellectual . . . only certain modes or manners of being and acting, resulting from the organization of our body," but so, too, is our propensity for morality (I: 177). Moral behaviour, like any other behaviour, according to d'Holbach arises from man's "modes of action," which are "owing to his particular organization" (I: 19). This emphasis on organisation, as with contemporary enaction, led d'Holbach to view action as necessary to perception.

A basic tenet of enaction, however, is not simply organisation, but self-organisation, as Varela's Bittorio experiment demonstrates.[8] An organism's organisation does not merely conform to environmental conditions, but ensures that it "continuously produces the components that specify it" (Varela, "Intentionality" 5). That is, it organises itself in a way that ensures its survival. All organisms, from the most simple to the most complex, seek "to maintain and enhance their patterns of life" (Ellis 180). That is, they seek not just homeostasis, but also well being. *The System of Nature* expresses a similar principle. Everything is organised for continued existence: "The stone," for example, "by the strong adhesion of its particles, opposes resistance to its destruction" (d'Holbach I: 91). While animate "beings conserve themselves by means more complicated," these means are still "proper to maintain their existence against that which can injure them . . . . Conservation, then, is the common end towards which all the energies, the force, the faculties of beings seem continually directed" (I: 91). While this position may seem to tend toward transcendentalism or even solipsism—wherein an organism's own self-perpetuating activity drives its entirely subjective perceptive experience—in fact, it posits an interactive relationship with the environment. An organism's knowledge is not

[8] Bittorio is a cellular automaton comprised of binary code that was dropped into a random soup of "0s and 1s, much like a cell that is plunged into a chemical milieu" (Varela et al. 151). As Bittorio encounters various disturbances, it only responds to certain stimuli, thus, exhibiting a tendency toward self-organisation. See Varela et al., pp. 151-157 for a discussion of this experiment.

determined solely by its internal organisation, but shaped by the milieu in which it lives as well. In the enactive view, the environment takes on a new significance based on the relationship between the perceiver and the perceived. As we shall see, this relationship is similar to the one Wordsworth envisions between humans and the natural world in his early poetry, particularly the 1799 version of *The Prelude*.

According the principle of structural coupling, structure also determines ontology and identity. A concept taken from the theory of autopoiesis, structural coupling refers to the cross-temporal relationship between an organism and its environment. That is, it looks to the pattern of interactions that have shaped both the organism and its environment over time in order to define or give identity to the organism. The Bittorio experiment provides a clear illustration of the way in which structural coupling defines an organism's identity. As Bittorio responds only to certain stimuli, a clearly recognisable pattern emerges from the stable pattern of changes in its spatiotemporal configuration. This pattern defines Bittorio's identity. Selecting only certain sequences, the organism's identity as an odd sequence selector emerges. This experiment also demonstrates how an autonomous system enacts a domain of significance by attending to only the stimuli that are relevant to it. The issue of identity is also related to ontology. According to Varela, autopoiesis defines an organism as a living entity "by characterizing its *basic mode of identity*" which is "properly speaking, to address the issue at an ontological level" ("Intentionality" 6). He asserts that the unique features of living organisms are contingent upon their individual structures. Likewise, d'Holbach sees ontology as a function of organisation: the "various methods of action, which is the necessary consequence [of organisation], constitute . . . the *essence* of beings" (I: 31). Being, in this view is structurally determined. What an organism is and how it experiences the world and itself is defined by the kinds of actions it can take, which is dictated by the

type of body that it has. He further claims that from the "great mobility . . . of which the particular organization of the individuals of our species [human beings] . . . result wit, sensibility, imagination, taste, &c. &c." (I: 188-89). In other words, the very qualities that define our ontological experience are the result of physical organisation.

A significant implication of this concept is the mutually co-dependent relationship it posits between organism and environment. In this relationship, identity and ontology are not attributable to mechanical or biological determinism or to the presence of an immaterial soul or disembodied mind. While the organism is shaped by the environment it inhabits, as empirical cognitivists such as Locke and Hartley propose, the environment is likewise shaped by the actions of the organism. Like the early empiricist theories of mind, structural coupling acknowledges the impact of the external world—both ontogenetically and phylogenetically—on the organism. While not exactly blank slates, given the structural affordances and constraints imposed by organisation, organisms are, however, shaped by their interactions with the environment. For example, a moisture and light loving plant living in an arid or dark environment will be smaller and more stunted compared to the same plant living in a humid, sunny region. Organisms, including human beings are to an extent inscribed by the external world. Yet, like transcendental theories that assert the power of the human will to impose itself onto its surroundings, structural coupling also recognises the impact that organisms have on their environment. As anyone who has ever seen a beaver dam knows, organisms are quite capable of altering their environments. Indeed, the history of the human species is, in some respects, a record of how we have altered the natural world.

As a concept, structural coupling is important to the Romantic cognitive science debates, particularly Wordsworth's intervention in these discussions,

because it helps us understand how he conceived of the relationship between human beings and the natural world. It clarifies the hitherto muddy issue of subject-object relations in his early poetry and his theory of imagination. Baron d'Holbach's discussion of a concept that is very similar to structural coupling provides an eighteenth-century model for Wordsworth. In d'Holbach's account of the relationship between organisms and their environment, all life forms "have occasion to co-order themselves with the whole from which they have emanated" (I: 145). "[W]ithout" the capacity for mutual co-dependence, "they could [sic] not be able to subsist" (I: 145). That is, if an individual or a species cannot adapt to its environment, it will not survive. It is not, however, just the organism that must adapt. The environment, too, is co-ordered and changes in response to its inhabitants. This relationship of "relative co-ordination," according to d'Holbach, is that "which we call THE ORDER OF THE UNIVERSE" (I: 145). Where enactionists talk about structural coupling, the baron talks about the "faculty of co-ordering" (I: 145). Thus, the universe is structured by the mutual constitution of living organisms and their surroundings. In this view, neither environment nor organism exerts primacy over the other, but each is defined and altered by the other.

This view also has an epistemological component: "This aptitude in man to co-order himself with the whole . . . gives him an idea of order" (d'Holbach I: 147). Humankind's relationship with its environment provides the ontological basis for its phenomenological knowledge of the world. Order is not superimposed by humans onto an inchoate environment, as in the transcendentalist view; nor is it something they observe in the natural world, as materialist empiricists believed. Instead it reflects an ontological experience of co-dependence and non-priority. That is, neither subject nor object has priority over the other, but is mutually constituted. With its emphasis on reciprocity, the enactive view mediates competing

epistemological approaches. From a contemporary perspective, it reconciles positivist structuralist theories of knowledge and poststructuralist and deconstructionist claims that all knowledge is ultimately unstable. It provides a middle way that recognises "the distinction between self and world," but does not polarise either into independent entities or phenomena, but provides "continuity between them" (Varela et al. 3).[9] Though it was not formulated as a response to transcendentalism per se, the enactive approach does, in fact, offer a solution to the rift between transcendentalism and materialism.[10]

Applied to the Romantic era, enaction not only mediates between the objectivism of empiricism and the subjectivism of transcendentalism, but it does so in a way that will be familiar to students of Wordsworth. It offers an alternative to the strict dichotomy offered by empiricist and transcendentalist theories of mind that allows us to reconfigure our understanding of subject-object relations in a way that helps us to make sense of Wordsworth's theory of mind. If neither mind nor world is predetermined, then knowledge resides in neither the subject nor the object, but is the product of an organism's interaction with its environment. In the enactive view, information does not exist independently of a perceiving subject. Rather, data belong to the domain of phenomenology. Our experience of the world allows us to perceive certain regularities and patterns, which we call laws. These laws, however, are not inherent in the natural world, for organisms with different

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[9] Varela et al. refer to the work of Maurice Merleau-Ponty, particularly *Phenomenology of Perception* (1945). Merleau-Ponty's recognition that there is no fundamental separation between self and world, subject and object, provided the inspiration for their experimental work in neuroscience.

[10] Varela et al. do, however, claim that objectivism entails transcendentalism. They argue that if the external world exists independently from its inhabitants, then facts, data, information, that is, truth must exist transcendentally. For, "by definition, something is independent, intrinsic, or absolute only if it does not depend on anything else; it must have an identity that transcends its relations" (Varela et al. 224). This definition of the transcendent points to an interesting twist in the evolution of the cognitive science debates, whereby objectivism and transcendentalism are no longer seen as competing systems, but as espousing the same basic conception of subject-object relations.

structures experience the world differently. If, like humans, they were able to articulate their experiences, they would perhaps formulate different laws of nature.

Knowledge, then, is contingent upon the interactions that an organism has, or more properly, *is able to have*, with its environment. Knowledge emerges from interaction because every organism "performs an interpretation in the sense that it selects or brings forth a domain of significance out of the background of its random milieu" (Varela et al. 156). This approach eliminates questions about where knowledge resides—a question that preoccupied the Romantics and their scholars—for it does not exist in the natural world waiting to be perceived and understood. Nor does it exist in the structure of *a priori* mental categories that we superimpose on the world in order to understand it. Nor does it exist in some ideal abstract reality as abstract forms akin to Plato's forms, as Thomas Brown and other dualist objectors to materialist theories of mind assert.

Eliminating questions about the location of knowledge abolishes another pressing question raised by scholars: where to locate agency. In the enactive view, neither subject nor object has ontological priority. That is, neither subject (*qua* subject) nor object (*qua* object) exists without the other. The terms, or positions, have no ontological or epistemological significance unless they are considered together. Agents, then, do not have status as ontological entities. Agency does not substantially exist, but emerges as a property of the interaction between subject and object. In this interaction either the subject or the object could emerge as the agent depending upon which entity is exhibiting the property of agency. In this respect, enaction draws on connectionism, or the concept of emergence, a cognitive theory that, like enaction developed as an alternative to cognitivism in the late 1970s.[11]

[11] Emergence or connectionism is a cognitive theory that dispenses with the notion of the brain as central computer processor. Instead, it sees it operating "on the basis of massive interconnections in a distributed form" from which particular properties and behaviours

Agency is not the unconditioned capacity to act, as in German idealism, but emerges from the action that individual agents take in the world. This action is only meaningful in relation to an environment. Agency is delimited by structural coupling. It is neither wholly causally (i.e., environmentally) determined nor wholly free of environmental constraints.

With respect to Wordsworth, then, we do not see him alternately locating agency in nature and in the mind as Thomas and Miall suggest, but locating it in the interaction between the two. Nature, "a book / Before our eyes we could not chuse but read," does, in a sense, exert agency as it forces itself upon our senses (*1805 Prelude* VI: 474-75). Yet, our organisational structure also delimits this interaction. Human beings possess multiple sensory channels that cannot be easily shut off. So, while we "cannot chuse but see," hear, and "feel" ("Ex." 17, 19), neither are we at the mercy of the external world. As subjects, we stand "Not prostrate, overborne—as if the mind / Itself were nothing, a mean pensioner / On outward forms," but in a mutual relationship with our environments (*1805 Prel.* VI: 666-68). "Our meddling intellect" ("TT" 26) also exhibits agency when it "Misshapes the beauteous forms of things" (27) or "watches and receives" (32). Thus, agency emerges from the interaction between the natural world and the subject.

This new understanding of knowledge and agency brings us back to enaction as a methodological approach to Wordsworth's theory of mind. By now it should be evident that the enactive approach dissolves the polarisation of subject and object found in both the materialist and the transcendentalist theories of cognition. By granting ontological priority to neither and by defining them as mutually co-dependent, enaction frees us from having to choose between the two extremes. The

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emerge (Varela et al. 85). It understands the brain as being comprised of many agents that work together to form agencies. See Varela et al., Chapter 5; "Emergent Properties and Connectionism;" and David E. Rumelhart, James L. McClelland, and the PDP Research Group, *Parallel Distributed Processing: Explorations in the Microstructure of Cognition*, 2 vols. (1986).

irresolvable critical binary becomes solvable once we realise that Wordsworth was able to synthesise the best parts of materialism with the most useful aspects of transcendentalism in order to formulate a theory of mind and creative imagination that posits a necessary and reciprocal relationship between the percipient subject and the world it perceives. With this new critical framework in place, we can now turn to Wordsworth's work to see how his theory of mind is enactive and resolve some longstanding critical problems.

Wordsworth's Theory of Mind

Before his sojourn in France, Wordsworth's poetry was devoid of the philosophical concerns that would later dominate his most significant work. Poems composed in the late 1780s, such as *An Evening Walk* and *Descriptive Sketches* (published 1793), abound with descriptions of nature that depict "responses to various scenic effects" that are "within the sentimental tradition" (Erdman II: 504). These poems also draw upon the picturesque tradition that had been recently been popularised by Gilpin, though Wordsworth dismisses this interest in "Tintern Abbey" and *The Prelude* (see Liu; Miall, "Alps"). After he returned from France in 1793, however, his poetry began to change. In the 1794 manuscript revisions of *An Evening Walk*, published in 1820, Wordsworth expresses a burgeoning interest in exploring "the illimitable tracts of mind" to which "the harmonious doors / Of Science have unbarred celestial stores" (*PW* I: 13, *App. Crit. B*). Here we see the first germs of Wordsworth's lifelong fascination with the relationship between the human mind and the natural world.

His encounters with the Girondists, the French revolutionary political party founded on the ideas of d'Holbach and other materialist *philosophes*, exposed him to

"a pantheistic creed involving a living, active universe" (Piper 68).[12] For Piper, this pantheism is the key to understanding Wordsworth's definition of imagination as "the power to communicate with the life in natural objects" and to understand and respond to "the living qualities in natural objects" (2). Strictly speaking, pantheism implies a belief that God is immanent in the natural world; however, critics such as Jonathan Wordsworth and William Ulmer, dub this philosophy the "One Life." The French *philosophes*, including d'Holbach, were primarily atheists. Thus they credit Coleridge with most of Wordsworth's philosophical beliefs during his "One Life" phase.[13] Elements from *The System of Nature* are present in his early work, including the *1800 Preface* and the 1799 version of *The Prelude*, which points to d'Holbach as a model for Wordsworth's theory of cognition and a particular relationship between the natural world and the human mind in which both are capable of exhibiting agency.

Like Hartley and Priestley, who claim that human happiness can be furthered by the study of nature, d'Holbach asserts that "ignorance" of the natural world and of "human nature . . . has prevented man from enlightening his morals" (I: 26). Not only, he claims should humankind study nature and "learn her laws," but it must "apply these discoveries to [its] own felicity, and . . . submit in silence to her laws" (I: 18). Wordsworth advocates for this sort of wise passiveness, which we find expressed in poems such as "Expostulation and Reply" and "The Tables Turned." In d'Holbach we see a precedent for Wordsworth's belief that

> One impulse from the vernal wood

[12] The Girondists were a republican party that held power during the French Revolution from 1791 to 1793 before they were displaced by the more radical Jacobins. For an account of Wordsworth's time in France as it relates to materialist and empiricist philosophy, see Piper, pages 60-84.

[13] Miall usefully distinguishes between pantheism and animism, claiming that Wordsworth's "animism extended to include a pantheistic belief," but "expressions of animism continue to recur over several years," which indicate that "it is the animism rather than the short-lived pantheism that retains its significance for Wordsworth" ("Embodied Cognition" 695).

> May teach you more of man;
> Of moral evil and of good,
> Than all the sages can ("TT" 21-24),

and that we must approach nature with a heart "That watches and receives" ("TT" 32). The British empiricists influenced Wordsworth's understanding of association and embodiment found in the *1800 Preface*. The idea that poets could gain insight about the natural world and human nature by cultivating "habits of meditation," however, derives from d'Holbach (*PrW* I: 126).

In *The System of Nature*, d'Holbach claims that the moral laws of nature can only be "heard by those honest hearts accustomed to reflection" (I: xi). Though *The Prelude* was inspired by and addressed to Coleridge, the French *philosophe* provides Wordsworth with the principles that guide his exploration of the human mind and its relationship to nature. Dissolving the distinction between the moral and the physical aspects of human beings, d'Holbach urges philosophers to

> contemplate attentively the visible world, and let us see if it will not suffice, and enable us to judge of the unknown territory of the intellectual world; perhaps we shall find there has been no reason for distinguishing them, and that it was without motive, that the two empires have been separated, which are equally the inheritance of nature. (I: 30)

In the 1799 version of *The Prelude*, Wordsworth sets out to understand the mind by attending to the natural world and its influence on the intellect. He attempts to reunite "the two empires" under the rubric of enaction.

When Wordsworth returned to London and fell in with the Godwin circle, his poems took a temporary turn away from materialist explorations of mind. In the

company of William Godwin and Joseph Johnson, he began writing poems of protest against poverty, social inequity, and war, such as *Salisbury Plain* and *The Convict*, which were written between 1794 and 1796 (*Music* 55-56).[14] In 1797, however, two events transpired that would irrefragably alter the course of his poetic career, in part because they rekindled Wordsworth's interest in the human mind. In June, Coleridge visited him at Racedown for two weeks, thus inaugurating the poets' famous friendship and creative partnership. A month later, Wordsworth moved to Alfoxden to be close to his new friend and in September Tom Wedgwood visited for several days to discuss his plan to open an experimental school based on the latest advances in cognitive science. Though Wordsworth's experiences in France, his schooling at St. John's College at Cambridge, and possibly even his association with the Godwin-Johnson circle had familiarised him with materialist theories of mind, Wedgwood and Coleridge introduced him to the second wave of cognitive science.[15] These theories include Darwin's active theory of mind, as well as Wedgwood's unpublished materialist theories regarding the association of emotion. Later, in 1799, when Wordsworth and Coleridge returned from Germany, he became familiar with Davy's theories as well (see Hindle).

The ongoing discussions regarding mind and matter, in which Coleridge was an enthusiastic participant, motivated Wordsworth to begin experimenting with poetry that more explicitly explores the relationship between the mind and the natural world. From the first, inspiration for poems such as "The Pedlar," "Tintern Abbey," and the 1799 *Prelude* came from materialist sources. The theories expressed

[14] Johnson was a close friend and publisher of both Godwin and Priestley. Both Johnson and Godwin would have been familiar with Priestley's materialist theories of mind as well as his radical politics.

[15] We know for certain that Wordsworth had read Locke's *Essay Concerning Human Understanding* because it was on his university exams. Furthermore, since Priestley had popularised Hartley's *Observation*, it had become standard reading material at Cambridge during (and following) Wordsworth's tenure there.

in these poems depend upon the premise of an embodied mind that is an integral part of the natural world, a materialist concept that originates with Hartley's *Observations* and d'Holbach's *System*. Additionally, he draws on the idea of an active mind propounded first by Darwin and later by Davy. In each of these poems, Wordsworth presents a mind that has "An *active* power" that is "quick to recognize / The moral properties and scope of things (*Pedlar* 40, 62-63). Yet, the poems also reflect the postulate that nature "can so inform / The mind that is within us" by impressing it with sense data ("TA" 126-27). Working within the language of association, Wordsworth characterises this relationship by describing the mind as simultaneously active and passive. These "allusions to activities of the mind that seem self-determined" have confounded critics, particularly because they occur during Wordsworth's so-called empirical phase (Grob 60).

Wordsworth reconciles these two seemingly incompatible views of mind by conceptualising a mind that exists in a co-dependent relationship with its environment. This mutually dependent relationship informs Wordsworth's understanding of the creative imagination as well. While the 1799 *Prelude* contains the most sustained expression of Wordsworth's enactive theory, we find materialist conceptions of mind that ascribe agency to nature along with descriptions that ascribe it to human beings articulated in several poems written between 1798 and 1805, including the 1805 *Prelude*. According to critics such as Grob and J. Wordsworth, by 1805 Wordsworth had definitively abandoned empiricism. Hence, they read references to these concepts in the 1805 *Prelude* in one of two ways. In the first instance, they see the incongruous language as "inner contradictions reflecting clearly those philosophic differences that set" Wordsworth's philosophical phases apart (Grob 11). In the second approach, this language is the consequence of sloppy editing. That is, they claim Wordsworth simply did not get around to deleting

or revising the ostensibly heretical statements in his posthumously published work.

Yet, neither of these explanations adequately account for similar patterns in the published poetry. For example, *The Excursion*, which is an overtly Christian poem, asserts that

> 'To every Form of Being is assigned'
>
> . . .
>
> 'An *active* principle:—howe'er removed
>
> From sense and observation, it subsists
>
> In all things, in all natures . . . ['']. (IX.1-5)

While J. Wordsworth claims that this statement "comes across . . . [as] changed in tone but not in substance," this new tone does not explain away the inclusion of this type of language in poetry published in 1814 ("Two-Part" 574). This statement ascribes agency to objects in the world in a manner reminiscent of the earlier poetry. It seems unlikely that this language is simply the consequence of carelessness. Rather, it indicates that Wordsworth's theory of mind retains materialist threads despite its incongruous philosophical views that seem to vacillate between the two epistemological approaches. Likewise, the language of the thirteen-book *Prelude* of 1805 has generally been taken as proof that Wordsworth rejected empiricism for transcendentalism. His depiction of imagination in Books VI and Book XIII, though they employ transcendentalist language, expresses an embodied concept of mind that relies on materialist principles.

In the head note to "The Thorn," Wordsworth defines imagination as "the faculty which produces impressive effects out of simple elements," but in the *Preface* he claims that it has the power to produce change on a corporeal level (*PW* II: 512). The "power of the human imagination," according to Wordsworth, "is sufficient to produce . . . changes in our physical nature" (*PrW* I: 150).These disparate statements

have two significant connections. First, in both cases the definition of imagination has origins in materialism, which I will discuss presently, and second, it relies upon the concept of the embodied mind, which is one of most fundamental and important features of the materialist cognitive theories produced during the Romantic era. In "Tintern Abbey" as well as the 1799 *Prelude*, Wordsworth establishes that the mind relies upon "the body and its organs in the formation and continual reformation of an active subject of perception" (*British* 73). In other words, there can be no thought, no experience of a "purer mind," without the perceptive apparatus of the body ("TA" 31).

"Tintern Abbey"

A number of critics, including Levinson, McGann, Thomas, and J. Wordsworth, interpret "Tintern Abbey" in transcendentalist terms, particularly the lines in stanza two that describe Wordsworth's communion with nature. They see the experience of being "laid asleep / In body, and becom[ing] a living soul" as expressing or foreshadowing the transcendentalism that characterised his belief system after he embraced Christianity ("TA" 45-46). According to their reading, these lines signal "the actual moment when a spiritual displacement occurs—when the light and appearances of sense fade into an immaterial plane of reality" (McGann 87). In this view, idealism supersedes everything that comes before or after these lines. In my reading, the meditation on mind is necessarily contextualised by its connection to the material world, rather than an escape into fantasy. Wordsworth employs the materialist language of association when he urges his readers to let the natural world "inform / The mind that is within us," to let it "impress" and "feed" our minds "With lofty thoughts" ("TA" 126-29). These thoughts that sustain us against the vagaries of life highlight not the immateriality of thought, but the materiality of its source—a point that these critics miss, perhaps because they do not attend to the

scientific culture that informs the poems written during this period. As the structure and language of the poem illustrate, “Tintern Abbey” is indeed one of the “truly paradigmatic” poems of Wordsworth’s early materialist phase that unequivocally sets up a dependent relationship of mind on body (Grob 13).

The mental experiences that Wordsworth depicts in “Tintern Abbey” are contingent upon bodily sensation. He sets this up in the first stanza, which describes the view from above the Abbey and relates both its present appearance and its appearance five years previously. The sound of “waters, rolling from their mountain-springs / With a sweet inland murmur” (“TA” 3-4), the sight of the “dark sycamore” (10), “plots of cottage-grounds” and “orchard tufts” (11), “the wild green landscape” (14), and “hedge-rows, hardly hedge-rows” (12) exist in his memory as the “forms of beauty” (25) recalled in the next stanza. These images richly and sensually evoke the tangible sights and sounds of the scene, just as the “wreathes of smoke” invoke scent (“TA” 18). These details call attention to the concrete experience of seeing, hearing, and smelling the scene that precedes the mental recollections related in the next stanza. Structurally, the description of sense data comes before the account of the memories that sustain the poet “in lonely rooms, and mid the din of town and cities” (“TA” 26-27). Likewise, they precede the experience of leaving the body behind to “see into the life of things,” which is generally read in terms of transcendentalism (“TA” 49). The order of description indicates that even the most transcendent mental experiences are corporeal in origin.

Memory, too, is experienced as bodily sensation before “passing . . . into” the “purer mind” (“TA” 30). Memories are grounded in actual sensory experiences that are felt in the body during the process of recollection. While the portrayal of cognition in terms of an embodied process originates with materialist explanations of mind as a physiological process in general, the visceral account of memory has its

source in at least two different empiricist accounts of mind. According to both Hartley and Darwin, the recollection of past experiences stimulates the body in the same way as the original moment of perception, albeit with decreased intensity. Hartley claims that vibratiuncles are responsible for the bodily sensations experienced during the mnemonic act. These miniature vibrations are caused by the more intense vibrations of the medullary substance during perception, and they fire during the process of remembering. Darwin, on the other hand, supposes that recollected ideas replicate the same motions within the sensorium as in the original act of perception. In either case, memory replicates a physiological response similar to Wordsworth's first visit to the River Wye, inducing the "sensations sweet / Felt in the blood, and felt along the heart" recounted in the second stanza ("TA" 28-29). Regardless of the method of neural transduction, Wordsworth gives an account of memory that is consistent with empiricist explanations. When we attend to the materialist theories of mind that were in circulation during the Romantic era, we see that Wordsworth understood cognition in materialist terms and conceived of mental experiences in terms of embodiment.

Wordsworth's descriptions of transcendental experiences in "Tintern Abbey" also parallel Davy's materialist account of transcendence delineated in the previous chapter. Again, from the perspective of poetic structure, embodied experiences precede transcendental ones. The poem moves from concrete sensory data to memory to the transcendent experience of communing with nature. Like memory, transcendence depends on actual sensory data—either encountered for the first time, as in the ascent of Mount Snowdon in Book XIII of the 1805 *Prelude* or recollected, as in "Tintern Abbey." The juxtaposition of "this corporeal frame, / And even the motion of our human blood" ("TA" 44-45) with seeing "into the life of things" (49) signals the connection between embodiment and transcendence. It

demonstrates the necessary connection between the two. Wordsworth presents transcendence as Davy describes it, in terms of "deep and intense feelings" that are experienced on a bodily level (RI HD/20/a 130). For Wordsworth, as for Davy, transcendence is an embodied emotional experience rather than a moment in which the soul contacts an immaterial realm that exists independently of the sensible world.

I do not claim that Davy directly influenced the composition of "Tintern Abbey." After all, Wordsworth wrote it before he met Davy. Rather, I use Davy's model of transcendence to show how we might understand the seemingly contradictory elements in Wordsworth's poetry. The "transcendence of the temporal" described in "Tintern Abbey" and throughout *The Prelude* allows Wordsworth to find "significance in the feelings attaching" to mundane objects ("Problematics" 252). Transcendence is not a disembodied experience, but refers to the feelings inherent in the "spots of time" that become the basis of Wordsworth's sense of self (*Prel.* I.288). Transcendence, then, is a feeling evoked by sensory experience and highlights specific, significant moments.

The Prelude

The Prelude presents two types of experience that contribute to the growth of the poet's mind: transcendent and mundane. The transcendent experiences are emotionally significant moments that Wordsworth remembers in great detail. These are the notable "spots of time" that "with distinct preeminence retain / A fructifying virtue" (*Prel.* I.288-90) and nourish "our minds / Especially the imaginative power" (I.292-93). They are memorable events that feel transcendent in the moment and linger in the conscious memory. While these "spots of time" are clearly significant to Wordsworth's character development, there is another type of experience that he recounts, which is equally important, though less dramatic. These are the mundane

childhood events that he describes in almost list form (see, for example, *Prel*. I.1-80, I.198-258, or II.3-214). These are the routine proceedings of daily life. Though he does not experience them as being transcendent, they affect him unconsciously. While he does not remember them being emotionally significant, he later realises that they were indeed important to his emotional and mental growth. These two types of experiences, the transcendent or extraordinary and the quotidian or routine, share two important features. They are both accretive and they are both embodied. Together they accrete in the embodied mind to form the poet's character and his sense of self.

Wordsworth presents cognition as embodied in the *Prelude*, particularly the 1799 version but also in the 1805 and 1850 variants. The poem as a whole assumes that the mind is embodied as the text explores its growth. The climactic moments of the poem, including the two spots of time, depend upon the concrete sensory experiences of youth. The poem implicitly stakes a claim for embodiment by exploring the relationship between the mind and nature, a relationship that is necessarily mediated by the body. The title assigned by Coleridge in an excerpt published in a December 1809 issue of *The Friend* highlights this relationship. He called it *Growth of Genius from the Influence of Natural Objects, on the Imagination in Boyhood and Early Youth* (*Friend* II: 258). Though cumbersome, this title aptly describes the original purpose of *The Prelude* as Wordsworth conceived it in the late 1790s. Beginning with the opening lines, in which the River Derwent "loved / To blend his murmurs with my nurse's song," Wordsworth recounts incident after visceral incident from his childhood, thus setting up a tacit, but clear, relationship between embodiment and mental growth (*Prel*. I.2-3). The catalogue of images that follows is too voluminous to trace in complete detail here, yet, the sheer quantity of sensual descriptions indicates that perception is embodied, even when it occurs

unconsciously.

Wordsworth explicitly establishes the connection between embodied experience and the formation of the mind when he asserts that Derwent's music "composed" his "thoughts" and gave him "knowledge" when he heard its music mingle with his nurse's (*Prel*. I.11, 14). The more climatic and memorable events of the poem follow the same pattern. First he depicts a specific, concrete experience, then he describes its effect on his mental development. For example, after he steals the skiff and the mountain seems to come alive and chase him, "huge and mighty forms that do not live / Like living men moved slowly through my mind" (*Prel*. I.127-28). Likewise, the games he plays with his brothers and sister leave him "With weary joints and with a beating mind" (*Prel*. II.16). The coupling of body parts and mind, both equally affected and the precedence of the word "joints" before "mind" in the line indicate the dependence of mind on body. These examples are but a few of many. Yet, at each significant juncture in his development, Wordsworth describes a phenomenal incident in sensual detail that leads to a psychologically formative episode. Structurally, physiological events and mental effects are paired in such a way that the material origins of mental phenomena are always identified and placed in close textual proximity to one another, signifying a particular type of body-mind relationship. The premise of the poem, its language, and its structure make clear that mental events are embodied. They demonstrate Wordsworth's materialist understanding of mind-body relations.

Wordsworth's representation of cognition as embodied in *The Prelude* and elsewhere signals his debt to materialist empiricism. Furthermore, the use of associationist language throughout *The Prelude* indicates that Wordsworth thought of cognition in terms of association despite his ostensible repudiation of the doctrine in the second part of the poem. In the first stanza he asserts that "The mind of man

is fashioned and built up / Even as a strain of music" (*Prel*. I.67-68). Elsewhere he refers to natural objects that make impressions (*Prel*. I.194), such as "the changeful earth" that "on my mind had stamped / The faces of the moving year" (I.391-93), and scenes that "did at length / Become habitually dear" (I.439-40). Terms such as "stamped" and "habitual" signal his associationism. Yet, Wordsworth does not adopt it uncritically. Like other participants in the mind-matter debate, he modifies the doctrine to reflect his own beliefs about cognition, which are based on personal experience. One of the major tenets of his theory of cognition is that the "process of coming to know the world is due . . . to feeling" ("Problematics" 240). Not only are ideas associated with physical objects in Wordsworth's theory of mind, but so are emotions.

The most basic emotions are joy (or love) and fear, which are caused by pleasurable or painful stimuli. In *The Prelude* Wordsworth's youthful experiences continually alternate between the two. "The impressive agency of fear" counterbalances the "pleasure and repeated happiness" of being in nature (*Prel*. I. 433-34).[16] Sometimes nature increases Wordsworth's sympathies "in vulgar fits of joy" (*Prel*. I.413). At other times it seems to chastise him for morally suspect deeds, such as killing birds. Nature takes on a spiritual significance because of the emotions associated with these events. The emotion he feels during these episodes—pleasure in play or guilt for transgression—becomes linked to natural objects, thus lending them meaning and giving them a permanent place in his memory. Nature's "hues and forms were by invisible links / Allied to the affections" because of the association of emotion to particular sensory stimuli, as in Wedgwood's theory (*Prel*. I.441-42). Prior to his encounter with empiricist philosophies of mind Wordsworth "had not been equipped with a theory which explained" these "moments of ecstasy in his

[16] This alternation between joy and fear is also related to Wordsworth's concept of the beautiful and the sublime, but that is beyond the scope of the present discussion.

childhood" (Piper 74). His encounter with d'Holbach's work and his later meeting with Wedgwood, however, introduced him to a critical framework that allowed him to use association to better understand his own development.

According to d'Holbach, "The first faculty that we see in the living man, and that from which flow all others is FEELING" (I: 177). Thus, he claims that emotion is the primary cognitive process that drives all others. Wedgwood, too, asserts that a person's emotional state plays a crucial role in forming associations. Crippled by his own physical and emotional ill-health, Wedgwood speculates that "disordered, chaotic, random, half-formed impressions produce" jumbled ideas and emotional discord that could debilitate a child well into adulthood (Erdman II: 488). Like Wordsworth, he recognises the foundational role of emotion in defining human experience as well as character development. Wedgwood's own efforts to trace the growth of his mind led him to conclude that a person's emotional state colours perception in lasting ways.

Wordsworth came to the same conclusion, perhaps as a result of his conversations with Wedgwood, though it is likely that he held this belief prior to their meeting and Wedgwood merely confirmed it. In either case, their meeting nudged the poet "along the right road to an understanding of the source and uses of his *own* genius" and these sources were distinctly emotional in origin (Erdman II: 487). Each of the two spots of time recounted is an emotionally charged incident that abides in Wordsworth's memory. In the scene wherein he gets separated from "honest James," he is lost and frightened (*Prel*. I.302). Consequently, the landscape takes on a sinister appearance. Stumbling across the spot where a man had been hanged for murdering his wife adds to the child's fear. Consequently, the "long green ridge of turf" assumes a "shape . . . like a grave" (*Prel*. I.312-313). Likewise, the girl with the pitcher seems "with difficult steps to force her way / Against the blowing

wind" (*Prel*. I.317-19). In these lines Wordsworth's feelings lend an emotional valence to the scene that colours his perception and interpretation of it. He comments on this phenomenon in the next lines, admitting that "It was in truth / An ordinary sight" (*Prel*. I.319-20), but even so, he would

> . . . need
> Colours and words that are unknown to man
> To paint the visionary dreariness
> Which . . .
> Did at that time invest the naked pool.
> (*Prel*. I.320-24)

Wordsworth's fear lends an emotional tone to the scene that continues to haunt him in memory.

Current research in enactive cognition demonstrates that d'Holbach's claim that emotion is the "first faculty" is, in fact, correct (I: 177). According to cognitive psychologist Ralph Ellis, "our emotions gear us up for action, and *then* we search and scan the environment for relevant perceptual cues, which become conscious to the extent that they resonate with image schemas" (169). In other words, we notice only those details that are relevant to our current mood. Wordsworth's emotional state in the lines above does not merely colour his experience, but actually directs his attention to certain details. The fear engendered by getting separated from James and losing his way causes him to notice the spot where the murderer was hanged and "The woman and her garments vexed and tossed / By the strong wind" rather than other less gloomy details that were surely present at the scene (*Prel*. I.326-27).

The Prelude represents significant transcendental moments in terms of embodied emotional experience. Each emotional moment is corporeally grounded in a specific event or experience that relies on the body's sensory apparatus and

emotional systems. This treatment of transcendence signifies that, for Wordsworth, feeling has "both temporal and eternal aspects" ("Problematics" 251). Certain affective moments are inscribed in the body as memory and continue to affect the perceiver long after the actual moment has passed. The continued emotional effect makes it seem as if these moments and their attendant feelings have an eternal existence that somehow transcends temporality. They seem to transcend time and historical circumstance because they retain their emotional significance and live on in the mind. The memories and the feelings linger sometimes for years after the actual event has occurred.

Critics such as Levinson and McGann claim that these transcendent moments exemplify the Romantic ideology. They see Wordsworth as clinging to the myth of an idealised mental life that exists ahistorically. In their interpretation, the significant emotional moments in Wordsworth's poetry celebrate the "the triumph of the inner life over the outer world" (Levinson 82). Memory and feeling, however, are embodied processes according to materialist theories of mind. These memories, including the spots of time, are not moments that free the poet from space and time; they are fixed, concrete events in Wordsworth's personal history. Furthermore, they remain fixed in a particular historically-bound body and exist as phenomenological categories of experience that the poet can replicate in memory. They literally represent the subject—etched in the poet's body, they constitute his mind. They are also the subject of *The Prelude* and, therefore, exist ahistorically in the sense described by Davy. That is, they transcend diachronic time because they have been captured in poetry and thereby have the potential to create an embodied emotional response in readers of subsequent generations.

Though autobiographical in focus, *The Prelude* addresses the relationship between embodied experience and mental events as Wordsworth explores the

concrete, material circumstances that affected his development as a poet. In the description of the second spot of time, Wordsworth portrays experiences that associate unconsciously and continue to haunt him later in life. For example, throughout his adult life Wordsworth suffers from depression and guilt "when storm and rain / Beat on my roof at midnight" because he associates them with his father's death (*Prel*. I.371-72). Eager to return home from Hawkshead on "a day / Stormy, and rough, and wild," Wordsworth climbs a ridge to await the transportation that would carry him home (*Prel.* I.341-42). Ten days after his return, his father died and "The event, / With all the sorrow which it brought, appeared / A chastisement" for "That day so lately passed, when from the crag / I looked in such anxiety of hope" for the horses to arrive (*Prel*. I.353-56). "And afterwards the wind and sleety rain" (I.361) are memories—"spectacles and sounds" (I.169)—that he frequently revisits. Later in life, when the weather turns gloomy, he experiences the same depressive emotional state (I.374).

This shift in mood occurs on a largely unconscious level: "unknown to me," Wordsworth states, "The workings of my spirit thence are brought" (*Prel*. I.373-74). Memory, coloured by imagination, remains inscribed in the body whether the conscious mind is aware of it or not. Painful or pleasurable, they "Remain[. . .], in their substantial lineaments / Depicted on the brain" (*Prel*. I.430-31).[17] Lacking the critical apparatus he has as an adult, as a child Wordsworth often "held unconscious intercourse / With the eternal beauty" of the natural world (*Prel*. I.394-95). Nonetheless, the pleasure he drinks in is "pure" and "organic," originating in "the lines of curling mist, or from the level plain / Of waters coloured by the steady clouds" (*Prel*. I.396-98). These concrete sensory stimuli and use of the term "organic"

[17] Richardson notes that a "feature of the 1799 *Prelude* [is] the use of the term 'brain' where an earlier poet . . . would prefer 'mind'" (*British* 73). The use of this term, he claims, is another example of the materialist valences in Wordsworth's early work

reinforce the notion that memory, emotion, and imagination are embodied cognitive functions.

"A kindred stream": Wordsworth's Enactive Cognition

Beginning with the debate inaugurated by Arthur Beatty and Melvin Rader in the 1920s, the scholarship that deals with Wordsworth's philosophical orientation has been severely polarised. The presence of both empiricist and transcendentalist language in his poetry enables critics to cast him as either, though, as Grob notes, it often requires them to minimise or ignore conflicting elements (4). To make sense of Wordsworth's philosophical position, critics must deal with seemingly contradictory statements in the poetry produced between 1798 and 1805. What, for example, are scholars to make of the poems that, in Hartleyean language, posit a passive mind subject to "powers, / Which of themselves our mind impress" ("Ex." 21-22) when they examine them in conjunction with other poems—"The Pedlar," "Tintern Abbey," or *The Prelude*, for example—that refer to the mind's active powers? Grob tries to resolve the impasse in Wordsworth studies by "approaching Wordsworth's career . . . as a sequence of stages, each possessing a separate and identifiable philosophical character" that falls "within reasonably well-defined chronological boundaries" (6). He argues that Wordsworth moved from a serious commitment to empiricism in 1798 to 1800 to an equally serious commitment to transcendentalism in 1804 after a brief transitional period. Charting Wordsworth's philosophical growth chronologically, however, produces its own set of problems. Most notably, Grob has trouble with references to the active mind in poetry and notebook entries written prior to 1804. Thus, he cautions the reader not to mistake the Pedlar's "*active* power to fasten images / Upon his brain" for incipient transcendentalism (*Pedlar* 40-41).

Thomas faces a similar problem. He argues that Wordsworth's philosophical development does not follow a straightforward trajectory from empiricism to

transcendentalism, but vacillates between empiricism and transcendentalism throughout his career. Sometimes he locates agency in the natural world and sometimes in the human mind. Thomas understands Wordsworth's philosophical growth in terms of a Kantian dialectic that continually moves back and forth between the two positions. To account for the "implicit reversal of the Lockean model" during Wordsworth's so-called empirical phase, Thomas claims that the poet unwittingly invokes Kantian categories of understanding, thus anticipating the transcendentalist philosophies that would eventually dominate his thinking (70). While he makes a compelling case for the persistence of empirical views in Wordsworth's poetry even into *The Excursion*, his reliance on Kant to account for descriptions of an active mind in the early poetry is problematic. Neither Wordsworth nor Coleridge had, during the initial phases of their productive partnership, encountered Kant (though Coleridge may have heard about him from Beddoes). Furthermore, Wordsworth later claimed that to have "never read a word of German metaphysics, thank Heaven! though I doubt not they are good diet for some tastes I feel no disposition to meddle" (qtd. in Morley I: 401). It is implausible, then, to claim that Wordsworth anticipates a strain of transcendentalism that he never actually adopted.

In addition to assuming "that Wordsworth's philosophical development up to 1804 is essentially Coleridge's—or at least so closely in step with it that two made the move from empiricism to transcendentalism at the same time and together"(Thomas 16), this interpretation of Wordsworth's poetry does not take into account empiricism as it was articulated in the Romantic era. Thomas bases his (and Wordsworth's) understanding of the empirical mind solely on Locke's theory. Overlooking other materialist accounts of mind, he speculates that Wordsworth, wedded to the passive account of mind proposed by this particular empiricist philosophy, tries to force his own experience of an active, creative mind into the

empirical paradigm in anticipation of the transcendentalist philosophies that would eventually dominate his thinking. Thomas is limited in his ability to resolve the contradictions in Wordsworth's early work because he lacks knowledge of the various empirical theories of mind that were in circulation during the Romantic period. Yet, Thomas and Grob are not alone. These contradictions in Wordsworth's poetry have continued to confound critics.

Miall aptly identifies this incongruity as "the passive/active paradox," wherein "the relationship of mind and nature, which is mediated by the feelings, is thus seen at one time strictly as the genesis of mind by nature, at another as the creation of the mind" ("Problematics" 243). Yet, if Wordsworth "seems to want to say both things at once: that the formative feelings are active . . . *and* that they are bestowed . . . on an infant who is initially passive," it is, in fact, because he does ("Problematics" 237). In the limited language of association, Wordsworth tries to describe a reciprocal relationship between the human mind and the natural world in which both subject and object are mutually constituted. He does not vacillate between empiricism and transcendentalism, but reconciles the two positions by privileging neither mind nor nature. Instead, he makes them equal partners in their co-dependent relationship. Applying an enactive framework to the seemingly contradictory elements in Wordsworth's poetry resolves this long-standing critical problem. It allows us to see that the mind does create the world it perceives, though not without some certain environmentally and structurally imposed restrictions. That is, it "half-create[s]" reality, but does not fully create it ("TA" 107).

In fragment "vi" of the "Christabel" notebook, composed sometime between 1798 and 1799, Wordsworth somewhat clumsily works through this mutual relationship between subject and object:

> There is creation in the eye,

> Nor less in all the other senses; powers
> They are that colour, model, and combine
> The things perceived . . . (1-4, *PW* V: 343)

In essence he claims that the organs of sense have an active power to modify sensory impressions before ideas are impressed onto the mind. He resembles Darwin and Davy in this, both of whom also argued that the perceptive apparatus mediates sense data before it populates the mind. The mind, in this view, is not simply a catalogue of sense impressions, but a compendium of impressions that have been coloured, modelled, and combined by the mind's activity.

Wordsworth calls these powers of the mind the "most godlike faculties of ours" that "At one and the same moment are the mind / And the mind's minister" ("vi" 6-8). The mind's ability to modify sense impressions gives humans a creative power akin to the divine force that ostensibly set the universe in motion. He makes it clear that the mind is both a function of physiology—the senses that modify sense impressions—as well as a conceptual entity that synthesises and comprehends these various impressions and ideas. The sense organs serve as "the mind's minister," while their modified sense impressions "are the mind" ("vi" 8, 7). The term "minister" connotes a particular role for the senses that denotes the materialist nature of mind. As ministers they guide, direct, and manage the mind, particularly its contents since perception depends upon the senses to gather information from the environment. The body, then, acts as a superintendent and executor of mental functions. While the word "minister" also implies a certain level of subordination, Wordsworth makes it clear that the creative senses are not subordinate to an immaterial soul, but constitute the mind. According to dualists, the senses do serve the mind in that they provide access to the material world. Yet, though they supply the data, they are distinct from the immaterial sentient principal. In this poetic fragment, the senses

are equated with the mental faculties. Not only do they provide the mind with sensory data, but they create reality through the interpretive act of perception. Wordsworth equates the creative power of the senses with the mind itself.

Wordsworth's acknowledgment of the body's capacity to both record and synthesise sense data without the intervention of an immaterial "superintending mind" accords with the view advanced by Priestley (*Disquisitions* 91). Dualists argue that while the brain might be the intermediary organ, it is incapable of performing higher level mental functions. An immaterial agent is required to comprehend, compare, and synthesise the data. A brain can collect sense impressions, but only a mind can reason about them. In his refutation of dualism, Priestley asserts that "the brain itself be the percipient power, as well as the subject of these vibrations, it must both feel the effect of every particular impression that is made upon it, and also all that can result from the combination of ever so many impressions" (*Disquisitions* 90). In other words, he maintains that the body's cognitive system is capable of both apprehending and processing sensation into complex ideas, hypotheses, judgments, and other abstractions.

In fragment "vi" Wordsworth qualifies the mind's "godlike" power, distinguishing it from transcendentalism, by putting it into a co-dependent relationship with the natural world. The mind does not simply impose its subjective interpretation onto the material world, but makes sense of "The things perceived" ("vi" 4). Furthermore, when the mind interacts with nature, "impressions" are "left behind" ("vi" 14). In this view, the mind interprets the world but is also inscribed by it. Its interpretations are creative, but constrained by the peripheral and central nervous systems and by the structure of the world itself. Wordsworth characterises this view more gracefully and succinctly in "Tintern Abbey," when he professes to be

> A lover . . .

. . . of all that mighty world

Of eye and ear, both what they half-create,

And what perceive; . . . (“TA” 105-108)

Here, again, the senses—both “eye and ear”—are the instruments of the mind that perceive and create the world. The term “half-create” informs the reader that this creative act is not solely a function of the human subject. The mind does not fully create the world, imposing categories upon it that are governed only by the structures of the mind. Rather, it co-creates as it perceives and interprets the natural world.

Even poems such as “Expostulation and Reply” and “The Tables Turned”—which have contradictorily been interpreted as “well-known denunciations of contemporary scientific procedure” (Averill 244) and as the clearest expressions of Wordsworth’s belief in the passive mind (Grob 91)—advance a reciprocal relationship between human beings and the natural world. Though Wordsworth claims that

‘The eye it cannot chuse but see,

‘We cannot bid the ear be still;

‘Our bodies feel, where’er they be,

‘Against, or with our will,[’] (“Ex.” 17-19),

he also insists that we “bring . . . a heart / That watches and receives” to our interactions with the world (“TT” 31-32). Humans are structurally organised to interact with their surrounding in a particular way. Our sensory organs necessarily take in sensory data. We are not, however, entirely passive creatures. The juxtaposition of the word “watch” with “receive” highlights a particular type of relationship between the mind and the world. The mind receives but not inactively. The verb “watch” implies an alertness and attentiveness that signal an active

relationship between the mind and world. Attempting to capture Wordsworth's enactive view of mind, Kent Beyette argues that Wordsworth posits "reciprocity between the mind of man and the universe. . . . [T]he psychic life of man is formed by and forms the world it celebrates" (98).[18] This view of subject-object relations dissolves the polarisation of the two by placing them in a dependent relationship.

Wordsworth outlines this relationship explicitly in the *Prospectus* to *The Excursion*. He states:

> How exquisitely the individual Mind
> (And the progressive powers perhaps no less
> Of the whole species) to the external World
> Is fitted:—and how exquisitely, too—
> Theme this but little heard of among men –
> The external World is fitted to the Mind. (63-68)

This passage expresses a relationship in which the human mind and the external world are perfectly suited to each other. Structurally, the language is replicated in the statements about both the mind and the world. That is, both begin with the adverbial phrase "how exquisitely," which modifies the same verb, "is fitted." The subject and the object switch places in the two statements, so that in the first four lines, the "individual Mind" stands as the subject and the "external World" as the object. In the last three lines "the Mind" becomes the object and the "external World" the subject. The capitalisation of both key terms also indicates an equivalency in a relationship in which both and neither are subject and object. The

[18] Interestingly, along with Beyette, other critics use language that anticipates the enactive view of cognition. For example, Miall notes that Wordsworth does not simply advance a theory of mind that alternates between passivity and activity, but "seems to want to say both things at once" ("Problematics" 237). Grob, too, asserts that "the infant mind enacts its role as 'agent of the one great mind'," but he struggles to force this statement of reciprocity between the subjective mind and the object world into a passive paradigm (Grob 125). It is significant and telling that scholars used the language of enaction long before an enactive theory of mind was fully articulated.

relationship that Wordsworth sets up in these lines is one of mutual co-dependence, as in enaction.

Wordsworth's most sustained treatment of the enactive mind, however, is in "the infant babe" passage in *The Prelude* (II.266). In this passage, Wordsworth expands upon the reciprocal relationship between subject and object by considering cognition in the earliest stages of human life. This stanza breaks from the autobiographical account of his childhood to "trace" his "best conjectures" regarding "The progress of our being" (*Prel*. II.268-69). Here, Wordsworth is no longer in the realm of recollection, but presents an abstract consideration of the origins of perception in human beings. It is "a relatively rare instance in *The Prelude* where theory does not grow out of personal experience, since the occasion described predates rememberable time" (Grob 114). Until this passage, the poem has depicted childhood memories, but a materialist theory of mind must account for the very first impressions made on the mind. As Davy notes, "it is in the history of infancy and childhood that we must seek for the data on which our analysis of passion must be founded" (RD HD/13/d 21). Having already explored childhood, Wordsworth must now survey infancy. This abstract analysis of the origins of perception is necessary because Wordsworth, like most of us, cannot remember his own infancy. Thus, he must theorise about it in order to validate the subsequent claim about his own genesis: that "I held mute dialogues with my mother's heart" (*Prel*. II.314). The infant babe passage allows him to

> . . . display the means
> Whereby this infant sensibility,
> Great birthright of our being, was in me
> Augmented and sustained. (*Prel*. II.314-317)

It permits him to explore cognition credibly from a materialist perspective without

speciously claiming to remember the earliest moments of his life.

The movement from memory to abstract deliberation necessitates the rupture in narrative form that occurs in the infant babe passage and in the stanza that introduces it. Wordsworth must mitigate this fissure and rationalise the assertions he makes in the following stanza regarding his own "early days" as a "babe" (*Prel*. II.310, 312). The apostrophe to Coleridge, the poem's auditor, that immediately precedes the passage provides this justification and sets up the thought experiment that follows. Breaking from the narrative to address Coleridge, Wordsworth asks:

> . . . But who shall parcel out
> His intellect by geometric rules,
> Split like a province into round and square?
> Who knows the individual hour in which
> His habits were first sown even as a seed?
> Who that shall point as with a wand, and say
> "This portion of the river of my mind
> Came from yon fountain"? (*Prel*. II.242-249)

Some critics interpret these lines as an indictment of associationism and empirical methodologies. They "often see these lines not only as anti-Lockian and anti-Hartlian," but also as "an imaginative recoiling from the mechanistic thought of the eighteenth century" (Grob 115). In fact, they echo a similar statement made by Wedgwood, an inveterate associationist and materialist.

Wedgwood also recognises "the difficulty . . . in investigating the origin of different feelings" (WM E40-28478 29v). He outlines the complications involved in such a project:

> One is obliged to decompound ones [sic] present feelings

> into their component sensations and take for granted that
> the components are much the same as they were in our
> earliest infancy—But it is impossible to make just allowance
> for the growth to perfection of each ingredient of sensation
> in the long interval between infancy & manhood—still
> more impossible to recollect their first development and
> earliest natures. (WM E40-28478 29v)

Wedgwood discusses the difficulty of conducting an empirical analysis of association that extends back to the first moments of contact with the external world, especially when the subject is one's self. Yet, he does not suggest abandoning materialist theories of mind, but simply acknowledges the challenges inherent in researching and substantiating such theories. Viewed in this context, Wordsworth's aporia signals not a rejection of association, but the difficulty he faces trying to trace the origin of his mind back to its first days. The stanza acknowledges that "no certainty could be achieved" when theorising about mental development (Gill 13) as it establishes the need to theoretically speculate about cognition in infancy. When Wordsworth declares that it is a "Hard task to analyse a soul, in which / Not only general habits and desires, / . . . / Hath no beginning," he sets up the hypothetical consideration of the mind that follows (*Prel*. II.261-62, 267). These lines, which recognise the difficulty of tracing the origins of his love of nature, his poetic sensibility, and his creative imagination, justify the narrative breach.

The infant babe passage, then, is a *Gedankenexperiment* that delineates Wordsworth's theory of mind and proposes an enactive relationship between the human mind and its environment. Considering the baby's relationship to both humans and the natural world, this passage continues to advance a model of mind based on reciprocity with nature, to which the mind belongs. Drawing on other

second wave cognitive theories, Wordsworth asserts that the human mind has an innate capacity for active perception. Conflating perception with imagination, he proposes a theory of cognition based on emotion in which the mind creates knowledge of its surroundings both constructed and constrained. The relationship between emotion and cognition that is elaborated in the first part of the poem takes on particular significance in Wordsworth's theory of imagination.

Like Wordsworth, Wedgwood thought that "Infant perceptions, meer outlines," were "perfected . . . by Imagination added to all future impressions" (WM E40-28462 12). Yet, where Wedgwood worries about the ill effects of chaotic sensation, particularly in infancy, Wordsworth sees imagination as the faculty that forms "a coherent vision of the world from a jumble of sense impressions" (*Imagination* 267). Where Wedgwood thinks that association should be strictly controlled in infancy and childhood, Wordsworth trusts that if left to nature the mind, endowed with the faculty of imagination, will make sense of the world. It is in this sense that the imagination is creative, for it "intensifies and endows every situation with feeling and drama" (*Imagination* 272). It can create works of art, but it also creates reality. These mnemonic processes wherein sensation stimulates emotion that permanently imprints upon body may seem passive, but the imagination actively gives meaning to objects, endowing them with personal, poetic, and spiritual significance. The mind, however, does not arbitrarily attribute meaning to the stimuli it encounters, but co-creates it in conjunction with the natural world.

Enactive in its theoretical assumptions, Wordsworth's view of mind dissolves the subject-object polarity by positioning both the infant and nature as active participants in a mutually constitutive relationship. The human mind is creative in that it perceives and creates knowledge, yet it is limited by its own biological organisation and by the structural constraints of the environment. Knowledge arises

from the interaction of the subject and the object and takes on a particular emotional tone, for this creativity is a function of imagination that is intimately linked to feeling. Emotion, for Wordsworth, connects human beings to the natural world, thus providing the link between materiality and the mind. The infant babe passage outlines these primary features of Wordsworth's theory.

Though abstract, Wordsworth's consideration of cognition begins with a natural starting point—the infant's relationship with its mother. The relationship Wordsworth describes, particularly the mother's role in imparting feeling to the newborn, resembles Darwin's mimetic theory of emotional growth. Darwin claims that the initial experiences of emotion derive from the maternal bond. First, the act of nursing stimulates pleasure; second, by imitating the mother's facial expressions, the child experiences the emotions associated with those embodied gestures. In Wordsworth's account, the transfer of feeling from mother to infant functions "like an awakening breeze" (*Prel*. II.275). The use of a simile indicates that feeling is not itself the "awakening breeze," but only serves as a stimulus that fosters the infant's innate mental capacities. Wordsworth positions the infant as an active participant in this relationship. As "feelings pass into his torpid life," the word "torpid" implies that the child's mind is inactive, requiring external forces to awaken it (*Prel.* II.274). Yet, the infant also "Doth gather passion from his mother's eye," which indicates that the baby is an active subject (*Prel*. II.273). Wordsworth follows the sentence's subject with an active verb, "gathers." The infant is not an object on whom "passion" is inscribed. Like "his mind," he "Is prompt and watchful," an active being who initiates contact with his environment (*Prel*. II.275, 277). From the opening of this stanza, Wordsworth portrays a mind that simultaneously acts as it receives. Reception in these terms is not a quality of passivity, but an innate affordance of the mind as it explores its environment, which in the first moments of life is the mother. This active

mind is not transcendental, but empirically material.

Wordsworth describes the infant mind in terms that recall Davy's description of cognition in children. Davy claims that a child's mind "perceives as readily & distinguishes its first ideas with the same alacrity" as a philosopher's, even though its mind is furnished with fewer ideas than the philosopher's (RI HD/13/f 6). This characterisation highlights the universal process of embodied cognition, privileging process over content. An infant's mind works in the same way as an adult's because both share the same organic cognitive faculties. In fact, Davy argues that "the doctrine of mind being a tabula rasa is false" because the mind is endowed with some innate capacities (RI HD/13/d 21). Reversing the process of abstraction described by Darwin and Davy (by which abstract concepts are extrapolated from concrete objects), Wordsworth conceives of mind as having an innate active ability to synthesise disparate parts of objects into a syncretic whole. It is from the start

> . . . eager to combine
> In one appearance all the elements
> And parts of the same object, else detached
> And loathe to coalesce. (*Prel*. II.277-280)

Though the mind develops and grows, accruing ideas and forming associations according to the doctrine of association, it is organised to make sense of its surroundings.

The mind's first activities, in Wordsworth's view, are imaginative rather than reason-based. The infant does not dismantle, compare, and analyse its first sensory impressions, but slowly creates knowledge of its environment by combining sense data. The mind's "habitude," that is, its disposition, is naturally "apprehensive;" it is intrinsically quick and discerning (*Prel*. II.186). Notably, the word "habitude," which denotes essential characteristics or a person's way of being, refers to not just mental

dispositions, but also to dispositions of the body. Wordsworth's term describes a mind that is both embodied and endowed with an active imagination that enables it to grasp and make sense of its environment.

While the infant has an active mind, he also possesses "recipient faculties" (*Prel*. II.281). The mind's ability to make meaning and to receive external data is not the function of a mind that has both active and passive faculties, as many scholars suppose. Instead, it represents an enactive mind; it is active but constrained by structural determinism. Wordsworth emphasises the reciprocal relationship between the mind and its environment with the verbs he chooses to describe the mind's activity. As it grows, the infant's "mind spreads, / Tenacious of the forms which it receives" (*Prel*. II.283-84). The verbs "spreads" and "receives"—two words that have directional connotations—are juxtaposed in an equivalent relationship that privileges neither the outward nor inward movement. The mind "spreads" itself outward, pushing toward the environment in active apprehension, but it also "receives," taking in data from the environment. As it actively explores its environment, it also absorbs sensory data into itself, actively constructing knowledge from them. This relationship destabilises the usual subject (inner)/object (outer) distinctions. In this view both mind and universe are active, neither subordinate to the other.

Wordsworth expands on this relationship in the subsequent lines by describing the universe as "active" (*Prel*. II.296). This adjective signals that the natural world is an equal participant in the relationship between the mind and the world. The infant "From Nature largely . . . receives, but largely gives again," that is, he affects his environment as much as his environment alters him (*Prel*. II.297-298). Wordsworth exemplifies this relationship in a later passage when he claims that "the midnight storm / Grew darker in the presence of my eye" (*Prel*. II.422-23). The

natural world transforms in response to his watchful presence, just as the poet changes as he comes into contact with external objects. At first, it might seem that Wordsworth is speaking figuratively, that the sky only seemed to grow darker or that the perception of increasing darkness is subjective. Yet, the "auxiliar light" (*Prel*. II.417) that comes from his mind is in active relationship with its surroundings—"at war" (II.414) with it. Wordsworth characterises this relationship as a struggle between the "general tendency" to be "Subservient strictly to external things" (*Prel*. II.415-16) and the desire to make nature "obey[. . .]" the "dominion" of his mind (II.421-22). The metaphor of war, which can only be staged between two competing entities, suggests that both the external world and the mind have agency.

In the relationship Wordsworth describes neither party is subject or object and neither possesses sole agency. The relationship mediates transcendentalism and materialism by positing an equivalent reciprocity between two entities. The human mind is affected by nature, as in the empirical view, and the natural world takes on a particular hue, as in the transcendental view. Wordsworth's struggle is not to make nature submit to his will, but to determine where the boundary of self begins and nature stops. As he analyses the contents of his mind, he cannot tell what came from external sources and what arose from his own mental activity:

> 'Twere long to tell
> What spring and autumn, what the winter snows,
> And what the summer shade, what day and night,
> And what my waking thoughts, supplied to nurse
> That spirit of religious love in which
> I walked with Nature. (*Prel*. II.401-07)

His attempt to find the source of his love of nature and his devotion to poetry is confounded by the co-dependent relationship between nature and mind. He cannot

separate the contents of his mind into two neat categories: raw sense data from the external world and data that have been modified by the mind.

This account blurs the line between human beings and nature, but even as the mind is part of the natural world, it retains a discrete identity. The infant's "mind / Even as an agent of the one great mind, / Creates" (*Prel*. II.301-03). The child, as an agent of "the one great mind," possesses his own agency and his own generative power (*Prel*. II.301) and as an "inmate of this active universe," he also participates in the natural order (II.296). Both child and universe are active participants in their relationship. According to Varela, "by definition, something is independent, intrinsic, or absolute only if it does not depend on anything else" (Varela et al. 224). The child and the world are separate but dependent entities that mutually define and constitute each other.

The relationship that Wordsworth posits between the mind and the natural world undermines the very tenets of transcendentalism. In transcendentalism the subject bestows meaning on the objects it perceives, though these objects are thought to exist irrespective of the subject. According to Wordsworth, the child is "creator and receiver both, / Working but in alliance with the works / Which it beholds" (*Prel*. II.303-05). This relationship is co-dependent in that the infant cooperates with the natural world—"working but in alliance" with it—to produce meaning and knowledge from the sensory data he receives. Signification arises from the interaction between the child's mind and the natural world. The child creates this meaning not arbitrarily by imposing its subjective interpretation on the world, but in conjunction with the external world. The imagination sheds "An auxiliar light" (*Prel*. II.417) on its surroundings, enduing it with "new splendour" (II.419). "The setting sun / . . . the melodious birds," and "The gentle breezes," however, are not themselves mere figments of the mind (*Prel*. II.418-20). Meaning, in this view, does

not exist objectively in the external world, waiting for the child to perceive it. Nor is it purely a product of the subjective mind. It is produced by their relationship; it subsists in the fruitful interaction between the two. The mind's ability to create meaning from its surroundings, then, "is the first / Poetic spirit of our human life" (*Prel*. II. 305-06). In Wordsworth's theory of mind, the creative imagination does not create works of art alone, but enacts a domain of significance, as described in enactive theories of cognition.

This relationship is driven by the very emotion that the infant first gathers from its mother's eye, that "feeling [which] has to him imparted strength" (*Prel*. II.299). Emotion makes the infant "powerful," and with this power he creates meaning from the natural world (*Prel*. II.300). "Strong feelings" propel the creative imagination in Wordsworth's theory of mind, as in Davy's (RI HD/21/b 20). The imagination, as we have seen, imbues the world with emotional (and, hence, spiritual) significance. Thus, Wordsworth conflates imagination with perception, for the perceptive act is inherently a creative and, therefore, imaginative act. In this view, there can be no perception without emotion. Not only does this view accord with twenty-first-century research, it also explains, within the discourse of Romantic cognitive science, how the human subject fits into the natural world. The "filial bond / Of Nature that connect[s] him with the world" is the innate capacity to feel, to perceive, and to understand (*Prel*. II.293-94). "At the most elementary level" the infant's "feelings are a part of nature" ("Problematics" 244). While Hartley, Priestley, Darwin, and d'Holbach argue that the human mind is part of the natural world, "submitted to her laws" (d'Holbach I: 17), Wordsworth explains *how* the mind is integrated into nature. According to the poet, embodied emotions connect human beings to the natural world as well as link the body with the mind. Emotions are the mysterious mechanism that drives mental processes, linking the material with the

seemingly immaterial.

Embodied Imagination

In just a few years, Wordsworth's commitment to materialism seems to wane. The "Immortality Ode," begun in 1802 and completed in 1804, as well as his revisions to *The Prelude* completed in 1805, assume a heavily transcendental tone that is absent in his earlier work. The influx of transcendentalist language during this period has led some critics to conclude that, philosophically, Wordsworth had transitioned from empiricism to transcendentalism by 1804. Though the 1805 *Prelude* retains definite traces of materialism, they claim that the poet "tends to obscure the unmistakably empirical drift" of the original 1799 *Prelude* because he had "adopted a basically organic position as he came to revise" (Grob 55).[19] Other critics interpret the lingering empiricism as evidence that Wordsworth was philosophically confused while he was revising the *Prelude*. They see the poem as having "no single guiding principle" ("Two-Part" 216); it is an olio of contradiction.

Yet, even as Wordsworth's conception of imagination evolved over the years from the relatively simplistic definition given in the head note to "The Thorn" to the more elaborate theory presented in the *Preface of 1815*, the basic materialist premise—that the mind is embodied—remains intact. This subtle materialism persists even when Wordsworth frames his discussion in ostensibly anti-materialist terms, as, for example, when he refers to the imagination as "a word of higher import" (*PrW* III: 31). Wordsworth continued to be interested in the phenomena of mind and its relationship to embodiment throughout his life, despite philosophical shifts from empiricism to the transcendentalism inherent in Christianity. His library contained a number of nineteenth-century books on the mind, such as T.S. Knight's *Observations on Derangement of the Mind* (1827), J. J. Hodgson's *Considerations on*

[19] It is worth noting that Grob's use of the term "organic" overlooks its materialist connotations.

Phrenology (1839), George Moore's *The Use of the Body in Relation to the Mind* (1846), as well as works on mesmerism (Pittman 39). His memoirs, prepared by Christopher Wordsworth and published in 1851, even include a final definition of the imagination. Yet, even at their most transcendental, Wordsworth's descriptions of the human mind rely on the materialist theories that he discovered in the 1790s. The 1805 *Prelude* along with the "Immortality Ode" continue to assert an enactive relationship between the mind and nature that is based on mutual co-dependence. Furthermore, Wordsworth's theory of imagination in *The Prelude* and the 1815 *Preface* continues to reveal his indebtedness to empirical materialism. Even well into the nineteenth century after he had fully embraced Anglican Christianity, Wordsworth understood cognition in terms of an embodiment, which is a key tenet of materialist theories of mind. Even as his concept of the imagination grows in grandeur into a seemingly spiritual faculty, the mind continues to be mediated by the senses.

The 1805 *Prelude* is not a repudiation of empiricism, but Wordsworth's attempt to reconcile his materialist conceptions of mind with transcendentalism. The poem mediates empiricist and transcendentalist theories of cognition by continuing to assert an enactive theory of mind, even as it asserts the increasing power of the imagination. In Grob's reading of the poem, the "later books tend to minimize the dependence of mind on nature" and "speak to us primarily of a consciousness of spiritual autonomy undisturbed by the press of external events" (264). Yet, the new sections of the poem replicate the structural pattern established in 1799 and retained in the first two books. Wordsworth's transcendental experiences continue to be preceded by embodied encounters with the external world. In his analysis of Book VII, which records Wordsworth's residence in London, Thomas notes that, ultimately, "the success of [Wordsworth's] transcendental insights" depends "on

something external to the living mind" (128). The two climactic scenes in Books VI and XIII that contain the poet's most extended meditations on imagination also rely on encounters with nature.

As in "Tintern Abbey," Wordsworth first describes the actual sensory experience—crossing the Alps and later ascending Mount Snowdon—then he describes the transcendent mental experiences precipitated by these encounters. While Thomas argues that this causal relationship between sensation and transcendence exposes a commitment to empiricism that undermines Wordsworth's newly discovered transcendentalism, in fact, it reiterates the enactive theory of mind delineated in the earlier poetry. Transcendentalism does not trump empiricism in the 1805 *Prelude*. Though the imagination has increasing power, it does not assume "the dominant role as shaping agent in the act of perception" (Grob 263). Instead, the revised poem reaffirms "Wordsworth's revelation that the mind is formed by the same processes" that occur in nature (Miall, "Alps" 96). Not only does the mind continue to have an active role in perception, but also acts in concert with nature. Despite an increased emphasis on the mind's affordances, it remains constrained in its construction of knowledge.

The passages that seem to assert the mind's supremacy over the natural world bear closer scrutiny, particularly the crossing of Simplon Pass in Book VI and the definition of spots of time in Book XI. In the first scene, Wordsworth employs tentative language, particularly in comparison to the language he uses to describe the reciprocal relationship between mind and nature in later passages, such as the ascent of Mount Snowdon in Book XI. The context in which these statements appear is also important. In the apostrophe to imagination, Wordsworth seems to assert that the imagination springs, like Athena from the head of Zeus, authochthonously from the mind: "Like an unfathered vapour, here that power, / In all the might of its

endowment came / Athwart me" (1805 *Prel*. VI.527-29). He also seems to state that nature is not the appropriate home for the human soul, claiming instead that "Our destiny, our nature, and our home, / Is with infinitude" (1805 *Prel*. VI.538-39). If these are the correct interpretations of these lines, then Wordsworth has, indeed, made a radical reversal in philosophical position. We must consider, however that this address to imagination occurs immediately after Wordsworth and Jones discover they have crossed the Alps without knowing they were doing so. Furthermore, the description of this encounter, which occurred in 1790, had been revised in 1804 and 1805, nearly fifteen years later, as Wordsworth began to make sense of this disappointing experience.

Miall argues that in this scene Wordsworth rejects a relationship with nature based on the picturesque tradition that informs his early poetry, which "lay[s] out nature as a prospect for consumption" ("Alps" 96). That is, rather than positing a reciprocal relationship between human beings and the natural world, the picturesque asserts the dominance of the "despotic" eye over everything it sees (1805 *Prel*. XI.173). In anticipation of crossing the Alps, Wordsworth "was aiming for the visual pleasures of the picturesque and the sublime," but "what he experienced in the Simplon Pass took its place alongside other instances of disappointed expectation" ("Alps" 88). In place of the feeling of elation that he had hoped for, Wordsworth finds himself in a state of dejection. Miall identifies this passage as one of "four episodes of disappointment" ("Alps" 89) that the poet experienced in Switzerland in 1790, all of which "follow a consistent pattern" in which prior expectation is disappointed by actual experience (88). He argues that as Wordsworth worked and reworked his exploration of mind and its growth in the intervening years, he came to understand that the proper relationship between human beings and nature is not one of dominion over nature, but of "consciousness that simultaneously inhabits and

is inhabited by Nature" (88). In other words, Miall claims that the narrative disruption in this passage allows Wordsworth to articulate his later understanding that the mind that is shaped by the same forces of nature that create the natural world. Miall's interpretation relies on the subsequent ecstatic description of his experience in the Gondo Ravine. The juxtaposition of a passage that describes the mind's alienation from nature with one that depicts the mind melding with the natural world illustrates the insight that he has gained between 1790 and 1805. The distance Wordsworth experiences from the natural world enables his return and his new understanding of the relationship between the mind and nature.

While Miall's reading usefully illuminates seemingly contradictory moments in the poem, *The Prelude* of 1799 and the earlier poetry establish that Wordsworth already understood the mind in terms that Miall describes. The narrative break between the Simplon Pass episode and the description of the descent into the Gondo Ravine does represent a rupture followed by a return, but the function of the imagination in these scenes has a precedent in "Tintern Abbey." My reading draws on the concept of the embodied mind that Wordsworth sets up in the previous books and in earlier poems. Contrary to the critical interpretation offered by the likes of Alan Grob or Geoffrey Hartman that regard the breach of mind and nature as a permanent break, I argue that the apostrophe to imagination is a commentary on the power of the imagination not over nature, but over the mind itself. I agree with Miall that the significance of this scene hinges upon the disappointment of unfilled expectation, but in my view Wordsworth's understanding of the reciprocal relationship between nature and the human mind was in place before the 1804 and 1805 revisions were implemented.

Wordsworth describes his response to "those tidings by the peasant given" (1805 *Prel*. VI.550) as a "dull and heavy slackening (VI.549), which he experiences as

a depressing mental fog. Literally and emotionally the poet is "lost as in a cloud" (VI.529). In this moment, Wordsworth invokes the power of the imagination to assuage his frustration: "And now, recovering, to my soul I say / 'I recognise thy glory'. . ." (VI.531-34). In the anti-climatic moment of missing a sublime encounter, the poet turns to his own mind to console himself in this moment of despair. Furnished with previous encounters with nature, the mind can provide "hope that can never die" (VI.540). As in "Tintern Abbey," when the poet finds himself disconnected from nature he turns to the mind for solace by recreating, on an embodied emotional level, the transcendent feeling of prior experiences. Given the failure of nature, in this instance, to provide the anticipated sustenance, the mind draws upon and sustains itself. As Miall notes, the "prowess" of the mind that is "blest in thoughts" (1850 *Prel.* VI.611, 1805 *Prel*. VI.545) "limits the imaginative power to what can be represented, that is, reproduced in sensory terms" ("Alps" 95). The mind, furnished with sensory data from other sublime moments, has the ability to comfort itself in times of separation from nature. It reveals "The invisible world" that carries him through this moment, but it does not permanently supplant or displace the natural world or assert the mind's supremacy over it, as the following passage that describes the descent through the Gondo Ravine makes plain.

Wordsworth's language in the apostrophe also reveals that he has not wholly adopted a transcendentalist view of mind. He uses a simile rather than a more direct and powerful metaphor to describe the action of the imagination. "*Like* an unfathered vapour," it only seems to spring from the poet's mind independently of external stimuli (1805 P*rel.* VI.527, emphasis added). As it turns out, this image of the imagination takes its inspiration from an elided phenomenal precedent. Miall notes that in MS WW, Wordsworth had included a "lengthy cave analogy" in this scene, which he later moved to Book VIII; this description of the cave "shows that the noto-

rious ‘unfathered vapour’ . . . evolves from a literal vapour or mountain mist” (“Alps” 91). Though Wordsworth eliminates the mist from his description the simile points to the material source of this image. His language refuses to equate the imagination with a phenomenon that does not take its origin from the natural world. While many critics have taken this address as proof that Wordsworth had abandoned any suggestion of a materialist concept of mind, the context and language belie this interpretation.

Another passage that bears scrutiny, because it seems to assert unmitigated transcendentalism, is the reconfigured definition of the spots of time in Book XI. There, Wordsworth describes a spot of time as an “efficacious spirit” that

> chiefly lurks
> Among those passages of life in which
> We have had the deepest feeling that the mind
> Is lord and master, and that the outward sense
> Is but the obedient servant of her will. (1805 *Prel*. XI.268-72)

These lines give the impression that the mind commands the senses, but, in fact, this impression is a “feeling” rather than an assertion. In the 1805 *Prelude*, as in the 1799 version, the mind functions both consciously and unconsciously and spots of time are those moments that have an emotional impact great enough to etch them into conscious memory. Miall defines spots of time as moments “in which his [Wordsworth’s] experience with nature was unmediated by prior expectation” (“Alps” 89). While this definition is accurate, it overlooks the multitude of unmediated experiences that have been described, but not classified as “official” spots of time, in prior books, beginning, of course, with Derwent’s song. The spots of time are most accurately defined as powerful, emotional moments that occur on the conscious level. That is, their impact is so immediately felt that the poet consciously

notes and remembers them. Yet, they also continue to affect him in unexpected ways throughout his life.

The after effects of the spots of time sometimes occur unconsciously, as with the incidents surrounding the death of Wordsworth's father, discussed above. *The Prelude* highlights the importance of unconscious registering of experience, wherein the senses transmit data to the mind without its awareness. Clearly, the mind does not act as "lord and master" commanding "the outward sense" in these moments (XI.271). Since the spots of time are defined by conscious awareness, the mind seems to control the senses rather than be in their control. In fact, these spots of time occur less frequently than the quotidian experiences that form the poet's character. This indicates that, in general, the mind does not control sensory experience, though it most definitely has the power to make sense of it.

Even as the language sometimes seems transcendentalist, the descriptions of mind continue to assert empirical materialism. For example, earlier in Book VI, Wordsworth represents nature as "a book" that we can "not chuse but read" (1805 *Prel*. VI.473-74). The juxtaposition of these two characterisations eventually resolve into a reciprocal relationship between the mind and the natural world in which both are described as being governed by analogous processes. As in the two-part *Prelude* the line between nature and mind becomes blurred and Wordsworth cannot always distinguish between the two. Though the mind is "Not prostrate" (VI.666) to nature, neither does it stand apart or above it. Instead, all that the poet "saw or heard" in the external world unites with what he "felt" until it merges into a single, indistinguishable "stream / That flowed into a kindred stream, a gale" (VI. 673-74). Shaped and governed by the same material forces, the mind and the natural world are mutually co-dependent. The meaningful transcendent experiences that Wordsworth presents in the poem emerge from the interaction of the two. Contrary

to Grob's assertion that the mind is "so thoroughly involved in the transcendent [that] there is clearly little of value nature can offer man" (268), the intersection of the mind with nature offers nothing less than transcendence itself. Yet this experience is not imposed upon the poet by nature, nor is it solely the product of his imagination, but emerges from their union.

The Gondo Ravine passage heals the breach caused by the disruptive apostrophe by reasserting an enactive view of mind. Miall rightly argues that the Gondo Ravine passage "embodies in their most elemental form the powers that correlate Mind and Nature," which Wordsworth represents as "processes of resistance and conflict" ("Alps" 95-96). Juxtaposing contrary phenomena, such as "stationary blasts of waterfalls" (1805 *Prel*. VI.558) and "Tumult and peace, / The darkness and the light" (VI.567), highlights Wordsworth's dialectical epistemology that reconciles two contradictory theories of mind. In this passage, opposites coexist but they are yoked together by the same governing forces. Nature and mind function

> like workings of one mind, the features
> Of the same face, blossoms upon one tree,
> Characters of the great apocalypse. (VI.568-70)

This passage clearly asserts a materialist view of a mind that is subject to the laws of nature, but unlike the theories advanced by Hartley and Priestley the mind is not passively subjected to these laws. Rather it is endowed with the same fearsome power that drives the most awesome and sublime of natural phenomena. The mind is here united with the forces of nature, but not conflated with them. Again, a simile alerts us that both mind and nature retain their autonomy, though they are "Of the same face, blossoms upon one tree." The relationship that the Gondo Ravine passage establishes between the mind and the natural world is one of mutual dependence. Each gives meaning to and constitutes the other while remaining

discrete entities.

Wordsworth privileges the reciprocity between mind and nature by holding it up as the only right relationship between the two entities. He claims that "The self-created sustenance of a mind / Debarred from Nature's living images" is unhealthy (1805 *Prel*. VI.312-13). For such a mind is "Compelled to be a life unto itself" and is prey to the sort of soul-sickness he saw in Coleridge (1805 *Prel*. VI.314). Wordsworth's apostrophe to Coleridge in Book VI is a sharp critique that censures his friend's "subtle speculations, toils abstruse / . . . and Platonic forms" and warns of the dangers of excessive transcendentalism (1805 *Prel*. VI.308-09). This criticism reveals Wordsworth's rejection of the empiricism/transcendentalism binary and his desire to reconcile the two extremes.

Leading up to the Mount Snowdon scene, Wordsworth's posits an enactive theory of mind in clear, unequivocal language. With respect to the poetic imagination, "the forms / Of Nature have a passion in themselves / That intermingles with those works of man" (1805 *Prel*. XII.288-90). Nature has agency in these lines, but not dominance. This mutually constitutive relationship is "whence our dignity originates" (1805 *Prel*. XII.374). It is characterised by "balance;" it is an "ennobling interchange / Of action from within and from without" that recognises "The excellence, pure spirit, and best power, / Both of the object seen, and the eye that sees" (XII.376-79). In these lines Wordsworth privileges neither subject nor object, but posits them in relationship to each other.

Likewise, in the discussion of imagination that occurs after climbing Mount Snowdon, Wordsworth ascribes agency to nature. Yet, he also asserts the agency of the human mind. The juxtaposition of nature's agency and human agency along with the precise description of the relationship between the two, reveals Wordsworth's continued commitment to an enactive view of mind. As nature "Thrusts forth upon

the senses" (1805 *Prel*. XIII.86), ensuring "That even the grossest minds must see and hear, / And cannot chuse but feel" (XIII.83-84), it is met with "a genuine counterpart / And brother of that glorious faculty"—the human mind (XIII.88-89). Just as nature inscribes sense impressions onto the mind, human minds "can send abroad / Like transformation," and "for themselves create / A like existence" (1805 *Prel*. XIII.93-95). The mind, in turn, inscribes meaning onto the world and in this interaction, this mutual inscription, reality is created.

Even in the "Immortality Ode," which critics often herald as the poem that marks Wordsworth's final conversion to transcendentalism, he engages positively with the material realm. The ode captures the "very moment at which the nonsensible engages with the sensible, the transcendental with the empirical" (Thomas 94). The problem that Wordsworth presents in the poem lies not in nature, but is a failure of perception. Though the narrator once viewed "The earth, and every common sight" as "Apparelled in celestial light," his perception fails, for "The things which I have seen I now can see no more" ("Ode" I.2, 4, 9). Generally, the poem has been interpreted as evidence that Wordsworth believed that the soul has "a prior state of existence" that children can recall but that adults forget as they become embroiled in the cares of the material world (*PW* IV: 464). Yet, Wordsworth, himself, denies such a transcendentalist reading declaring that he used this "ingredient of Platonic philosophy" as license to make "the best use of it I could as a Poet" (*PW* IV: 464). If we look at the poem in terms of cognition, we see that thought "functions . . . as a kind of middle term, linking spirit and nature" (Grob 256). In the tenth stanza, the narrator reconnects with the natural world: "In thought" he "join[s]" nature's "throng" ("Ode" X.172). As a cognitive mode, thought "defies the categories of dualism" and grants humans the "freedom to traffic in both sense and spirit" (Grob 257). In other words, recognising that the mind connects him to nature,

the narrator's perception is restored by the end of the poem.

Though the restoration of perception is not accompanied by joy, after all "the meanest flower that blows can give / Thoughts that do often lie too deep for tears," the connection is re-established nonetheless because nature can once again "give / Thoughts" ("Ode" XI.203-04). As Ellis points out, "our emotional lives . . . largely determine what we see, [and] how we see it" (168). Thus, the reality that the narrator of the "Ode" co-creates with nature is in this instance sorrowful. The more important point, at least with respect to Wordsworth's philosophical position in 1804, is that the "Immortality Ode" presents cognition in enactive terms. The mind is not posited as a phenomenon separate from or superior to nature, but continues to depend upon the phenomenal world.

It is likely that Wordsworth's inclination toward transcendentalism developed alongside his growing interest in Christianity, which is absent in his earlier poems. Additionally, Wordsworth's declining commitment to materialism was likely motivated by political and economic reasons. The vitalism debates between John Abernethy and William Lawrence that exploded in the 1820s re-politicised the mind/matter controversy. Dualists were, again, associated with Britain, church, and social order while materialists were linked to France, atheism, and anarchy. By this time, Wordsworth had become a Distributor of Stamps in Cumberland in order to meet the financial demands of a growing family. When he accepted the position from the Earl of Lonsdale, the younger Romantics viewed him as "a Tory hireling" (Gill 296). Whether or not this is an accurate descriptor, Wordsworth preserved his reputation in part by distancing himself from his early materialism. Even so, his theory of imagination continued to retain crucial materialist traces.

Wordsworth's definition of imagination expanded from the brief header note to "The Thorn," in which it is described as a faculty that makes simple elements seem

impressive, to "a word of higher import, denoting operations of the mind upon those objects, and processes of creation or of composition" (*PrW* III: 31). Still, he continues to posit the imagination as a process of the embodied mind. In the 1815 *Preface*, Wordsworth divides the creative powers of the mind into six faculties.[20] The first faculty, Observation and Description, is "the ability to observe with accuracy things as they are in themselves" and describe them faithfully without the colourings of imagination or feeling (*PrW* III: 26). Wordsworth calls this power "indispensible," but cautions the poet to use it sparingly, "as its exercise supposes all the higher qualities of the mind to be passive, in a state of subjection to external objects" (*PrW* III: 26). This definition indicates that the mind does, in fact, receive impressions from the external world. Imagination, however, is the ability "to modify, to create, and to associate" sensory data (*PrW* III: 26). Thus, Wordsworth maintains his earlier position that cognition occurs in the interaction between the mind and its environment. As he sets up his discussion of imagination in the 1815 *Preface*, Wordsworth continues to rely on empiricist theories.

Wordsworth's description of imagination as "an endowing or modifying power" that "shapes and creates" echoes the definition outlined by Davy in his early notebooks (*PrW* III: 33). Like Davy, and Coleridge in the *Biographia*, he credits the imagination with the power to abstract as well as to synthesise. Wordsworth's account of what the imagination can do is fairly clear. Embracing "the plastic, the pliant, and the indefinite," the imagination aids the process of invention by lending emotional colours and tones to sensory data (*PrW* III: 36). On a more mundane level, it also "regulates the composition of characters, and determines the course of actions" (*PrW* III: 34). As in the first two versions of *The Prelude*, it plays a role in character formation, decision-making, and creates not just art, but reality itself. Yet,

[20] These faculties are: Observation and Description, Sensibility, Reflection, Imagination and Fancy, Invention, and Judgment (*PrW* III: 26).

Wordsworth's descriptions of how the imagination accomplishes these feats are considerably less clear. He vaguely claims that it abstracts, combines, and creates by "alternations proceeding from, and governed by, a sublime consciousness of the soul in her own mighty and divine powers" (*PrW* III: 33). He also asserts that it is "governed by certain fixed laws" (*PrW* III: 31). If we look to other work produced before and after the 1815 *Preface* we are able to determine what Wordsworth means by these statements.

Though the imagination has "higher import," it is still an embodied cognitive function (*PrW* III: 31). In "The Convention of Cintra," an article published in the *Courier* in October 1808 that discusses the French defeat in the Peninsular War, Wordsworth explains what he means by "higher modes of being" (*PrW* I: 340). Significantly, it "does not exclude, but necessarily includes, the sentient," while "the sentient" includes "the animal, and the animal, the vital—to its lowest degrees" (*PrW* I: 340). These assertions indicate that the soul includes the material, that is, the body and as such, is subject to the laws of nature. Though his discussion of the imagination invokes the language of transcendentalism, the line between the mind and nature remains blurred. Some years later, sometime between 1825 and his death in 1850, he describes the imagination as "that chemical faculty by which elements of the most different nature and distant origin are blended together into one harmonious and homogenous whole" (qtd. in C. Wordsworth, *Memoirs* II: 487). The use of the term "chemical" to describe the imagination has a certain valence, particularly in the second quarter of the nineteenth century when chemistry under Humphry Davy, who had by this time gained considerable fame and notoriety as the preeminent chemist at the Royal Institution, had become the pinnacle of empirical science. To call this "intellectual lens" a "chemical faculty" carries a particular empiricist connotation that indicates that Wordsworth's view of the mind as

embodied remained constant throughout the long span of his life (qtd. C. Wordsworth II: 487).

Drawing upon both epistemological approaches, but subscribing wholly to neither, Wordsworth maintains a surprisingly consistent view of the imagination throughout his life. Empiricist language captures the mind's interconnectedness with the natural world, while transcendentalist language captures the reverence he felt about this relationship. It allowed him to posit a divinity based on this interrelationship that the often atheistic empirical materialist accounts of mind lacked. Wordsworth understood that "there is something basic about the structure of intensely conscious beings (such as human beings) that allows us to feel the pull of such a powerfully transforming value experience," whether it is artistic or the experience of the sublime in nature (Ellis 180). He hoped to recreate these transformative experiences through his poetry by better understanding the relationship between the mind and the natural world. His interest in these matters was stimulated by his immersion in French political and philosophical culture, which was dominated by the materialism of thinkers such as d'Holbach during the mid-1790s, his friendship with Coleridge and their circle of friends within the British empirical tradition such as Davy and Wedgwood, and his own powerful experiences with nature.

Though Wordsworth, like Coleridge, grew increasingly conservative in his old age, he continued to posit a mind that is influenced by the world, even as it influences the world. While he was not a committed materialist in his later years, he retained the firm materialist foundations that characterise his early theories of cognition. His early materialism inflects his theory of imagination rather consistently, despite any philosophical shifts and his eventual devotion to Anglicanism. Wordsworth never explicitly espoused materialist views, but rather embedded them

into his poetry and prose, particularly in *The Prelude*, his great exploration of the growth of mind. Thus, though the 1850 version of *The Prelude* removes many overtly materialist passages in favour of dogmatic religious language, it also retains passages that would seem problematic to one who had definitively eschewed any connection to his early views. However, just as he felt no need to disavow his youthful commitment to the French Revolutionary cause, which he also details in *The Prelude*, neither he did feel compelled to distance himself entirely from his early philosophical views. Coleridge, on the other hand, did overtly espouse materialism and later defensively tried to eradicate all traces of its influence. Yet, like Wordsworth, his theory of imagination also owes a debt to his early materialism, as we shall see.

> My system is the only attempt I know of ever made to reduce all knowledges into harmony; it opposes no other system, but shows what was true in each.
> --Samuel Taylor Coleridge

Chapter 4 "Schemes of Materialism & Immaterialism": Coleridge's Theory of Enactive Cognition

While Wordsworth never finished his philosophical opus, he did publish the *1815 Preface*, which substantively treats the topic of the imagination. His discussion of the role of imagination in creativity and where it fits into the continuum of other mental processes such as fancy, judgement, and invention provoked a response from Coleridge in the *Biographia Literaria*. Though it was published two years later in 1817, Coleridge had been writing informally on the topic in his notebooks for several years. Composed shortly after his harrowing, partial recovery from opium addiction,[1] the *Biographia* was intended as a preface to his own philosophical opus, variously called *Opus Maximum* or *Logosophia*, which, like *The Recluse*, never manifested while he was alive.[2] Though its rambling digressions range from autobiography to literary criticism to abject apology, the *Biographia* contains Coleridge's most sustained, published philosophy of mind. Nonetheless, the discussion is fragmented, contains purloined, translated material, and is difficult to grasp. Many of the unpublished notebook entries that Coleridge used to assemble the *Biographia*, however, provide crucial insight into his theory of mind because they show the developmental trajectory of his thinking. Likewise, his early poetry outlines the core issues that preoccupied him throughout his lifelong exploration of cognition. Thus, the work that precedes the *Biographia*—both published and unpublished—

[1] Coleridge's recovery was only of limited success since he never managed to stop using opium. Rather, the period following 1816 is characterised by managed use, which was significantly better than depths to which he had fallen prior to his residence with James Gillman.

[2] This ambitious and fragmentary work, as its editors call it, was published in 2002 as part of *The Collected Coleridge Series* under the title *Opus Maximum*. It was edited by Thomas McFarland with the assistance of Nick Halmi.

significantly informs this published account of mind and imagination.

Coleridge's discussion of the imagination in the *Biographia* largely responds to Wordsworth within the context of British empiricism's cognitive science debates, even as it makes use of his reading in German idealism and attempts to deny his materialist influences. He frames the discussion of imagination by drawing attention to the differences between his and Wordsworth's theories. Wordsworth's "purpose" Coleridge claims, is "to consider the influences of fancy and imagination as they are manifested in poetry" (*BL* I: 87-88). That is, he is concerned primarily with imagination as an aesthetic principle. Coleridge's "object," on the other hand, is "to investigate the seminal principle" (*BL* I: 88). That is, he hoped to discover the underlying laws that govern cognition so that he could understand the relationship between human beings, their natural world, and the divine. In fact, this was the project he had urged Wordsworth to undertake at the beginning of their friendship—the philosophical epic poem that was to have been their contribution to the Romantic cognitive science debates.

Much had changed in the nearly twenty years that had elapsed since the poets first conceived of that project and Wordsworth's theories disappointed Coleridge. For one thing, Wordsworth had published sundry collateral works that consider the mind in relationship to the natural world, many of which display a tacit reliance on materialist principles. In a private letter composed in May 1815, Coleridge censures Wordsworth for failing to refute "the sandy Sophisms of Locke, and the Mechanic Dogmatists, and demonstrating that the Senses were living growths and developments of the Mind & Spirit in a much juster as well as higher sense, than the mind can be said to be formed by the senses" (*CL* IV: 574). Coleridge recognised that in Wordsworth's conception, the mind is significantly informed by and contained within the sensory body and was, therefore, still grounded in

materialism. This letter was composed a year before Coleridge was introduced to James Gillman, who eventually took him in and helped him get his life and his opium use under control, at least to an extent. Given his circumstances, Coleridge was desperate to believe that the mind exerts total control over the body. He was driven to reject any notion of mind still based on empirical materialism.

Prior to this point, and perhaps even after, as Coleridge sunk further into his opium addiction, the notion of embodied cognition became terrifying to him. Where Hartley's Doctrine of Necessity once inspired "the pious confidence of Optimism," it now seemed to doom him to a life of subjection to the bodily necessity of addiction (*CL* I: 168). Because he longed for release from this physiological compulsion Coleridge found German transcendentalism especially appealing, for it offered grounds for freedom from biological necessity. Even so, he could not ignore the findings of British empirical science. His theory of mind, even in the *Biographia*, which draws so heavily on Schelling is not solely the product of his transcendentalist influences. Rather, Coleridge combines aspects of transcendentalism and empirical materialism to formulate a theory that tries to reconcile his desire for autonomous subjectivity in human beings with the reality of material existence, as it was being discovered and characterised by empirical materialist science. Furthermore, traces of both philosophical systems are present from his earliest work to some of his latest work.

While Coleridge's enquiry participates in the German philosophical search for an unconditioned and absolute reality, his theory remains indebted to his early exposure to the theories of Hartley and Priestley and to the second wave theories produced by Darwin, Davy, Wedgwood, and John Thelwall. The critique of Hartley, Priestley, and materialism and his discussion of associationism in Chapters V through VIII of the *Biographia* reveal Coleridge's participation in the cognitive science

discourse, even as he attempts to distance himself from his early philosophical beliefs. Just as Wordsworth's theories remain indelibly marked by the French *philosophes* and other empiricist sources, Coleridge's ostensibly transcendentalist account of mind and imagination fails to wholly erase the materialist basis of his theories. His account of imagination in the *Biographia* continues to draw heavily on British empiricism despite the obvious influence of German metaphysics that has been widely recognised within the scholarship on Coleridge.

Most critics take Coleridge's rejection of materialist association at face value. Certainly his earliest critics took him at his word when he insists that he "had successively studied in the schools of Locke, Berkeley, Leibnitz, and Hartley, and could find in neither of them an abiding place" (*BL* I: 140-41). Though Victorian critics such as Leslie Stephen acknowledge that Coleridge was widely read in British empirical philosophy, particularly Hartley and Priestley, they quickly dismiss these early influences. Viewing Coleridge as innately transcendentalist in his system of beliefs, they look primarily to German idealism to understand his philosophical influences. Or, they disregard his philosophy altogether (see Stephens; Gingerich). Subsequent critics of the transcendentalist school—the name I give to this group of scholars—such as Basil Wiley, Kathleen Coburn, K. M. Wheeler, and Thomas McFarland, have followed in their footsteps.

Coleridge scholars face a myriad of problems when trying to unravel his philosophical thought, including his theory of mind. While Coleridge left much better notes about his reading than did Wordsworth, this creates some problems even if it solves others. His obsessive chronicle of thought records contradictory points of view that make it difficult to determine his stance on any given issue. Another difficulty is his narrative of philosophical progression, recounted in the *Biographia Literaria*. Coleridge's refutation of materialist cognitive science is a strategy for convincing his

readers, and himself, that he had outgrown his youthful enthusiasms, which include British empirical philosophy. The "overthrow of Hartley became vital to Coleridge's sense of progress" (Christensen 76), which was, in turn, vital to appeasing his fears about the realities of his opium addiction. Coleridge was invested in constructing a particular story about himself that would bolster his self-image and recuperate his tarnished reputation, or so he hoped. In this story, he presents himself as a mature philosopher, who has moved beyond the youthful capriciousness of failing to be a steadily productive writer, abandoning his family, advocating for reform, and of course, championing materialist science. As Jerome Christensen notes, many critics invest as heavily in this narrative as Coleridge did. Consequently, they treat British empiricism with the same scorn that Coleridge does.

The plot of Coleridge's philosophical progression has been aptly summarised by I.A. Richards as the "conversion from Hartley to Kant" (17). At stake is the issue of Coleridge's debt to British empiricism as well as his relationship to transcendentalism—German, Platonic, and Christian. Within the transcendentalist school of critics, one group attributes "nearly all his final philosophy" to German transcendentalist philosophers, such as Kant, Schelling, Jacobi, and Fichte (Lovejoy 341; Coburn, *Inquiring*; and Wheeler). Other critics see him primarily in terms of Platonism. Dismissing his dalliance with associationist doctrines, Coburn claims that Coleridge is "first and last a Platonist" ("Foreword" xvi). Likewise, McFarland claims that Coleridge was always a Platonic Trinitarian at heart, whose philosophical development entailed "the gradual adjustment of other sequences of thought to his own axiomatic sense of reality; his philosophical biography records . . . a continuing process of elucidation of primary orientations" (175-76). Yet another group traces Coleridge's philosophical debt to mystical religious thinkers such as Jacob Boehme and St. Paul (see McFarland; Webster). While these critics may disagree on minor

points, they tend to be bound by the common belief that Coleridge's early interest in Hartley can be characterised in terms of "scientific pretensions" that became "a matter . . . of no importance" as he matured (McFarland 249). They dismiss his interest in British empiricism as an anomaly, rather than recognising it as a significant part of his philosophical development.

Invested in seeing Coleridge as the quintessential transcendentalist, these critics have trouble reconciling his early influences with his later philosophy. When they treat his theory of imagination, they tend to ignore British empiricism because they dismiss it as a serious influence. Thus, they overlook significant aspects of his thought. Critics who argue that for Coleridge the imagination links human beings to the natural world do not see that his need to find such a connection was driven by his British materialist roots. They do not recognise that such a view of the imagination stems from Coleridge's attempt to reconcile empirical materialism and transcendentalism, that it was his way of trying to find a third term that could mediate the two epistemologies.

More recently, critics such as H.W. Piper, Desmond King-Hele, Ian Wylie, and Trevor Levere have established that Coleridge does indeed owe a debt to British empiricism. This group of critics challenges the critical disregard of Coleridge's fascination with science and its influence on him. They scoff at scholars who argue for the "profound and lasting influence of Platonism on Coleridge, because he studied its mysteries at Christ's Hospital" (Wylie 8). These critics cogently argue that "Coleridge's exploration of science and the formulation of his metascience were major components in the articulation and development of his thought" from the start of his career to its finish (Levere 3). Yet, they also jump to the foregone conclusion that Coleridge was exclusively a transcendentalist. According to Wylie, for example, Coleridge was exclusively concerned with "trying to communicate

metaphysical truths in poetry" even in his most materialist phase (4). Thus, he sees Coleridge's study of empiricism only in terms of his transcendentalism.

These critics also assert that as the poet "came to stress the active mind and creative imagination," he abandoned his early empiricist influences (Levere 14). Like the transcendentalist school critics, they take Coleridge at his word in this respect. In the standard critical account, Coleridge eventually rejects empiricism because its account of the mind was too passive and, therefore, inadequate to account for creativity. He turns, instead, to transcendentalism because it provides a better model of the active mind and from there formulates the quintessential Romantic theory of the creative imagination. While it is, indeed, true that Coleridge increasingly expressed his dissatisfaction with the positivist trajectory of British empiricism as it developed into the nineteenth century, it is not true that it failed to provide him with any useable models of mind.

A more moderate group, including Richard Haven, David Miall, and James Engell, argues that though Coleridge moved "away from his youthful enthusiasm for Hartley, he retains insights from him" (*Imagination* 328). The main gap in the scholarship, however, is that the critics who see Coleridge only in terms of his transcendentalist influences tend to interpret his theory of imagination solely in those terms, while the group that takes his interest in British empiricism seriously either does not treat the imagination or does not deal with it comprehensively. As with the critical tradition surrounding Wordsworth, the scholarship on Coleridge has not examined the poet's theory of imagination within the larger context of the Romantic cognitive science debates.

Coleridge's rejection of associationism is well known. Nonetheless, it was no "brief flirtation," as Coburn maintains (*Inquiring* 27). Where Engell and Bate, the editors of the critical edition of the *Biographia Literaria*, look primarily to Schelling,

Fichte, and Kant to understand Coleridge's often cryptic remarks about perception, I look to the British empiricists and to Coleridge's own notebook entries—along with the German sources—to shed light on his enigmatic claims regarding cognition. The ancillary material leading up to and just following the publication of the *Biographia* makes clear the role British empiricism plays in his theory, particularly as it relates to embodiment and emotion. Emotion in particular, as Miall notes, is "a significant principle of the mind" ("Emotion" 35). I argue with Miall and Christensen that Coleridge's engagement with materialism lasts longer than critics generally recognise and runs deeper than he, himself, would have liked to believe.

When Coleridge cobbled material from his notebooks into the *Biographia*, he made the importance of "the emotional process [in cognition] less explicit" ("Emotion" 37). Thus, to more accurately understand his thinking on this topic we must look at his unpublished writing and early poetry. Coleridge's account of the imagination in the *Biographia* is "so immethodical a miscellany" that bringing the unpublished material to bear on it provides crucial insights about how to interpret it (*BL* I: 88). It helps make sense of the "feverish glossolalia" (Christensen 111) that is plagued by problems of unattributed translations from German authors. The theory of mind outlined in chapter XII is complicated by the potentially plagiarised material from Schelling. While some critics caution that these passages should not be "read . . . with a rigorous eye as though they were finished products" (I. Richards 65), in fact, they contain important information regarding Coleridge's epistemology. The question is not whether Coleridge wilfully stole from Schelling in order to pass the ideas off as his own. I do not think that this was his intent, given that he openly acknowledges his debt to the German thinkers in other parts of the *Biographia*. Rather, the relevant question is what he means by including this material.

Scholars such as McFarland, Burwick, and Levere have established that

"Schelling is alien to Coleridge's most deeply cherished philosophical and religious convictions" and that he was not trying to pass off the philosopher's thought as his own (McFarland 40; Levere; Burwick). Though Coleridge broke from Schelling after he realised the "pantheistic implications" of his system, he continued to use the philosopher's "language while redefining crucial terms" (Levere 7). The task, then, is to distinguish Coleridge's thought from Schelling's in the passages he incorporates into the *Biographia* and to determine what meaning these excerpts have in Coleridge's philosophy of mind. The material from *System des transzendentalen Idealismus* (1800) provides important insight into Coleridge's epistemology, particularly when we understand that he was using these translations in his own way.[3] Like Wordsworth, Coleridge proposes a theory of mind and imagination that reconciles empiricist and transcendentalist hypotheses.

As with Wordsworth's account of imagination, using enaction as a critical methodology enables us to better comprehend Coleridge's complex theory of knowledge. Despite certain differences in philosophical assumptions, twenty-first-century enaction tackles the same issues as Coleridge in formulating a theory that reconciles the external world with subjective experience. Coleridge was constrained by the binary philosophic positions of his day and sought to articulate a third position, though it was barely conceivable to him. He drew from a range of sources, including a contemporary model for enaction found amongst the British empiricists. Where d'Holbach provides Wordsworth with a model, political radical John Thelwall gives Coleridge a theory that informs his thinking in this area. The enactive approach gives insight into four significant aspects of Coleridge's theory of mind: the relationship between the subject, the object, and God, which involves the corollary issues of how knowledge of the absolute comes about and the nature of the

[3] Translated into English Schelling's title is *System of Transcendental Idealism*.

relationship between the conditioned natural world and the unconditioned human subject; the role of physiological organisation in perception; his belief that sentience, and specifically self-consciousness, is an inherent feature of human organisation, rather than a superadded quality; and the relationship between the mind and the body, particularly with respect to the imagination.

I argue that Coleridge's theory of cognition does not neatly conform to (or plagiarise) German idealist philosophies, as some critics argue, but straddles empiricist and transcendentalist approaches.[4] Coleridge's early poetry demonstrates his interest in aspects of transcendentalism even as he openly avows Hartleyean associationism. Poems such as *Religious Musings* (1796) and *The Destiny of Nations* (composed 1796) establish the fundamental points of Coleridge's theory of mind. They reveal certain continuities that persist in his theory over time. In addition to theories of mind proposed by the British empiricists, passages from the unpublished notebooks examined in conjunction with the theory of imagination advanced in the *Biographia* reveal the significance of emotion, and therefore embodiment, to thought. Like modern enactive psychologist Ralph Ellis, Coleridge sees self-consciousness as the defining feature of human cognition that establishes the ground for a unified self. The notebooks also help us to distinguish Coleridge's thought from Schelling's, particularly his understanding of the relationship between subject and object and his philosophical position with respect to pantheism, transcendentalism, and materialism.

This chapter situates Coleridge's theory of mind within the British empiricist

[4] Charges of plagiarism began shortly after Coleridge's death in 1834 with Thomas De Quincey's article in *Tait's Edinburgh Magazine*, in which he notes the ostensibly unacknowledged translations from Schelling's *System des transzendentalen Idealismus*. The attacks became more vicious a few years later in the hands of J.F. Ferrier and discussions regarding Coleridge's use of German philosophers continued throughout the nineteenth century and into the twentieth. For a thorough history of these charges, see McFarland, pp. 1-52.

cognitive science debates. I argue that Coleridge's theory draws on materialist hypotheses, particularly the theory of organisation outlined by Thelwall in *An Essay, Towards a Definition of Animal Vitality* (1793). Thelwall's text captures a key point of contention between materialists and dualists in the cognitive science debates, that is, whether or not sentience is an immaterial principle that is superadded to the human frame or the result of material organisation. This point is relevant to Coleridge's ideas about the formation of self. When he posits that knowledge is an act of self-creation, Coleridge is essentially claiming that intelligence is not a superadded quality, but a core feature of human organisation. Despite his rejection of materialist conclusions, he incorporates aspects of materialism into his own theory. Coleridge's theory is more properly considered enactive than transcendental, though until recently, scholars have lacked this critical apparatus and, consequently, remained stuck in the same binaries that Coleridge faced.

Philosophical Continuity

From his earliest days Coleridge sought to understand the limits of human knowledge, both in terms of what we can know and how we know. The answers to these questions are crucial to his philosophy and they preoccupied him long before he had conceived of the *Logosophia*. It can be difficult to tease out the precise nature of Coleridge's thinking on this subject because of the fragmentary nature of his corpus. For an author whose failure to complete projects is often noted, he left extensive written material, both published and unpublished, for his critics. His extensive notes, letters, and marginalia contain a minutely detailed record of his thought process, including the fluctuations in philosophical position. For example, in 1794 Coleridge declares, "I am a compleat Necessitarian—and understand the subject as well as almost Hartley himself" (*CL* I: 137). Then, in the 1801 letter to Poole, he famously claims to have completely "overthrown the doctrine of

Association, as taught by Hartley" (*CL* II: 706). Yet, six months later, he includes Hartley in a list of "deep metaphysicians" who have created "an austere system of morals" (*CL* II: 768). This group contains names as venerable—and contradictory to Hartley—as St. Paul, Kant, and Fichte. These apparent vacillations present serious challenges to scholars who are interested in determining the philosophical underpinnings of his theory of imagination

Many critics dismiss Coleridge's fluctuations in thought as youthful irresolution or detours on the way to the position he espouses in the *Biographia* and later works. To establish Coleridge as a transcendentalist, some critics simply ignore the early years, regarding his early thought as they regard his political radicalism—of little importance, simply the vagaries of youth. Like Coleridge in the *Biographia*, they construct a particular narrative of philosophical growth that culminates in Coleridge's "life-and-death struggle against the mechanical materialism of the eighteenth century" (Willey 8). Essential to this story is the overthrow of associationism. It is a mistake, however, to regard Coleridge's fluxive thought process in these terms. The private notebooks show him working out his own system and beliefs, which he had not fully elucidated even by the end of his life.

Even the scholars who argue for the influence of British empiricism equate the empirical theory of mind with Locke's passive model. They do not recognise that the very scientists whom they discuss were involved in a debate about the nature of the cognition and its relationship to the body. Though Wylie and Levere, for example, mention such notable influences as Darwin, Davy, and Wedgwood, they do not see these men as philosophers of mind or discuss their engagement with cognitive science. Focussed on other issues, they do not discuss the debate between empirical materialism and transcendentalism as it was expressed during the Romantic period. Yet, these are the very issues on which the cognitive science discourse centres. To set

them aside necessarily brackets discussions of the imagination, which for Coleridge involved questions such as the relationship between mind and matter, cognition and embodiment. His "central philosophic preoccupation," Wheeler notes, was with "the mind" (vii). Epistemology, and its sub-discipline cognitive science, was the focal point of Coleridge's philosophical interest.

From his earliest poetry to the *Biographia* and beyond, Coleridge investigates the relationship between the human mind and the external world, that is, between the subject and object, and how the mind functions in relationship to the body. His theory of imagination stems from these initial questions and the answers that he formulated on the basis of his philosophical reading, beginning with Hartley's *Observations on Man*. Critics of the transcendentalist school puzzle over "the tenacity with which Coleridge adhered to David Hartley" and find it "one of the most difficult aspects of his thought to assess and understand" (Wheeler 1). They take his contradictory statements as evidence that he disavowed the empirical philosophy almost as soon as he had read Hartley. As it turns out, Coleridge consistently held seemingly contradictory beliefs about the relationship of human beings, nature, and God throughout his life.

Coleridge's thought did indeed progress and mature, as is only natural, but it also contains some remarkable philosophical stability, which is paradoxically characterised by its contradictions. His philosophical interests, from his first introduction to British cognitive science to his later study of Kant and the *naturphilosophen*, remain largely unchanged. Furthermore, the rudiments of his later thought, which include elements from both materialist and transcendentalist philosophy, are present in his early work and persist as he develops his theory over the years. In this respect, his thought exhibits philosophical continuity, but of a different variety than that identified by the transcendentalist school critics. *Religious*

Musings, composed in 1794 and published in 1796, demonstrates this fact. Written during a period in which Coleridge espoused Necessitarianism and Unitarianism, the poem praises materialist philosophers Hartley, Priestley, Newton, and Benjamin Franklin, denominating them "the elect of Heaven" (*RM* 46), who will save the world from injustice through "heavenly Science" (225). Giving poetic expression to Hartley's optimistic doctrine of moral perfectibility, the poem reveals Coleridge's early materialism.

At the same time, however, he identifies himself as an idealist in a footnote appended to the 1796 version of the poem. This note explains that lines 395 to 410 will only be "intelligible to those, like the Author, [who] believe and feel the sublime system of Berkley (sic); and the doctrine of the final Happiness of all men" (*CPW* I: 124 n2). Within the space of a single sentence, Coleridge professes his allegiance to Berkeley's system of subjective idealism and to Hartley's materialist doctrine of perfectibility and physical necessity. In Berkeley's system, external objects exist only as perceptions of the human mind and phenomenal objects are the projection of God's divine mind. In Hartley's theory, human character is determined by the environmental factors that circumscribe perception. While both systems are monist, they espouse diametrically opposed philosophical positions: idealism and materialism. Coleridge's note, therefore, indicates that he is capable of cleaving to contradictory points of view and, in fact, does just that.

Rather than suggesting that Coleridge was already in the process of throwing off Hartley's philosophy, this incongruity indicates that his thought contains a mixture of concepts taken from both positions. Had Coleridge abandoned Hartley for Berkeley in 1796, he would not have named his son, born that same year, David Hartley. In 1798 he named his second son Berkeley. Other poems of the period also point to this blending of opposing systems. In 1795, Coleridge worked with Southey

on *Joan of Arc* (1796). His note to line 34 in Book II argues against Hartley's and Newton's theory of matter, including the Doctrine of Vibrations. He accuses them of entailing atheism because "matter is according to the mechanic philosophy capable of acting most wisely and most beneficently without Wisdom or Benevolence" (*CPW* II: 1112-13). Likewise, the second stanza in *The Destiny of Nations* (composed 1796, published 1817) charges Necessitarians with "Untenanting creation of its God" (*DN* 35) with "Their subtle fluids, impacts, essences, / Self-working tools, uncaused effects" (32-33). Several stanzas later, however, he refers to God as the "All-conscious Presence of the Universe! / Nature's vast ever-acting Energy!" (*DN* 460-61). The 1817 note to these lines attribute them to the influence of Priestley, whom he admits to following in the late eighteenth century. This poem simultaneously censures and asserts materialist ideas.

A few years after these poems were written, from about 1800 to 1802, Coleridge adopted the same methodological approach to exploring cognition as his materialist friends Wedgwood and Davy. Inspired by Darwin's *Zoonomia*, which details experiments for readers to try, these men conducted a "multitude of minute experiments with Light & Figure" (*CL* II: 707) in an attempt "to solve the process of Life & Consciousness" (*CL* II: 706).[5] These "little experiments," Coleridge explains, were performed "on my own sensations, & on my senses" (*CL* II: 731). His obsessive attention to his own bodily and mental states, which he details in his notebooks, is no mere hypochondria, but a reflection of his materialist approach. Empirical materialism provided not just a theoretical model to explain sentience, but a practical methodology to explore it.

Like Hartley, he thought that if he could discover the mechanism that drives cognition he would understand how human beings are connected to the natural

[5] Vickers for a discussion of Wedgwood's influence on Coleridge's programme of experimentation.

world and to God. The conflicting statements found in the poetry and notebooks are bound by a single thread—Coleridge's interest in epistemology. While his early poetry deals with issues such as politics, society, theology, and the French Revolution, it also engages with epistemological questions related to cognition. Poems such as *Religious Musings* and *The Destiny of Nations* set up the theoretical parameters that delimit Coleridge's theory even in the *Biographia*. Aspects of this thought can also be found much later in letters, notebook entries, and poems that were composed in the years before his death. Rather than revealing an underlying commitment to transcendentalism, to the exclusion of materialist philosophy, the contradictory elements in Coleridge's early works indicate his dual commitment to aspects of both empirical materialism and transcendentalism.

Theoretical Parameters

Coleridge wanted to understand four primary issues, which he hoped to articulate into a fully formed philosophical system. First and foremost, he wanted to understand the relationship between human beings, the natural world, and God or, in more abstract terms, the relationship of the subject and the object to the ultimate ground of existence. The need to understand these three primary elements of reality drove his exploration of epistemology. The second issue that interested him was organisation, how it relates to cognition and to life in general. He recognised that everything material shares at least one basic, common characteristic—organisation. That is, far from being inchoate, matter manifests in organised forms which belong to one of the two classes that Darwin had identified—organic and inorganic. This issue of organisation and its relationship to sentience was a topic of intense interest to cognitive theorists and no less to Coleridge. The third problem that preoccupied Coleridge was the role of consciousness, and more specifically self-consciousness, in human knowledge. He saw self-consciousness as humanity's defining feature that

sets it apart from other life forms. Finally, undergirding this entire epistemological venture is the fourth question: the role of emotion or feeling in human experience, including cognition, and its relationship to embodiment. Coleridge's understanding of the mind as embodied provides important insight into his theory of imagination even though he elides this connection in the *Biographia*.

While Coleridge's thinking changes over the years, the basic contours of his thought regarding each of these four issues are present in his earliest work, including his poetry. The two poems that most clearly outline these concerns are *Religious Musings* and *The Destiny of Nations*. *Religious Musings*, in particular, sets out the terms of his enquiry regarding the relationship of the natural world, human beings, and God as it describes "The process of his [Christ's] Doctrines on the mind of the Individual" (*CPW* I: 108). Ambitious poems that attempt to recount "the entire history of the world" by tracing the development of postlapsarian society from a Unitarian perspective, they contain scathing political critique (Wylie 95). They also outline Coleridge's burgeoning theory of mind. Embedded in the poems is a theory of social reform based on Hartley's doctrine of moral perfectibility and the six stages of moral growth. Hence, the view of the human subject that these poems depict is based on Hartley's and Priestley's theories of cognition. In the poems, Coleridge maps out a concept of God that remains largely unchanged throughout the course of his career.

Organisation was important to Coleridge because, from a biblical perspective, God created the world by bringing order to primordial chaos. Thus, organisation is the most basic commonality amongst all material entities, from human beings to inorganic objects, such as rocks and minerals. Coleridge understood that on a basic level the principle of life and the principle of organisation are somehow connected. He also saw that cognition and organisation are related, as

materialists claim. While Coleridge did not agree with certain aspects of the theories of organisation put forth by the men such as Thelwall, Darwin, and Davy, neither did he fully accept or reject their theories. Rather, he incorporates certain principles of theirs into his later theory by altering it to fit his dualist orientation. While Coleridge refuses to believe that life and sentience are a consequence of the organisation of matter, he does see that they are inextricably linked to and depend on it. Furthermore, he is interested in how cognition is itself an organising principle. *Religious Musings* and *The Destiny of Nations* show him working through this issue.

These early poems also highlight the significance of consciousness in both God and human beings. Coleridge's epistemology revolves around "the role of self-consciousness in knowledge" (Levere 41). *Religious Musings* and *The Destiny of Nations* establish the importance of this concept to Coleridge's early thought. Focusing primarily on the relationship between God and the natural world, these poems contain elements that seem pantheistic. The pantheistic language, however, reflects the limitations of the philosophical systems under which Coleridge was labouring. In the *Biographia*, Coleridge revisits the relationship between self-consciousness and knowledge, couching his discussion in the language of German transcendental idealism by drawing on and incorporating the passages from Schelling, though even this language, which is pantheistic in its own right, is inadequate to express his philosophy. Coleridge sees self-consciousness as a defining feature of cognition and, in this respect, his theory anticipates twenty-first century enactive theories, particularly as they relate to the concept of a unified self that possesses agency.

After the long chapter in the *Biographia* that discusses the role of consciousness in cognition and the relationship between subject, object, and God, Coleridge finally moves into a discussion of the imagination. Coining the term

esemplastic, he defines the imagination in terms of its basic ability to organise sensory perception into a cohesive picture of reality. In the early poetry, Coleridge had already started to explore this creative aspect of mind in his characterisation of God and its relationship to the human subject. One important connection that emerges from these poems is the relationship between the creative imagination, cognition, and the body. Coleridge's early long poems establish that he was already thinking about the creative mind and its ability to transform confusion into cohesion. The later conversation poems and sonnets, such as "Frost at Midnight" (1798), "Dejection: An Ode" (1802), "This Lime-Tree Bower My Prison" (1797), and "Fears in Solitude" (1798), develop this theme and establish a connection between cognition and embodiment.

Emotion, like self-consciousness, is a driving factor in perception that connects the mind to the body. Notebook entries leading up to *Biographia Literaria* show that Coleridge attributes "a primary role to feeling in a range of mental processes," but fails to incorporate this discussion into the fragmented theory found in the published work ("Emotion" 37). Nevertheless, embodied cognition is the fundamental model on which Coleridge bases his theory of imagination. He regards the body as the material instantiation of being, for "we cannot arrive at the knowledge of the living Being but thro' the Body which is its Symbol & outward & visible Sign" (*CN* III: 4066). Regardless of what happens to the individual after death, in life the body is not a distraction as in Platonism but indispensable to cognition. The body, however, gave Coleridge great trouble.

His eschewal of materialist theories of cognition in the *Biographia* reflects the material conditions of his opium addiction. Under the sway of laudanum, a "swarm of Thoughts & Feelings, endlessly minute fragments & as it were representations of all preceding & embryos of all future Thought" haunted and

terrified him (*CN* III: 4057). The horror of associationism and materialist theories of mind is the primacy they grant to the body. Coleridge was frightened by the possibility that human existence might be nothing more than "an unintelligible affrightful Riddle, . . . a chaos of ~~dark tailless~~ dark limbs & trunk, tailless, headless, nothing begun & nothing ended" (*CN* III: 4057). In this statement we see his fear of unguarded thought that might be driven by the mechanism of association and unsupervised by the will. This fear expresses itself in terms of deformed body parts that are "tailless, headless," and misshapen. This metaphor exposes the connections between his anxiety about association, embodied cognition, and his lack of willpower over many aspects of his life. Nonetheless, he regards the brain as the organ of thought, even if he does not believe that it represents the whole picture. Toward the end of his life, he returns to the image of the Eolian harp and acknowledges the connection between the body and the mind posited by the British materialist philosophers whom he had admired in his youth. This return, however, is not as shocking as it might seem after we examine the continuities of Coleridge's thought from the early poetry to the *Biographia Literaria*.

Enactive Cognition

According to McFarland, all philosophy starts with three basic terms—the subject, the object, and God. Whether or not this holds true for all philosophy everywhere, it certainly captures the terms that most interest Coleridge. *Religious Musings* and *The Destiny of Nations* consider each of these terms and present a particular relationship amongst the three. They provide a starting point for determining Coleridge's theory of mind, which depends on the relationships between these three terms. In particular, they establish a view of God that remains fairly constant despite Coleridge's move from Unitarianism to Trinitarianism. While the question of God is of little significance to twenty-first-century cognitive theory,

ontologically and epistemologically God functions for Coleridge as the third term, or middle way, offered by contemporary enactive theory. As a critical methodology, enaction is valuable because it addresses many of the same problems that Coleridge faced as he strove to formulate a theory of cognition that reconciles the best parts of materialism with the best parts of transcendentalism. It also articulates solutions that are similar to Coleridge's albeit in twenty-first-century language. Like Coleridge, who sought to find a way out of the binary set up by materialism and transcendentalism, enaction offers a third option that, though it dispenses with absolutes and the concept of God, mirrors Coleridge's solution to the problem of how knowledge is produced.

McFarland defines subject and object in the usual way. The subject refers to the self, while the object refers to everything that is external to the self. Before Coleridge encountered German philosophy, he understood these concepts through the lens of British empirical cognitive science. Following Hartley and Priestley, he understood the subject in terms of humanity, both as a species and as individuals; he envisioned the object primarily as the natural world. God, in McFarland's view, represents all "the questions arising from the defining limitations of both subject and object" (55). In other words, it represents everything that humans do not, and perhaps cannot, know about their ontological situation. In Coleridge's philosophy, however, rather than the unknown or the unknowable, God represents the very possibility of ontology. As *Religious Musings* and *The Destiny of Nations* make clear, God is the ground of being that makes possible the existence of both subject and object.

This distinction is important for two reasons. First, it identifies a consistent thread in Coleridge's thought. As early as 1794, Coleridge saw God as the "Supreme Reality!" on whom all life depends and toward whom all life tends (*RM* 133). This

view of God is taken almost directly from Hartley, who also deemed God "the cause of Causes, and the supreme Reality" (Hartley II: ii). Yet, even after Coleridge claims to have broken with Hartley, his understanding of God as "the indwelling and living ground of all things" remained intact as he tried to find a more satisfactory account of cognition than the Doctrine of Vibrations (*BL* I: 148). Second, it points to the epistemological problem that defines Coleridge's early work. Contrary to McFarland's definition, Coleridge did not see God as being beyond the realm of human apprehension. Like Hartley, he believed that human beings were capable of knowing God and, in fact, according to the divine plan were slowly and invariably moving toward reunion with him. The primary question, then, was how human beings—the subject—could know God—the ground of being. While the answer to this question evolves significantly over the course of his career, the belief that humans could apprehend divine reality was a fundamental tenet in Coleridge's epistemology. What changed is *how* they could perceive God.

In his early investigations into epistemology, Coleridge accepts Hartley's theory of how people are able to apprehend God's truth. In *Religious Musings* and *The Destiny of Nations*, he assumes Hartley's and Priestley's hypothesis of embodied cognition, making it the foundation of his exploration of the relationship between subject, object, and God. He focuses on articulating God's relationship to the natural world because he presumes, along with Hartley, that nature is humankind's point of access to the divine. According to Hartley, nature embodies God's truth. Though original sin had fractured perfect knowledge of God, it was still perceptible but only "as through clouds that veil his blaze" (*DN* 17). Consequently, in Hartley's theory of moral perfectibility contemplating and studying the natural world causes people to grow in understanding of true reality and to move toward union with God. In Coleridge's interpretation of Hartley, God is "The Great Invisible (by symbols seen)"

(*RM* 19).[6] He is the unseen force that animates the natural world, visible only through his effects. Yet, the precise relationship between God and nature can be difficult to tease out in Coleridge's early poetry.

In these poems, Coleridge is still working out the relationship between God—as the ground of being—and nature, the object. At the start of *Religious Musings* he calls God "th' ETERNAL MIND" (*RM* 11). In *The Destiny of Nations* he is the "All-Conscious Presence of the Universe!" (460). In the following line he is identified as "Nature's vast ever-acting Energy! / In will, in deed, Impulse of All to All" (461-62) and in *Religious Musings* he is "Nature's essence, mind, and energy!" (49). The significance of these descriptions is threefold. First, they describe God's relationship to the natural world. In Coleridge's understanding, both early and late, God is the force that drives the natural world, but he is not nature itself. Second, they show how God's truth can be apprehended by the subject. They set up a particular relationship between God and the subject that is based on cognition. Third, they establish a definition of God in terms of his creative activity, which resurfaces in his later account of the esemplastic imagination and its role in perception. Coleridge does not equivocate when he claims that the "fundamental ideas" about God as a creative act of will and the plastic power of imagination "were born and matured in my mind before I had ever seen a single page" of Schelling (*BL* I: 161). These ideas, which have come to characterise his later theory, find nascent expression in these early poems.

For Coleridge, God is the ground of being without whom neither subject nor object could exist. Though he envisions God as the source of all life and the substratum of the material world, he does not think, as Spinoza and other pantheists did, that God comprises the substance of the world. Yet, his precise conception of

[6] This line is taken from the 1794 version. In the published version the lines are "For the Great / Invisible (by symbols only seen)" (*RM* 9-10).

the relationship between God and object in these poems is difficult to pinpoint because they blend Priestley's materialism with Berkeley's idealism. At times he attributes agency to the natural world by depicting the forces of nature as "Monads of the infinite mind" that are endowed with consciousness (*RM* 408). These monads are enabled "each to pursue its own self-centering end" as they enact God's will (*DN* 49). Here, he portrays natural forces as creative intelligences that are part of "one all-conscious Spirit" (*DN* 44). According to Piper, the Monads are a "credible and serious substitute for the angelic hosts of *Paradise Lost*," which these long poems emulate (40). Yet, because they are affiliated more closely to the natural world than to heaven they give the impression that God animates the natural world through the monads, which are both divine and part of material nature. God seems to compose nature's very substance as in pantheism. Written while Coleridge was a disciple of Hartley and Priestley, however, the poems present "the Unitarian conception of God who is beyond as well as being the natural world, and who impels all things" (Piper 44).[7] God, in this view, causes the material world without necessarily being either material or immaterial. Though a materialist, Priestley clarifies that while he does not believe that God is an immaterial substance neither does he believe that "the *divine Being* himself may be material also" (*Disquisitions* 103). Instead, he claims that God's essence cannot be fully understood because it is so radically different from anything that exists in the material world. Priestley does, however, think that human beings can know God by his creation, that he is visible in the processes of nature. In Coleridge's interpretation, as the law that orders the natural world and structures reality, God is the origin of reality.

While western philosophy has been critiqued for its search for origins,

[7] In some respects, this view might be more properly considered panentheistic rather than pantheistic. Panentheism is the view that God encompasses and is part of the material universe, but at the same time exists independently of and supersedes it.

Coleridge's definition is unusual in that knowledge of this origin (God) emerges from the interaction of the subject and the object. In this respect, his epistemology can be considered enactive. On the one hand, God is the "absolute truth . . .; a truth self-grounded, unconditional and known by its own light" (*BL* I: 268). While seems that God can be considered in transcendental terms, for something to exist transcendentally means that it exists in the absence of relationships to other entities, either subjects or objects. While this definition characterises the transcendentalist understanding of God as the absolute reality and ground of being, it does not accurately capture Coleridge's understanding. For Coleridge the ground of being only has significance in relation to the subject and the object. To understand this claim it is necessary to foray into the *Biographia Literaria.*

Coleridge asserts that "All knowledge rests on the coincidence of the object with the subject" (*BL* I: 252). Many critics have dismissed this statement, along with the other passages in the *Biographia* that outline Coleridge's epistemology because they are translations of Schelling. Even so, these passages are important because they contain Coleridge's discussion of the epistemology that undergirds his theory of imagination after it has been informed by German transcendentalism. In this respect, it differs from the earlier poetry. Some critics, René Wellek for example, charge Coleridge with being "a second-hand thinker, a purveyor of borrowed ideas" and deny the importance of his contribution to intellectual history because they claim he has nothing original to offer (*McFarland* 1).[8] While other, more sympathetic critics believe that Coleridge's borrowings were neither malicious nor intentional, but merely an issue of carelessness or forgetfulness, they tend to disregard these

[8] Wellek expresses these opinions in his multi-volume *A History of Modern Criticism: 1750-1950* (1955).

passages.[9] For example, I.A. Richards claims that Coleridge inserted this material into the *Biographia* as a placeholder. Coleridge was not satisfied, he speculates, with this articulation of the relationship between the subject and the object and probably meant to address Schelling's remarks in the non-existent chapter hinted at in the title of Chapter XII or in a later work.[10] McFarland attributes the borrowings to Coleridge's style of "composition by mosaic organization" by which he assembled a philosophical system from the pieces of other systems and demonstrates that Schelling's philosophical convictions are deeply antithetical to Coleridge's position (27). Once Coleridge recognised the pantheistic implications of Schelling's reformulation of Kant's critical philosophy, he parted ways with the German philosopher.

Nonetheless, the passages from Schelling lend a significant insight into Coleridge's philosophical position. Frederick Burwick argues that as a poet "Coleridge actually explores the imaginative processes which Schelling merely posits" from an artist-centred perspective (183). Engell sees the difference in terms of religious orientation. From his perspective, Coleridge "selects and transforms ideas from German philosophy and critical theory with an acute and prophetic eye" by repurposing it to religious ends ("Idealism" 154). In this view, Coleridge uses the philosopher as a fulcrum to develop his own thought. Both Levere and McFarland claim that Coleridge uses Schelling's language even after he had abandoned his ideas. It is in this light that I read these passages in the *Biographia*. Coleridge's use of the translated material gives him a specialised discourse that had been handed down

[9] These critics accept John Shawcross's editorial opinion in the 1909 edition of *Biographia Literaria*. Shawcross posits that Coleridge was most likely transcribing material from his notebooks several years after he made the initial translations and, perhaps because of poor record keeping, could not distinguish between his original ideas and the material taken from Schelling.

[10] Chapter XII is titled "Of requests and premonitions concerning the perusal or omission of the chapter that follows" but the chapter that follows gives the sketchy and unsatisfying account of imagination and does not address the questions raised in the previous chapter.

from philosopher to philosopher to develop the ideas he first articulates in his early poetry. Though in translation the language is nearly the same as Schelling's in many places, the epistemological position it articulates is not identical. Much of the material found in these passages is also found in the notebooks. As Coburn notes, though the theses in Chapter XII depend on Schelling, "he was not taking excerpts into the notebooks as he read, but adopting a course of thought along with and without Schelling" (*CN* III.2: 4265). Coleridge adapts Schelling's philosophy to his own ends, drawing on its language and concepts to formulate an epistemology that refines the philosophy found in his early poetry.

To return to the discussion of God as the ground of being, the passages from Schelling help Coleridge to articulate his views in philosophical language. Coleridge's philosophical position, however, is more aptly considered in terms of enaction than transcendentalism. In his philosophical study of Coleridge, McFarland claims that only two philosophical positions are available depending upon on ontological priority, which is whatever a philosopher "consider[s] the relevant ontological factor to be" (Gorman 462). In McFarland's view, either one starts with the subject or one starts with the object and ends up as either a transcendentalist or a pantheist. While he cogently argues that these were the only two positions available to Coleridge, his categorisation of the poet as a transcendentalist is not entirely accurate. Though Coleridge claims that "Every man is born an Aristotelian, or a Platonist" and that "They are the two classes of men, beside which it is next to impossible to conceive a third," he does envision a third position that amalgamates the best features of British materialism and German transcendentalism (*TT* I: 172). In fact, his theory of cognition is characterised by the middle ground it strikes between the two philosophical approaches. Just as enaction disrupts longstanding binaries within the Western philosophical tradition by challenging the contemporary dichotomy

between structuralist and deconstructionist epistemologies, Coleridge's theory of cognition strikes a middle ground between the two philosophical approaches that characterise Romantic philosophy.

Contrary to McFarland's claim, Coleridge starts with neither subject nor object, but grants ontological priority to God. With respect to the subject and the object, he asserts that "we cannot determine to which of the two the priority belongs. There is here no first, and no second; both are coinstantaneous and one" (*BL* I: 255). In this view, the subject and object are mutually defined and mutually co-dependent. Neither merits ontological priority because priority belongs to God. God, according to Coleridge, is absolute. He is reality, "the ground of things" (*BL* I: 246). Yet, just as in *Religious Musings* and *The Destiny of Nations*, he is not the fabric of reality but rather that which makes material reality possible. Yet, almost paradoxically, God emerges from the interaction of the subject and the object. The unconditioned ground of being is manifest in the relationship between entities that, in their individual instantiations, belong to the conditioned realm. The absolute, he explains, cannot

> be found in a subject as a subject contra-distinguished from an object: for unicuique percipienti aliquid objicitur perceptum.[11] It is to be found therefore neither in object or subject taken separately, and consequently, as no other third is conceivable, it must be found in that which is neither subject nor object exclusively, but which is the identity of both." (*BL* I: 271)

This passage—which the editors of the *Biographia* note is not a direct translation though it has parallels with Schelling—establishes two important points. First, God

[11] "For every perceiver there is an object perceived" (*BL* I: 271 n3).

inheres in the interaction of the subject and object; and second, that neither the subject nor the object exists independently of the other.

It may seem impossible that the absolute—something that ostensibly exists beyond the constraints of space and time—should be contingent upon the relationship between two conditional elements. Yet, this is the paradox that lies at the very heart of the cognitive science debates. Those who believe that the sentient principle belongs to a transcendent realm or that it is a function of an immaterial soul are at pains to explain how this unconditioned, immaterial principle is able to communicate, interact with, and gather data from the conditioned material realm. This conundrum is famously known as the mind-body problem. The primary problem for transcendentalists is to account for how the ideal and material worlds interface. They must answer the following questions: How does the mind communicate with the material body? How are material data transmitted to the immaterial mind? And how the does the mind direct and control the body? Materialism, on the other hand, offers plausible explanations of how perception works at this physiological level. Eliminating the distinction between matter and spirit, materialists are more easily able to reconcile communication between the subject and object because they are composed of the same substance and, therefore, share a common property. Whether atheistic or pantheistic, materialists see the ground of being in terms of the material world. The problem is that early materialist accounts of cognition strip humans of free will by subjecting them to the laws of nature and the Doctrine of Necessity.

People, however, tend to experience themselves as beings with a degree of autonomy even when common sense or science says that we are subject to causal laws. Coleridge articulates the problem well:

> Quisque suae fortunate faber[12]—But on the other hand, however, this very nature appears conditioned & determined by an outward Nature, that comprehends his own—What each individual *turns out*, (Homo Phainomenon) depends, as it seems, on the narrow Circumstances & Inclosure of his Infancy, Childhood, & Youth—. . . he seems to be ⌜. . . .⌝ influenced & determined (caused to be what he is, qualis sit = qualified, *bethinged*) by ~~it~~ Universal Nature, its elements & relations.—Beyond this ring-fence he cannot stray . . .—from this ~~knot~~ Skein of necessities he cannot disentangle himself, which surrounds ~~and~~ with subtlest intertwine the slenderest fibres of his Being, ~~and~~ while it binds the whole frame with chains of adamant—. (*CN* III: 4109)

This passage summarises Coleridge's deepest fear as well as his thorniest philosophical conundrum. On the one hand, human beings are subject to the laws of nature and influenced by environmental factors. If, however, these are the only factors controlling character formation as Hartley theorises, then human beings have no agency and no way of making changes to their life circumstances. On the other hand, human beings are capable of doing precisely that; they seem able to make decisions, change their circumstances, and determine the paths their lives take, at least on some level. Coleridge recognises that, as part of the natural world, people are in some respects constrained by their materiality. He could not ignore this physiological fact even though he rejects Hartley's Doctrine of Necessity.

Transcendentalism seems to solve this problem by claiming that the subject

[12] "Every man is the maker of his own fortune" (*CN* III.2 4109).

originates in the transcendent realm. In this way, it conceives of a self that is truly free. In order to justify free will, however, transcendentalism posits an unconditioned, self—a position that entails dualism. Clearly, the human body belongs to the material world and is regulated by its laws. So, in order to explain how an unconditioned being can exist in a conditioned body, transcendentalists must separate the self from its material container. In this way, transcendentalism provides a justification for free will, validates the sense that people are capable of making and acting upon decisions, and the belief that we are not mere automatons responding to external stimuli.

The problem remains, however, of how the conditioned and unconditioned realms interact. In Schelling's philosophy, the subject, object, and the ground of being are all considered from the transcendental perspective. He describes them as two categories of being: conditioned (objective) and unconditioned (subjective). Despite this distinction, he sees them both as originating from unconditioned being. Thus, his ontology posits absolute freedom. In his attempt to solve the paradox of how the transcendent and material realms interface, Schelling resorts to immaterial monism, or pantheistic idealism, which ultimately conflates the subject and the object with the ground of being. Despite the similarity of language and even direct translations, Coleridge, as McFarland argues, does not agree with this position. Coleridge keeps God separate from the actual material subjects and objects that populate the natural world.

Coleridge believes, with the transcendentalists, that the human behaviour is not determined solely by the laws of nature but freely chosen. Consequently, human beings have free will, which means that we are morally responsible for our actions. In Hartley's system all choice is dictated by association. Necessitarians such as Hartley or Godwin do not consider criminals culpable of their crimes, but see them

as victims of circumstance. They view their actions as the necessary consequences of environmental conditioning. Rendering human beings in this way annuls the possibility of an autonomous subject who is free to choose between good and evil. Coleridge, however, like Milton, believes that "Man cannot be a moral Being without having had the Choice of Good and & Evil" (*BL* I: 121 n3).[13] Yet, he also recognises that human beings are not entirely free of material constraints. We cannot, for example, defy the laws of gravity or stay the aging process; thus, we are by necessity subject to natural law to some extent. Caught between two irreconcilable propositions, Coleridge had to make his own way toward a theory of mind that maintains the integrity of both the subject and the object while avoiding the deficiencies of transcendentalism and pantheism, both idealist and materialist. Coleridge solves this problem in two ways, both of which are enactive. In his theory, the absolute emerges from the conditional through the epistemological act, a state of affairs that is driven by human organisation.

In order to preserve God as the absolute ground of being while simultaneously respecting the conditional aspects of human existence, Coleridge asserts that "During the act of knowledge itself, the objective and the subjective are so instantly united" that the ground of being is revealed, experienced, and known in the interaction (*BL* I: 255). In other words, God does not come into being when the subject and the object interact, but knowledge of him and his truths emerge from the exchange. The medium of this exchange is the symbol, which is how Coleridge envisions the relationship between God and the object. Objects in the natural world, in Coleridge's view, are symbols of God's ordering principles, which structure and delimit material reality. They account for the intersection of God's reality with the material world while maintaining a clear distinction between the two. Available to

[13] This remark by Coleridge appears in an "annotation on a back flyleaf of Schelling's *Philosophische Schriften*" (*BL* I: 121 n3).

the senses, symbols, or natural phenomena, are the observable manifestations of divine law that reveal the principles by which the natural world is ordered. God's truth is the reality that not only structures the world, but also undergirds the relationship between subject and object. Nature is "Symbolical, one mighty alphabet" that allows "infant minds" to know God (*DN* 19-20). It makes visible the ground of being and enables humans' knowledge of the divine. As people experience and come to know the natural world, they gain knowledge of reality, for it emerges from their interactions with their environment.

This view of knowledge formation is similar to that articulated by enaction, which asserts that information exists in neither the subject nor the object, but in the interaction of the two. Knowledge of the world is not something to be gleaned from the object nor is it something to be superimposed by the subject. Instead, it emerges from the interaction of the two. This creation of knowledge is the "very essence of *creative* cognition," according to Varela and his colleagues (148). The difference, however, between Coleridge's theory and twenty-first-century enaction revolves around the concept of absolutes. Where Coleridge claims that knowledge of the absolute emerges from the interaction of subject and object, enactionists argue that all knowledge is contextual, arising from structurally determined interactions between organisms and their environments. No knowledge, in this view, is absolute.

In enaction, cognition is the enactment of meaning via a pattern of interaction with the environment. For Coleridge, it consists in gaining access to absolute truths through embodied action. He believed that "the deeper . . . we penetrate into the ground of things," i.e. God, "the more truth we discover" (*BL* I: 246). The similarities between the two theories are more significant, however, than this difference. Unlike twentieth century objectivists—whom enactionists react against—or even nineteenth-century empiricists, Coleridge does not consider this

truth as a property of the object. He also does not, however—like twentieth-century post-structuralists, who maintain that all knowledge is socially constructed, or eighteenth-century transcendentalists, who see it as originating in the subject—view it as a property of the subject. Like contemporary enactionists, Coleridge believes that knowledge is revealed in the interaction of the two.

In establishing God as the ground of being, Coleridge defines a relationship between the subject and the object that is based on mutual co-dependence. In other words, one cannot exist without the other. The "subject," which is "equivalent to mind or sentient being" is "the necessary correlative of object" (*BL* I: 253-54). The two are mutually interdependent, for a percipient subject implies an object to be perceived and, conversely, a perceived object implies a percipient subject. As in enaction, "things are codependently originated" (Varela et al. 223). Neither Coleridge nor contemporary enactionists want to claim that the world of objects is a product of the mind. It is not the world that they bring into existence, but knowledge of the world, which unfolds according to the structure of reality. For Coleridge, God structures this reality. While enaction does not consider the question of God, it allows us to see how Coleridge, refusing to locate knowledge in either the subject or the object, sees it as the product of their interaction.

Even as Coleridge moves away from the theories of Hartley and Priestley, it is clear that he continues to believe that God is accessible through the natural world. After his move toward transcendentalism and Trinitarianism, when he begins to conceive of God more in subjective terms, he still envisions him in terms of the reality or law that dictates the conditions of being and unifies the multeity of phenomenal life. God is still the ground of being that "doth make all one whole" (*RM* 131). In his later years, Coleridge's study of science culminated in a theory of "complex correspondences and interconnections" that defines all levels of reality

from the most divine to the most mundane (Levere 154). He continued to see nature as God's language—the Logos made manifest—that, like the human subject, partakes in both divine reality and objective reality. In the enactive view, structure—both that of the organism and of the environment—governs the interaction between the two and dictates the type of knowledge that emerges from the interaction. Coleridge also saw this interaction as being structurally determined, but where enactivists attribute structure to evolution and natural drift, Coleridge holds that "the organs of sense are framed for a corresponding world of sense," a belief he retains from Hartley and Priestley (*BL* I: 242).[14] In other words, human physiology is structured by God to enable knowledge of him to emerge from the interaction of subject and object.

Organisation

The question of organisation was of such great interest in the cognitive science debates that in January and December 1793 John Thelwall delivered two lectures on this topic to the Physical Society at Guy's Hospital. Both of these disquisitions led to discussions that continued for several days. The debate in December lasted so long that eventually the chair of the meeting shut it down.[15] Coleridge was interested in the issue not only because of his interest in cognitive science, but also because of his obsession with theology. In contrast to the Platonic and neo-Platonic view that matter is inchoate, Coleridge saw organisation as a defining characteristic of the material world. He took seriously the biblical account of creation in which the earth "evolved from chaos to order" (Levere 136). For

[14] Natural drift is the theory that looks at the evolutionary process from the perspective of both species and environment. Rather than arguing that species adapt to their environments in order to survive, it "highlight[s] the way in which the . . . genetic and evolutionary process both shapes and is shaped by the coupling with an environment" (Varela et al. 195). In this view, both environment and organism evolve together.

[15] After the discussion was terminated because it was deemed "to have no application to the science of medicine and surgery," Thelwall resigned from the Physical Society (Physical Society minutes qtd. in Cooper I: 250). For more details about these lectures see Cooper.

Coleridge, organisation touches on multiple concerns from the creation of the world to creativity in general. Ultimately, he rejected Thelwall's atheistic conclusions that phenomena traditionally affiliated with the immaterial soul—life and sentience, specifically—result from organisation. Nonetheless, he integrates aspects of Thelwall's materialist hypothesis with transcendentalist discussions of the immaterial soul to formulate his own enactive theory of mind.

If Wordsworth had an eighteenth-century French model for enaction in d'Holbach's *The System of Nature*, Coleridge's British model was Thelwall's *An Essay Towards a Definition of Animal Vitality* and possibly even the "Origin of Mental Action Explained on the System of Materialism," the two lectures Thelwall delivered at Guy's Hospital in 1793.[16] In these essays, Thelwall argues that organisation is the essential characteristic that distinguishes living organisms from the non-living. In this respect, he provides an early precedent for the concept of autopoiesis on which enaction is based. Though he is best known for his radical politics, Thelwall studied medicine at Guy's Hospital in London from 1791 to 1793.[17] While he viewed "the Medical Profession . . . as a matter of entertaining curiosity, and not as a pursuit to which" he had "any . . . pretensions of devoting" himself, nonetheless, during his tenure at Guy's he contributed to the discussions about vitality and sentience (Thelwall, *AV* 1).

Animal Vitality applies Priestley's argument about sentience in *Disquisitions* to the question of life. Where Priestley argues that sentience depends upon the

[16] Only the first lecture is known to have survived. Personal correspondence with Nicholas Roe and the archivist at Guy's Hospital Physical Society Archives housed at King's College in London indicate that if a copy of the second lecture exists, it has not yet been located.

[17] Scholarship on Thelwall owes much to Nicholas Roe, whose work has excavated this important Romantic figure. For information on Thelwall's life, political career, and poetry see: Roe, *Wordsworth and Coleridge: The Radical Years*, pp. 145-198; "Coleridge and John Thelwall;" "'Atmospheric Air Itself;'" and Chapter 4 in *The Politics of Nature*. See also Collings, pp. 57-79; Scrivener; Fairer, Chapter 10; Poole; and *The Life of John Thelwall by his Widow* (1837).

organisation of the central and peripheral nervous systems, Thelwall argues that life itself depends on the entire physiological structure of the living organism. In Thelwall's theory, as in Darwin's in *Zoonomia*, vitalism and the so-called mechanistic philosophy intersect. Though it presents a materialist theory that accounts for the phenomenon of life, Thelwall's theory is by no means mechanical, in part because like Darwin he distinguishes between organic and inorganic matter. He asserts that vitality—or the state of being alive—is an inherent quality of organic beings rather than a superadded quality. That is, it is not an attribute of a soul or some other immaterial principle that exists independently of an embodied organism. Again, like Darwin's, Thelwall's theory cannot be classified as mechanical because though he acknowledges the body's intrinsic materiality, he refuses to view it as a machine. An organic materialist, he sees life as an innate property of matter that emerges from organisation.

In Thelwall's view life originates in embodiment. He argues that living organisms have "a simple organized frame" that enables life to manifest (*AV* 12). The particular physiological structure of human beings, and all other living beings, makes life possible while the structure of inanimate objects does not. Much of Thelwall's lecture controverts John Hunter's hegemonic theory that though "our ideas of life have been so much connected with organic bodies," in fact, "the living principle" is "some [superadded] power" that animates an otherwise inert body (Hunter 78). In Hunter's view, life is a phenomenon independent of embodiment. Hunter takes seriously the Mosaic proposition that "*the life of all flesh; the blood of it is the life thereof*" (Leviticus 17 qtd. in *AV* 14). He theorises that the blood, possessed by the living principle, is alive and circulates through the body, imbuing it with life.[18] "Life," he argues, "can never rise out of, or depend on organization" (Hunter 78). In the

[18] For more information on Hunter's theory of blood see Hunter and the *Encyclopaedia Britannica* (1790-98) entry for blood in Volume III, pp. 309-319.

common eighteenth-century view, the "vital power" was an immaterial force that takes "possession of the human or any other body" (*Encyclopaedia* III: 314). An "*immaterial essence*" (*TP* III: 78), life inhabits the body as an independent principle. When it leaves, the body dies. Thus, in the traditional, dualist view, life—like sentience—is entirely disconnected from the body.

As a materialist, Thelwall considers life within the context of material incarnation.[19] After all, there is no empirical evidence of life in the absence of actual, embodied instantiations of it. The "whole distinction between the *living* body and the *dead*," he argues, is "the susceptibility and presence, or the non-susceptibility, or absence of stimuli" (*AV* 12). He defines life as the ability to respond to external stimuli, or, the capacity for sensibility. This definition highlights both sensibility, which is an attribute of the physical organisation of an organism, and the presence of the appropriate external stimuli. That is, it depends on organism and environment, both. Life, then, results not simply from the subject, or living being, but arises from the interaction of the organism with its environment. Life is enacted, rather than bestowed or self-originated. Certain structures that distinguish the animate from the inanimate and the living from the dead enable organic beings to enact the life processes. In Thelwall's view, life is a consequence of material organisation, rather than the cause of it. In this respect, Thelwall's theory is enactive.

From this eighteenth-century perspective, as well as from a twentieth-century autopoietic perspective, the most basic condition for life is an autonomous organism's ability to maintain its organisational structure. Life is contingent upon

[19] Roe claims that "Thelwall was not an out-and-out materialist" without giving any evidence to support such a statement (*Politics* 13). In *Animal Vitality*, Thelwall overtly states that "the general ideas" that he has "formed of life" are based "upon the simple principles of materialism" (*AV* 13). In *The Peripatetic*, Thelwall censures individuals who "aspire to forget their materiality, and regulate their passions and conduct by *the pure dictates of immaterial essence*" (*TP* III: 78). Considering his open avowal of atheism, his medical training, his theory of life, and statements in his other writing, it is difficult to see how Thelwall could be considered anything but "an out-and-out materialist."

"maintenance (life maintains itself), organization (life organizes itself), and creation (life is created by life)" (Löfgren 236). In other words, given the right environment, an organism is alive if it has the self-sustaining processes to preserve its structural integrity and to maintain itself in its given state. In autopoiesis organisation is defined as "the relations between components that define a composite unity (system)" in which "the components are viewed only in relation to their participation in the constitution of the unity (whole) that they integrate" (Maturana 24). Though couched in twentieth-century language, this description closely resembles Thelwall's definition: "organization" is "*that arrangement of dissimilar parts, by which a harmony and communication of the whole is produced*" (*AV* 32). In other words, an organism's parts are arranged so that they can carry out the necessary functions to perpetuate life. From this assemblage of various parts emerges the whole organism. Furthermore, this structure determines identity and similarly structured organisms are classed together as phylum, genus, and species.

An organism is considered alive for as long as it maintains homoeostasis, a dynamically stable state of self-preservation. This state is maintained by a variety of processes, such as internal regulation, the acquisition of food, digestion, the reproduction and repair of parts, and so forth. These processes "*enable it [the organism] to preserve itself in a given state, and resist its own dissolution*" (*AV* 33). An organism, in this definition, is alive as long as it has the means to resist death. These means are dependent upon internal factors, such as healthy biological processes that allow the organism to function properly; external factors, such as the proper environment with the right food and temperature; and, finally, appropriate boundary conditions that allow the organism to remain whole. The ability to "*resist its own dissolution*" shifts the emphasis from simple organisation to self-organisation. Life emerges when, in conjunction with its environment, an organism

structures itself in such as way as to reproduce the component parts necessary for survival. In conjunction with the environment, an organism develops structurally so as to ensure its survival. Its structure emerges from its interaction with the environment, which also restructures the environment to better suit its needs. Organisation, then, enables life by providing an organism with the tools necessary for surviving in and adapting to a given environmental milieu.

This definition outlines the minimum conditions that distinguish living from non-living entities. These conditions are broad enough to encompass the multiplicity of living organisms, but narrow enough to exclude non-living phenomena. Thelwall and his contemporaries, Darwin and Davy in particular, sought to discover the parameters that differentiate the qualities, or properties, of organic life from phenomena that are solely within the provenance of Newtonian physics. Their goal was to formulate a hypothesis that was "sufficiently universal to . . . recognize living systems as a class, without any essential reference to the material components" (Varela, "Intentionality" 5). The British empirical materialists tend to see the difference between humans, animals, and simpler life forms "rather in the extent than the nature of [their] powers" (*AV* 12). They were not interested in the distinction between human beings and the rest of the natural world, but wanted to find the most basic conditions that enable life. In this respect, they provide an eighteenth-century precedent for the contemporary autopoietic theory.

Where the twentieth-century biologists Maturana and Varela sought a definition of life that transcends the particularities of material instantiation, Thelwall sought a theory that moves beyond narrow, religious definitions that revolve around an immaterial soul. He sought to provide a more robust definition than the commonly accepted dualist definition of life, which was described in *The Encyclopaedia Britannica* of 1790-98. According to *The Encyclopaedia,* "LIFE, is

particularly used to denote the state of living creatures, or the time that the union of their soul and body lasts" (X: 36). Thelwall, like other materialists, wanted an empirically verifiable definition of life that is unconnected to religious dogma.

Though Coleridge was also interested in understanding the defining conditions of life, contrary to Thelwall and Darwin, he was interested in empirical explanations of material phenomena that are consistent with Christianity. His primary quarrel with British empiricism was its increasing tendency to abandon metaphysical questions because they could not be empirically verified. While he recognises that there is some connection between life, organisation, and sentience, in 1796 he had not quite worked it out yet. Eventually, however, he would apply Thelwall's materialist theory in a transcendentalist context to formulate a theory of cognition that is enactive. Like his scientific colleagues, Coleridge sees organisation as the most basic feature shared by everything in the natural world. In the late eighteenth-century, Coleridge does not necessarily agree with Thelwall's theory, but neither does he disagree with it. He thinks the premise that life "is the result of organized matter acted on by external Stimuli" is "As likely as any other system" (*CL* I: 294). While he claims that he does "not know what to think about it," he playfully asserts that "on the whole, I have rather made up my mind that I am a mere *apparition*—a naked Spirit!—And that Life is I myself!" (*CL* I: 295). Coleridge does believe, however, that life is integrally bound up with organisation. He understands the organising principle as a part of the material world, but also in terms of the "creative Deity!" (*RM* 404). Organisation is another way that the object is connected to God.

In *Religious Musings* and *The Destiny of Nations*, organisation is associated with God and the material world. It is the principle that binds together all natural objects—living and non-living, human and non-human—and binds the natural world

to God. As in the Genesis story, organisation emerges from "the wild and wavy chaos" at the behest of God (*RM* 245). In the poems, however, different types of organising principles, the monads, yield different types of natural objects. The "aggregate / Of atoms numberless, each organized" bring order to the various parts of the creation (*DN* 40-41).

> Some nurse the infant diamond in the mine;
> Some roll the genial juices through the oak;
> Some drive the mutinous clouds to clash in air,
> And rushing on the storm with whirlwind speed,
> Yoke the red lightening to their volleying car. (*DN* 50-54)

These monads structure the natural world as they "pursue their never-varying course" (*DN* 55). This organising principle, which Coleridge envisions as a "plastic power," is not superadded to material world, but "interfused" with it as it "Roll[s] through the grosser and material mass / In organizing surge" (*RM* 405-07). The principle of organisation amalgamates with material objects, giving them their structure. It is God's law, which structures being as it manifests in the natural world. As in autopoiesis, organisation dictates identity. It determines whether matter will form into a diamond, an oak tree, clouds, or any other phenomena.

The question of organisation is also important to the question of sentience. Priestley had proposed that sentience results from the structural organisation of the neurological system in any given organism, including humans. He argues that "the *power of thinking* . . . cannot exist without its *substance*, which is an organized system" (*Disquisitions* 125). After applying Priestley's hypothesis to the problem of life, later that year Thelwall used it to formulate a theory of perception. Without access to "On the Origin of Sensation," we can only speculate about the argument it makes. According to Thelwall, however, the lecture pursues "precisely the same train

of ideas" presented in *Animal Vitality*, but with the purpose of explaining "the phenomena of mind . . . upon principles *purely Physical*" (*Poems* xxiii). We can further assume that it rearticulates the arguments put forth by Priestley and the other materialist scientists who formulated theories of cognition. According to the materialist hypothesis, the structural organisation of an organism dictates the type and quality of thought and consciousness that it can experience. Where plants experience pleasure and pain, as Darwin's experiments showed, more elaborately structured creatures such as dogs and horses exhibit consciousness. Human organisation enables self-consciousness and the ability to articulate experience into language, art, and poetry. Perception, in this view, depends upon the structure of the nervous system and body as a whole.

This structural argument is similar to the twentieth-century enactive approach, which emerged from autopoiesis. Just as the materialist hypothesis was not quite robust enough to provide Coleridge with a satisfactory account of creativity but is fundamental to his theory, so autopoiesis is essential to enaction, though it does not adequately explain cognition. According to Varela, autopoiesis "is necessary but *not* sufficient to give a satisfactory explanation of the living *phenomena* on both logical *and* cognitive grounds" ("Describing" 44). Enaction attempts to "reconcile the set-theoretic logic of autopoietic theory with the gradedness of concepts such as significance, norms, and values" (Di Paolo 47). It brings phenomenology to bear on the basic biological theory provided by autopoiesis. Likewise, Coleridge parts ways with materialist theories of cognition, in part, because they do not adequately address the subjective, or phenomenological, experience of cognition in the human subject. Most notably, they do not explain the lived experience of free will. They do, however, provide a basic foundation for Coleridge's theories.

Coleridge's engagement with the question of organisation helped him to

formulate a theory that reconciles the phenomenology of mind with its biological boundaries. Richardson claims that he was able to devise a "strategy for overcoming mind-body dualism without verging back towards a materialistic or 'corporeal' account of mind" (*British* 43). Though Coleridge articulates his solution in the language of transcendentalism—both Schelling's and Kant's—the conclusion that Coleridge draws as a result of exploring the question of organisation unites materialist with transcendentalist hypotheses. Ultimately, he does not reject the findings of materialism, though he rejects the conclusions drawn by materialists. Interestingly, Trinitarian Christianity—with its belief in the incarnation of Christ—helped him in his quest of "tying together the two separate portions of truth in the schemes of Materialism & Immaterialism" by giving "a flesh-and-blood reality to those processes of the rational and moral Being" (*CN* III: 3847). Reconciling the autonomous subject of transcendentalism with the conditioned reality of materialism was of utmost importance to Coleridge. In the end, his theory of cognition relies on a concept of organisation that is drawn from materialist sources.

Coleridge incorporates two of Thelwall's main points into his own theory. First, he claims that intelligence is not a superadded property of sentient beings and second, he argues human organisation drives cognitive processes. He believes that, ultimately, human beings are organised for creative activity. In 1796, Coleridge seems to agree with the materialist hypothesis that perception depends upon embodied organisation, for he certainly does not see the sentient principle as an immaterial principle that is appended to the body. He rejects the Platonic conception of the "'Soul'[as] a being inhabiting our body & playing upon it, like a Musician inclosed in an Organ whose keys are placed inwards" (*CL* I: 278). Though he does not agree that perception originates from organisation, he does see sentience as an inherent attribute of organic life. He argues that "intelligence is a self-development, not a

quality supervening to a substance" (*BL* I: 286). Like Priestley, who notes that the powers of the mind mature as children do and decline with age, Coleridge sees sentience as a process that develops along with the subject.

Unlike traditional dualists, Coleridge does not "pre-suppose . . . intelligence as already existing and complete," but sought to understand "it in its growth" (*BL* I: 297). Though this articulation of the mind is drawn from Schelling, it cannot be understood as merely transcendentalist. A notebook entry written shortly after the *Biographia* was published gives insight into Coleridge's thinking on this matter. In it he notices the "seeming Identity of Body and Mind in Infants" and "the commencing separation in Boyhood" (*CN* III: 4398). In this trajectory, the body dominates the mind in infancy, progresses toward a state of neutrality in which mind and body are in balance, and ends with the mind superseding the body. This path represents Coleridge's fantasy that someday he would gain mastery over his own disobedient body. Once the mind gains ascendancy, it will experience "the Body as . . . almost of a *recremental* (eξ) nature" (*CN* III: 4398). The Greek "eξ," which translates as "ex," expresses Coleridge's wish to nullify his own wilful body. This desire was undoubtedly related to his opium addiction that made his subjection to his body not only obvious, but horribly painful at times.

The persistent tension in Coleridge's work relates to his need to transcend biological necessity without resorting to solipsism or pantheism. Despite his overstated rejection of Hartley's theory of association, the *Biographia* reveals ambivalence toward the materialist hypothesis. Coleridge was not sure that it was entirely incorrect:

> For aught I know, the thinking Spirit may be *substantially* one with the principle of life, and of vital operation. For aught I know, it may be employed as a secondary agent in

> the marvellous organization and organic movements of my body. (*BL* II: 139)[20]

In this passage, Coleridge recognises the potential validity of the findings of British scientists. He understands that physiology has an undeniable effect on mentation. His goal is to reconcile the experimental data of British empiricism with the theoretical speculations of German *Naturphilosophie*. While transcendentalist philosophers also posit that human beings are self-organised, they make the subject responsible for its own being. This position is problematic on two counts. Not only does it deny the constraints of biology, it also removes God as the ground of being, thus conflating subject, object, and God. Coleridge, of course, could not agree with either implication. Using the criteria for life outlined by Thelwall in *Animal Vitality*, he posits reciprocity between the subject and the object, particularly as it relates to perception. He claims that "the stimulability determines the existence & character of the Stimulus, the Organ the object" (*CN* III: 4109). In other words, the way an organism *can* be stimulated determines *how* it perceives the world. As with the example of colour in the previous chapter, the structure of the eye ("the Organ") determines how many and what kinds of colours it sees ("the object"). The structure of the human perceptive apparatus determines the subject's experience as it interacts with the environment. In this respect, perception is driven by organisation—both the subject's and the object's.

Here, Coleridge describes a "cognitive domain that is neither pregiven nor represented but rather experiential and enacted" (Varela et al. 171). Because knowledge resides in neither subject nor object, but emerges in the interaction of the two, experience is determined by the structure of the percipient and constrained

[20] The quotation continues: "But, surely, it would be strange language to say, that *I* construct my *heart*! or that *I* propel the finer influences through my *nerves*! or that I compress my brain" (*BL* II: 139).

by the structure of the environment. Coleridge is concerned to ground human reality in the absolute, but wants to avoid the mistakes of materialism and transcendental idealism, alike. His primary objection to both is their displacement of God as the ground of being. Contrary to the materialists, he does not believe that the object, or organised matter, alone gives rise to sentience. Neither, however, does he believe that the subject is responsible for its own organisation. Transcendentalists claim that human beings have "a self-organizing nature" in which "nothing comes to it from outside, mechanically; [that] what is in it has formed itself from within outwards, according to an inner principle" (Schlegel qtd. in *McFarland* 259). Making the subject "the source of being and knowledge," idealism implies that "its own being, and also the world outside of it" is a product of "its own creation" (Levere 65). Transcendentalists make nature the ultimate subject that in its ceaseless activity produces the spontaneous thinking subject.

Opposed to pantheism—both idealist and materialist—Coleridge maintains a real distinction between the subject, the object, and God even as he theoretically conflates them. He acknowledges the constraints of nature without merging the subject and the object into the absolute. In the relationship between the subject, object, and God—like the relationship between the three parts of the Trinity—each retains its distinct identity. Their intersection is not a mergence; neither, however, do the subject and the object emerge from God. Able to retain the mystery of theology, Coleridge believes that, the absolute ground of being and organising principle, God, dictates the organisation that constrains and defines the human cognitive experience. Pondering Swedenborg's visions, Coleridge wonders if they "originated in any change of organic structure or functions occasioned or effected by Disease" (*CN* III: 3474). This question recognises that disordered organisation produces disordered thought and recognises the effect of physiology on cognitive processes.

Yet, God determined the organisation of both the human body and the environment it inhabits when he created order out of chaos.

To recapitulate, Coleridge proposes an enactive relationship between the subject, the object, and the ground of being. As the organising principle, God structures the material world. Nature is a symbol, or physical manifestation of his truth because it is ordered by his law. Knowledge of God—the absolute—emerges from the interaction of the subject and the object. This is what Coleridge tries to indicate by using Schelling's words to articulate his theory of mind. A question remains, however, about how these three discrete terms are able to interact in a system that eschews pantheism. To answer this question we must consider the subject's relationship to the ground of being and how it is able to recognise God in its interaction with the object. We must also consider the mutually co-dependent relationship of the subject and the object.

Consciousness, Self-Consciousness, and the Unified Self

According to *Religious Musings* and *The Destiny of Nations*, nature is one of two ways that humans can know and understand divine reality.[21] We are able to "view" God's truth "Through meaner powers and secondary things" (*DN* 15-16). The object functions as one means that connects the subject to God. The relationship between the three is based on Priestley's notion of shared properties. He argues that if the "soul" were "a substance so intirely distinct from matter as to have no property in common with it," it would be impossible for the subject to gain knowledge of it (*Disquisitions* xi). In other words, unless the subject and object have some shared property, perception cannot occur. For Priestley, the common characteristic is materiality, but for Coleridge it is God, that is, both share the same ground of being. Through the phenomenal world, humans are able to apprehend God's reality

[21] Scripture is the other means for knowing God. It is revealed religion, in contrast to natural religion.

because nature functions as a symbol that links divine knowledge and the human mind.

In Coleridge's view, the relationship between the subject, object, and God is three-dimensional, so to speak. The object connects to God through his ordering principles, which are visible in nature and comprehensible to the mind. The subject connects to the object by means of their shared materiality. Human beings interact with and perceive nature through the body. The "powers in nature" are "objective correlatives of ideas in mind" that act "in conformity with the laws of nature" (Levere 99). That is, the same divine laws that govern the natural world regulate mental processes. The entire material "*World*" is "an harmonious System" that follows "Laws existing in the divine Nature—& therefore in the nature of Things" (*CN* I: 1619). The symbol, then, does not just exist in nature, but also in the human mind. It represents the coalescence of the material realm with God's truth. Through the perceptive act the subject gains knowledge of God. Thus, the subject is connected to God through cognition and, in particular, the human capacity for consciousness. The "reflective Powers of the mind" separate human beings from the rest of the natural world (*CN* III: 4397).

Coleridge's early poetry expresses this concept in Hartleyean terms. Knowledge of God equals consciousness of him, which leads to a fuller understanding of divine reality. In Hartley's epistemological system, the subject and object are not in harmony with God, which is why human beings cannot fully apprehend truth simply by experiencing nature. Hartley, along with Coleridge, understands the reunion with God in terms of perfect knowledge of him. As humans progress through the six stages of moral growth, they grow closer to understanding God—his truths increasingly fill their minds until

> by exclusive consciousness of God

All self-annihilated it shall make

God its Identity: God all in all!

We and our Father one! (*RM* 42-45)[22]

In other words, once human consciousness converges with God's truth, the postlapsarian separation between God and humankind will end. The veil will fall away from the natural world, human perception will be restored to perfection, and people will once again know God directly through his works. The subject, the object, and God will realign and coexist in unified harmony. Knowledge of God and consciousness are inextricably linked, for consciousness necessarily involves awareness.

Consciousness, and more specifically self-consciousness, enables human beings to know the ground of being, an undertaking that is both epistemological and ontological. Self-consciousness serves two interconnected purposes in Coleridge's theory of mind. First, it connects the subject to God. *Religious Musings* and *The Destiny of Nations* establish the importance of this concept to Coleridge's early thought. The poems characterise both God and human beings in terms of their capacity for self-awareness. He describes God as "one all-conscious Spirit, which informs / With absolute ubiquity of thought" (*DN* 44-45). In this definition, God is not a "blind idiot," but a sentient being who knows his creation as well as himself (*CL* I: 177). In the beginning, human beings shared this awareness of God, but after the Fall they "roam[ed] unconscious . . . with hearts / Unfeeling of our universal Sire" (*RM* 117-18). In his account of the evolution of society, Coleridge depicts early humans as having diminished consciousness and reduced emotional capacity. As the species progresses, however, humans become more conscious of themselves and of God. This capacity for awareness was the crux of cognition for Coleridge.

[22] The footnote to these lines directs the reader to "See this *demonstrated* by Hartley" and refers to the specific volume and page numbers (*CPW* I: 110).

This capacity for consciousness allows humankind to perceive God's laws in the object, despite postlapsarian perception. Self-consciousness enables human beings "to know ourselves / Parts and proportions of one wondrous whole!" (*RM* 127-28). The enjambment in these lines points to the double nature of human consciousness that allows us to know ourselves and to recognise that we are part of a larger scheme. The ability to recognise self, other, and our connectedness to the other encapsulates the importance of cognition to Coleridge's overarching philosophical scheme. The combined awareness of self as a subject and the other as an object permits humans "to know thy God" ("Self-Knowledge" 10). From this perception emerges knowledge of God, the "one omnipresent Mind" (*RM* 105). Self-consciousness makes it possible for the subject to interface with God and to experience not just being, but the very ground of being.

The second function of self-consciousness in Coleridge's theory, especially as it developed, is to justify free will. Following the transcendentalists, Coleridge eventually saw "free will" as the basis of the "absolute *self*" (*BL* I: 114). Originating with God—both literally and in the early poetry—self-consciousness becomes the basis of Coleridge's epistemology. In the *Biographia* he argues that "the whole synthesis of our intelligence is first formed in and through the self-consciousness" (*BL* I: 285). While Christensen critiques Coleridge for failing "to "establish the free will either ontologically or epistemologically" (96), for Coleridge self-consciousness—the defining feature of both ontology and epistemology—provides grounds for the will. "Intelligence or self-consciousness," he claims, "is impossible, except by and in a will. The self-conscious spirit therefore is a will" (*BL* I: 280). The very fact of self-consciousness proves free will and disproves the Doctrine of Necessity.

In this respect, Coleridge resembles twenty-first-century enactionists, who insist that consciousness not an epiphenomenon of core cognitive processes, but is

crucial for cognition because it helps organisms to make decisions and take actions that ensure their survival. It enables percipient beings to be aware of the environment and to act upon it in intelligent ways. Consciousness implies agency, or the capacity for self-motivated action. Like Coleridge, twenty-first-century enaction argues against biological determinism by pointing out that consciousness can only occur in autonomous organisms that are capable of acting on their environments. These actions are directed toward survival, self-preservation, and the enhancement of one's ontological conditions. These basic motivational drives determine what comes to the attention of an organism as it interacts with its environment. Furthermore, consciousness facilitates the decision-making that enables the organism to act in (and upon) the environment. Enaction "sees behavior as self-motivated and self-organizing, rather than passively responding to inputs" (Ellis 109). Coleridge acknowledges this reciprocity between subject and object in his notebooks: "a thing acts on me but not on me as purely passive" (*CN* III: 3857). With this statement, he reconciles materialism and transcendentalism by admitting that the subject is, indeed, acted upon by the object. Yet, he holds firm to a concept of the subject as an "agent of its own action rather than . . . a passively acting machine" (Ellis 109). In enactive theory, at least according to some theorists, consciousness justifies agency while self-consciousness justifies the concept of the unified self.

Contrary to most late twentieth-century philosophy, cognitive science, and even the originators of enaction, Ellis defends "the idea of the unified 'person,' which provides a continuity and unique character to the pattern in which different streams of consciousness unfold" (136). In other words, a subjective self does, indeed, exist apart from the socially constructed or narrative self, posited by post-structuralists. This subjective self is based on the ability of self-conscious organisms, such as humans, to imagine the body in relationship to environmental affordances. The

embodied self is the subject of each moment of conscious experience that is eventually stored in the memory—both neurologically and muscularly—as the body actively experiences the world. This self is available to us through the felt sense, or the sensations in the body that occur on the preverbal, emotional level (see Gendlin). This self is the object on which the higher-order self reflects. Ellis's theory of the embodied self unwittingly articulates a significant tenet of Coleridge's concept of the unified self.

Coleridge's early thoughts about subjectivity and selfhood make embodied sensation, particularly emotion, the foundation of the core self. He observes that "*tangible* ideas & sensations" are a significant part of "all that forms the *real Self*" (*CN* I: 979). The embodied self, which grounds particular subjective states and concrete actions, is "the subject of its own consciousness" (Ellis 155). From the actions and experiences of this self a "higher-order pattern" emerges from "the overall motivationally directed stream of consciousness" to form the structure of a personality, or "the personal self" (Ellis 136). Aware of its own states of being, the self-conscious organism understands itself as a subject. As it envisions itself in this way, it becomes the object of itself. The subject, as Coleridge explains more explicitly in the *Biographia*, is capable of perceiving and objectifying itself, a fact that complicates the categories of subject and object. As an organism enacts its consciousness by interacting with and shaping its environment in ways that are meaningful to it through structural coupling, the unfolding pattern that emerges is the organism's unique personality. These "subjective differences" from organism to organism that "express themselves across apparent objective similarities . . . identify the self as a subjective unity distinguished from others" (Ellis 162). These two concepts of self—the embodied self and the personal self—are bound together by emotion.

According to Ellis, emotion is a series of preconscious biochemical processes that inform the organism about its relationship to the environment and directs an organism's attention to objects and events in its environment. Thus, only those factors that can help the organism to achieve and maintain well-being come into its conscious awareness. Emotion forms the foundation of self and of agency, for attention, as brain activity demonstrates, is emotionally motivated. Coleridge, too, envisions the self in terms of emotion. He objectifies himself. As he thinks

> of *myself*—of the thinking Being—the Idea becomes dim whatever it be—so dim that I know not what it is—but the Feeling is deep & steady—and this I call *I*—~~the~~ identifying the Percipient & the Perceived." (*CN* I: 921)

He connects the unified self with the feeling, or the awareness of one's emotional states, that emerges when one recognises oneself as both subject and object. This passage identifies the felt sense of being, that is the embodied sense, that Coleridge experiences, which is defined by self-consciousness. This phenomenological experience of self is necessarily embodied and experienced on an emotional level and as a feeling.

The more sophisticated language of the *Biographia* elides this connection between experience, emotion, and embodiment. Nonetheless, the role of the body in knowledge continues to undergird Coleridge's theory. Thesis VII states that "I know myself only through myself," thus "it is contradictory to require any other predicate of self, but that of self-consciousness" (*BL* I: 276). The various personal pronouns refer to the two different types of self defined by Ellis. The "I" refers to the personal self, or the higher-order consciousness that is able to reflect on itself as object. The second "myself" refers to the embodied self that is both the object of reflection and the agent, or subject, that initiates action. The first "myself," then, is the unified

conception of the two. The awareness of oneself as both subject and object, which coalesces in the act of knowledge, is, in this case, self-knowledge. The experience of self is always subjective, for it is experienced as the emotional and action states of the body. The subject only becomes an object to itself in the act of contemplation. At pains to prove that the self is not a slave to external circumstances but has agency of its own, Coleridge obscures the role of the body and emotion in the *Biographia*.

This self creates itself through "particular acts of intellect and perception," which "can only be found in the act and evolution of self-consciousness" (*BL* I: 282). In the *Biographia*, feeling (experiencing emotion), being, and knowing are all acts. While this postulate that being and knowing are acts is a central tenet in transcendentalism, Coleridge considers thought in terms of action very early in his career. In a notebook entry recording an experiment he performed on his son Hartley, he observes that he "never before saw such an Abstract of *Thinking* as pure act & energy, of *Thinking* as distinguished from *Thoughts*" (*CN* I: 923). Though he claims that "T. Wedgwood's objection to my 'Things & Thoughts,' because [']Thought always implies an act or *nisus* of mind,' is not well founded" (*CN* I: 1077), in fact in the enactive view thought and action are inextricably connected. As recent research suggests, mental and motory processes share a common substrate. The discovery of mirror neurons reveals that cognitive processes invoke the motor system, even if they do not always result in physical action. As it turns out, both men were correct in different ways. Even when thought is not directed towards behavioural action, as action commands are inhibited they generate action imagery. These images are associated with imagination creativity and, according to Damasio, consciousness (see *The Feeling of What Happens*).

In *Religious Musings* and *The Destiny of Nations*, Coleridge represents the monads as "natural forces at work in the physical world" that are "endowed with

self-consciousness and purpose;" these monads are depicted as being part of "the Infinite Mind whose intentions they carry out" (Piper 46). They are personified as thinking beings that animate the natural world. While this representation of nature has undeniably pantheistic implications, the monads establish a relationship between thought, activity, and creativity that is characteristic of Coleridge's later thought. They are described as "Infinite myriads of self-conscious minds" that are part of the "one all-conscious Spirit," or God (*DN* 43-44). While this description does, as Piper argues, indicate a short-lived pantheism, the implicit pantheism reflects the limitations of a philosophical system straitened by the binary between materialism and transcendentalism, both dualist and idealist. The more important function of the monads is their representation of God as an "eternal self-affirming act!" (*DN* 46). While Coleridge draws on Schelling's language and concepts in the *Biographia*, the basic conception of God as an active being is already present in the early poetry. Furthermore, Coleridge associates God with knowledge, as the earlier discussion of Hartley's epistemology demonstrates. Hence, as early as 1796, Coleridge could assert in less philosophical language that "Truth is the correlative of Being" and that being, knowledge, and self-consciousness are interconnected in the epistemological act (*BL* I: 142).

The primary tenet of enactive theory is the assertion that cognition is not a mere computational act that translates into internal representations of the world or mere problem-solving, but consists of embodied action. Knowledge of the "perceived world . . . is constituted through complex and delicate patterns of sensorimotor activity" (Varela et al. 164). This knowledge emerges from the types of actions a being takes in the world. As a being acts, it is altered by its interactions with the environment. In this way, the act of knowing determines being. Conversely, being also determines knowledge by enabling as well as limiting how the organism

interacts with and gathers information from the world based on its physiological structure. Knowledge, in this view, is an act that defines and constitutes being, while being is a state that defines and constitutes knowledge: "the principle of being, and of knowledge, of idea, and of reality; the ground of existence, and the ground of the knowledge of existence, are absolutely identical" (*BL* I: 275). For Coleridge, these concepts merge in the absolute, but since knowledge of the absolute emerges from the interaction between subject and object, it follows that "consciousness must always be an action" (Ellis 56). For, it is only by acting in the world (the object) that the subject becomes aware (has knowledge) of the ground of being (the absolute).

To solve the problem of how an autonomous being can exist in a material world governed by physical and biological necessity, Coleridge posits that ultimately subjectivity "must therefore be an ACT," for "an absolute subject for which all, itself included, may become an object" cannot have the properties of an inanimate object (*BL* I: 279). In order to be conscious, the subject must be able to initiate motion, for these are the two characteristics (consciousness and self-initiated motion) that distinguish sentient from insentient beings. The subject, however, is not exempt from biology since it is necessarily embodied. The unconditioned part of the subject, in Coleridge's view, is its ability to act, that is, its agency, while the conditioned part is the part that is acted upon. In this formulation, "primary Consciousness = living Action" (*CN* II: 2784). Consciousness is enacted through the actions a subject takes in the world. This consciousness, or more specifically self-consciousness, that emerges from the action of the subject on the object "is the I" (*CN* II: 2784). The activity of self and the activity of God intersect in the human capacity for self-consciousness, for both have the capacity to take action and through this action become of aware of its surroundings and itself.

The Shaping Power of the Embodied Imagination

The interrelationship of creativity, action, organisation, and intellect is an enduring aspect of Coleridge's theory of mind that finds expression in his early poetry. Aside from their pantheistic connotations, in *Religious Musings* and *The Destiny of Nations*, the self-conscious monads are the nascent representation of God as the initial creative act that finds expression in two ways. First, it is the organising principle that structures the material world, as discussed above. Second, it is "the Protoplast" that eventually evolves into the creative imagination in Coleridge's later cognitive theory (*DN* 290). In these poems, Coleridge conceives of God as a creative mind endowed with the "plastic power" to shape and create form from chaos (*RM* 405). Because Coleridge envisions the connection between the subject and the absolute in terms of the mind, he sees the creativity of the creator mirrored in human beings. The "plastic might" in these poems, which is capable of "Moulding Confusion to such perfect forms," represents the creative deity and prefigures the creative imagination elaborated in the *Biographia* (*RM* 246-47).

In the poetry that follows the long poems, the creative power of the deity is more explicitly associated with human perception. For example, in poems such as "Frost at Midnight" (1798) and "Dejection: An Ode" (1802) it becomes the "shaping spirit of Imagination" ("Dejection" 86). The odes and conversation poems published in the late eighteenth century, particularly "This Lime-Tree Bower My Prison" (1797) and "Fears in Solitude" (1798), are less self-consciously philosophical than *Religious Musings* and *The Destiny of Nations*. Yet, despite being less conspicuously concerned with sentience, they more explicitly articulate the embodied and creative nature of the mind. These poems also establish the importance of emotion in cognition and the close relationship between emotion and the imagination. With the exception of Miall, who argues that Coleridge's "poetic theory was grounded in the phenomena of his own experience" with embodied emotion, critics have paid little attention to

the connection between embodiment, emotion, and the theory of imagination ("Emotion" 35).

Where there is little critical consensus regarding the importance of Schelling to Coleridge's theory of imagination, there is remarkable agreement about his classification of the primary and secondary imagination and their distinction from fancy. In his 1946 Warton Lecture, Basil Willey provides a basic outline of Coleridge's theory that stands the test of time. Not only have the definitions of the primary and secondary imagination and fancy that he establishes been adopted in varying forms by many scholars, but they accurately reflect the description Coleridge provides in the *Biographia*. Primary imagination, according to Willey, is nothing more than basic perception. Yet, it is a fundamentally creative act. Even "in the commonest acts of everyday perception," he explains, "we are making our own world" (4). Indeed, in the *Biographia*, Coleridge defines the "primary IMAGINATION" as "the living Power and prime Agent of all human Perception, and as a representation . . . of the eternal act of creation" (*BL* I: 304). The discussion of imagination in Chapter XIII, however, is tantalizingly brief, disrupted by the fictitious letter from a friend advising him to save it for the *Logosophia,* and preceded by several chapters disavowing materialist association and ostensibly embracing German idealism. Consequently, Willey interprets Coleridge's theory in solely in terms of transcendentalism.

Willey sets Coleridge's definition against "the old tradition of Locke and Hartley" and claims that the mind "knows its objects not by passive reception, but by its own energy and under its own necessary forms" (3). Without access to the theories of Romantic materialists such as Darwin, Davy, and Wedgwood or the unpublished notebooks, he looks only to the *Biographia* for Coleridge's theory of imagination. Thus, he necessarily misses the larger picture that the early poetry, the notebooks, and the scientific context provide. With the exception of McFarland,

most critics who are invested in seeing Coleridge as a transcendentalist agree with Willey's analysis of Coleridge's theory of imagination.[23] Though his account is accurate in several respects, he argues that Coleridge set "Imagination above the mind of the flesh" (Willey 10). In fact, the imagination mediates the material world and the absolute truth. It is how the subject knows God through the object. For this mediation to work, however, the imagination must be embodied. Thus, the imagination is "the mind of the flesh," for Coleridge's theory of imagination is based on the concept of the embodied mind.

The relationship between the subject, the object, and God that Coleridge establishes in *Religious Musings* and *The Destiny of Nations* highlights the necessity of embodiment. God's reality can only be apprehended in "all that meets the bodily sense" (*DN* 18). The body is the connection between the subject and the object that makes knowledge of the divine possible. Without it, union with the divine would be unattainable. Regardless of his move toward Trinitarianism and his increasing concern with the immortality of individual consciousness, Coleridge recognises the importance of the body during life.[24] As the *Biographia* makes clear, the subject and the object are interdependent. The material body serves as the point of connection between nature and the human mind. Just as nature embodies God's truth, so the body houses the mind and joins it to the external world via the senses.

"This Lime-Tree Bower My Prison" and "Fears in Solitude" echo the relationship between the subject and the object that is delineated in the earlier poetry, but in less abstract language. In these poems, Coleridge sets up a relationship

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[23] McFarland juxtaposes Coleridge's concept of imagination against Schelling's and argues that where Schelling thought the imagination was responsible for creating reality, Coleridge "*means exactly what we all mean in ordinary language by the word imagination*" (306-07).

[24] Even in his quest to justify life after death, Coleridge makes recourse to the natural world. In a 1796 letter to Thelwall he praises "*Mendlesohn*" for having "written some of the most acute books possible in favor of natural Immortal[ity]" (*CL* I: 284, square brackets in text). Later, in a notebook entry from 1811 he asserts that "Nature compels him [humankind] to think himself immortal" (*CN* III: 4061).

between the mind, embodiment, and nature that is reminiscent of Wordsworth's early poetry, especially "Tintern Abbey" and *The Prelude*. Characterised by rich, sensual imagery of a natural world that feeds the mind through the body, these poems show how sensory experience enables the transcendental experiences that "doth seem / Less gross than bodily" ("LTB" 40-41). They depict a mind that is embodied. Written when Coleridge was unable to join the Dorothy and William Wordsworth, Sara Coleridge, and Charles Lamb on a country excursion because of an injury, "Lime-Tree Bower" shows the poet comforting himself with memories of other walks. While this poem is sometimes interpreted as a testimony of the mind's ability to transcend physical limitations, in fact, it demonstrates that the mind is only able to surpass its immediate circumstances because it is furnished with sensory data that can be recalled on later occasions. His imagined account of his friends' walk descriptively recounts the natural wonders he has seen on previous rambles. Likewise, his description of the lime-tree bower is filled with concrete and sensual images that strike him "Silent with swimming sense" ("LTB" 38). "The blaze" (47) that hangs on the "transparent foliage" (48), the "broad and sunny leaf" (49), and "that walnut-tree / . . . richly ting'd" by "a deep radiance" (51-52) provide the basis for the mind's transcendental flight.

"Fears in Solitude" follows a similar pattern. As Coleridge meditates on the "Religious meanings in the forms of Nature!" his feelings for of his homeland are inspired by its natural beauty ("FIS" 24). A clear relationship is set up between the natural world and the mind through the "senses gradually wrapt / In a half sleep ("FIS" 25-26). Coleridge attributes all the "form" and "feeling in my soul" to the English countryside ("FIS" 192). He explicitly describes a relationship in which the mind is fed by the body. "[T]hy lakes and mountain-hills, / Thy clouds, thy quiet dales, thy rocks and seas ("FIS" 184-85) that he has "drunk in all my intellectual life"

(186) give him

> All sweet sensations, all ennobling thoughts,
>
> All adoration of the God in nature,
>
> All lovely and all honourable things,
>
> Whatever makes this mortal spirit feel
>
> The joy and greatness of its future being. ("FIS" 187-91)

In other words, all knowledge of God comes from embodied perception because it is the medium of communication between God and the human mind. In an 1811 notebook entry, Coleridge asserts that the "Soul or Self is acted upon by Nature thro' the Body" (*CN* III: 4060). The body connects the mind to the external world and is, therefore, necessary.

This constructive view of the body follows directly from the work done by Hartley and Priestley that challenges the Platonic and Christianised neo-Platonic views of the body as an impediment to truth and salvation. Even after Coleridge had come to fear the sway his addicted body had over him, he continues to acknowledge the close relationship between mind and body. His most transcendentalist notions are founded on the fact of embodiment. The juxtaposition between thought and things is often seen as a mark of Coleridge's transcendentalism. In the *Biographia*, he asserts that "in the very nature of a living spirit, it may be more possible that heaven and earth should pass away, than that a single act, a single thought, should be loosened or lost from that living chain of causes" (*BL* I: 114). The notebooks reveal that the imperishability of thought relies on the embodied mind. After he exclaims "when I think how perishable Things, how imperishable Thoughts seem to be!" Coleridge indicates that he understands that thoughts are stored in the body. To recall a lost thought, one need only "Renew the state of affection or bodily Feeling" and "instantly the trains of forgotten Thought rise from their living catacombs!" (*CN*

I: 1575). The connection between the permanence of thought and the embodied mind is clear in this note. The *Biographia* also asserts "that reliques of sensations may exist for an indefinite time in a latent state" and may be recalled by a "feverish state of the brain" (*BL* I: 113). Coleridge cites the case of the possessed woman as evidence that the mind lives in and is accessible through the body.

As Coleridge worked out his theory of mind during this period, he drew on materialist theories in a less ostentatious way than in the early long poems. Many of his conclusions are based on his own experience and self-observations. Again considering the difference between a thing and a thought, he notes that "a Thing at the moment is but a Thing of the moment;" that is, it does not achieve permanence until it is "taken up into the mind" (*CN* I: 1597). Yet, this rarefaction, by which material objects are transformed into immaterial thoughts, is actually an embodied process. When he is thinking, "the Body feels it [the thought] quicken with me" (*CN* I: 1597). The thought is felt in the body. Coleridge acknowledges the reciprocity of mind and body in a note that links the state of the body with the state of mind and vice versa. He observes that he is "afraid to think a thought, lest some thought of Anguish should shoot a pain athwart my body," but he is also "afraid even to turn my body, lest the very bodily motion should introduce a train of painful Thoughts" (*CN* II: 3149). Coleridge's lived experience makes it impossible for him to deny that the mind and body are inextricably linked. He continues to recognise this connection throughout his career, despite its obfuscation by the language of German transcendentalism in the *Biographia*.

As with the odes and conversation poems, Coleridge often reveals important information about his theory of mind in unguarded moments. In one such moment in the *Biographia*, he acknowledges the reciprocity of mind and body. When asking for the readers' forbearance with respect to his sometimes murky philosophical

passages, he cautions them that they cannot truly understand the limits of an author's knowledge until they have "complete insight into the causes, which through the medium of his body had acted on his mind" (*BL* I: 232-33). This almost chance remark reveals that he continues to see an intimate connection between the body and the mind even though his discussion of the imagination does not make it explicit and even attempts to obscure it. In other poetry and work produced during this period, Coleridge frequently refers to the brain as the organ of thought. These references are often casual and do not garner much attention because they do not appear in texts that purport to outline Coleridge's philosophy of mind.

The sheer quantity of these references, as well as how late they extend into his career, expose the breadth and the depth of the materialist influence on Coleridge's understanding of the mind as embodied. A sonnet composed in 1796 opens with the line "Oft o'er my brain does that strange fancy roll" ("Sonnet" 1). In part one of *Christabel* (1797), he writes of "so many thoughts [that] moved to and fro" (240) "through her brain of weal and woe" (239). In *Osorio* (1797), Maria describes "a thought" that "pass'd" through her "brain like lightening" (I.50-51); and in *Remorse* (1812) Coleridge adds the lines, "So vivid were the forms within his brain, / His very eyes when shut, made pictures of them" (*CPW* II: 842). These references are striking because they seem to take for granted the notion that the brain is the organ of thought.

Much later in his life, in an 1825 letter to a friend, he describes a particular thought that "struck across the Eolian Harp of my Brain" (*CPW* II: 1110). Originally composed in 1795, "The Eolian Harp" provides an enduring metaphor for the embodied mind some thirty years later. In a prose draft of "Youth and Age," written in September 1828, he describes "An air that whizzed διά ἐγκεφάλον [by brain] (right across the diameter of my Brain) exactly like a Hummel Bee" (*CPW* II: 1084). In

"Constancy to an Ideal Object," which was published in 1828 though the composition date is unknown, he addresses thought as "The only constant in a world of change" (3). Yet, this "yearning Thought! . . . liv'st but in the brain" ("Constancy" 4). Again, Coleridge indicates the embodied nature of thought and associates it with the brain. Even in *Biographia Literaria*, Coleridge asks, "And might not brains so wild and so deficient make just the same havock with rhymes and metres, as they are supposed to effect with modes and figures of speech?" (*BL* II: 81). Each of these passages assumes that cognition is an embodied process. While Coleridge does not believe that the body causes thought, he certainly recognises that the body is necessary to cognition.

Within the context of an embodied mind, the imagination serves as "the mysterious link between man and nature" (Willey 14). This link, however, begins to seem less mysterious in light of Coleridge's materialist influences. Given his understanding of the mind as embodied, we can extrapolate that the primary imagination, as the faculty responsible for "all human Perception," is also embodied (*BL* I: 304). Likewise, the secondary imagination, which is "an echo of the former . . . identical with the primary in the *kind* of its agency, and differing in *degree*, and in the *mode* of its operation" and the fancy, which depends upon association, are also embodied (*BL* I: 304). The analogy of "a small water-insect on the surface of rivulets" that "*wins* it way up against the stream, by alternate pulses of active and passive motion" shows us how the embodied imagination bridges the gap between the world of external objects and the subjective realm of the human mind (*BL* I: 124). The "two powers at work, which relatively to each other are active and passive" represent the sensory aspect of cognition, in which the mind gathers data from the external world and is inscribed by it, but also synthesises it in an active process (*BL* I: 124). Gathering data is not entirely passive, but it does involve the mind being

impressed by data from the outside world. The imagination synthesises these two powers, serving as an "intermediate faculty" that links the external to the internal (*BL* I: 125). This synthesis would, of course, be impossible if the imagination did not share some common property with the external world and, as we have seen, the common property between subject and object is materiality.

If the imagination links the human mind to nature, then emotion links the body and the mind also. The mind, through the coadunate power of the imagination, communicates with the body through emotion. Conversely, "the purest ~~feeling~~ Impulse can introduce itself to our consciousness no otherwise than by *speaking to us* in some bodily feeling" (*CN* II: 2495). Emotion, according to twenty-first-century enaction, is "a main link between the holistic homeostasis of the body and the workings of cognition" (Ellis 61). It is nothing less than that elusive mind-body connection. In his early poetry, Coleridge associates God with feeling, thus establishing a connection between mind and emotion. In *Religious Musings*, God is described as the "one omnipresent Mind" whose "most holy name is Love" (*RM* 105-06). Furthermore, this love "feeds and saturates" the "constant soul" (*RM* 108). Love, according to all the materialist scientists, is one of the two primary emotions associated with sensation. As Coleridge develops his theory, he asserts Wedgwood's discovery "that association depends in a much greater degree on the recurrence of resembling states of Feeling, than on Trains of Idea" (*CL* II: 961).[25] Initially, he saw emotion as dominating the cognitive process. First, "We *feel*," then "we perceive or imagine," then "we *think*" (*CN* II: 2382). Though Coleridge maintains that these are discrete processes, emotion could have indomitable power over cognition. "Images," he claims have "little Power . . . over Feelings or Sensation, independent of the Will—compared to the power of Feelings over Images" (*CN* II: 2600). To overcome

[25] It is likely that Coleridge came to this conclusion as a result of his friendship with Tom Wedgwood, who theorises that emotion drives the process association.

the lawlessness of association, Coleridge had to find a way to positively assert the power of the will, particularly over the cognitive domain.

According to Christensen, the imagination became the "epistemological and moral alternative to the tyranny of the association of ideas" (168). He argues that Coleridge fails in his attempt to discursively fix the free will in the *Biographia*. Though Coleridge successfully disrupts Hartley's Doctrine of Association by pointing out its inconsistencies, he does not offer a "positive, philosophical, and moral refutation" of associationism because the will defies definition (Christensen 94). Instead, according to Christensen, Coleridge offers the imagination as the mythical faculty that is able to apprehend transcendental truths. While Christensen's deconstructive argument is rhetorically compelling, in fact, Coleridge does not claim that the imagination can bypass material reality to see directly into the eye of God. His theory that the natural phenomena and the human ideas are symbols of God's law obviates any need to claim that humans can see beyond the natural world.

To understand the function of the imaginative faculty, we must recognise that the imagination is "understandable only within a context of an agency that embodies the processes involved" and this "agency," as Miall argues "can only be feeling" ("Emotion" 36). Agency, as twenty-first-century enactive research demonstrates, originates in emotion. The imagination obtains the power to organise and shape sense perception into comprehensible experience from its connection to feeling. In the early poetry and in the notebooks, the imagination is specifically linked to emotion. In "Dejection" the imagination is characterised as a "beautiful and beauty-making power" that infuses nature with feeling (63). It can make a heaven or a hell of the external world. "This Lime-Tree Bower" depicts the imagination's ability to transform the bower from a place of dejection to a place of holy joy. In the notebooks Coleridge claims that "Imagination . . . is Passion eagle-eyed" (*CN* III:

2112). Functionally, the imagination infuses situations with emotion by "modifying one image or feeling by the precedent or following ones" and "combing many circumstances into one moment of thought to produce that ultimate end of human Thought, and human Feeling—Unity" (*CN* III: 3247). Driving the imagination are

> the passions that modify these forms either actually, as in representations of ~~the~~ Love or Anger or other human affections; or imaginatively by the different manner, in which inanimate objects, or objects unimpassioned in themselves, are seen by the mind in moments of strong excitement. (*CN* III: 3246)

Elsewhere he states that "the Gift of true Imagination" is its ability "to reduce multitude into Unity of Effect, or by means of Passion to modify a series of Thoughts or Feeling" (*CN* III: 4115). The imagination, in this view, modifies and unifies experience by pulling it together under the coalescent influence of feeling.

The notebooks make evident what the *Biographia* elides. In the *Biographia*, the connection between imagination and emotion is most evident not in the discussion of the faculties of primary and secondary imagination, but in the literary criticism. Coleridge bestows the title of genius and poet on Wordsworth because of the "the union of deep feeling with profound thought" in his poetry (*BL* I: 80). Likewise, in his discussion of poetic genius, Coleridge claims that that "Sensibility indeed, both quick and deep, is not only a characteristic feature, but may be deemed a component part, of genius" (*BL* I: 43). This discussion in the *Biographia* recalls Davy's theory about the relationship between genius, imagination, and the capacity for deep thought.

Davy sees the imagination as the faculty of mind that unifies disparate perceptions into a cohesive and coherent account of the world. Furthermore, like

Coleridge, he holds that there is a direct correlation between great thought and deep feeling. He asserts that in order "to be capable of genius" the "sensibilities must be nourished so as to introduce sublime emotion" (RI HD/13/c 32). The account of imagination in the *Biographia* owes as much to the materialist theories of mind that Coleridge encountered as it does to German transcendentalism. Darwin sees the generative and shaping power of the imagination in literal terms. He believes that the imagination—or having certain ideas in mind—has a direct physical effect on reproduction. In both humans and animals, "the power of the imagination of the male over the form, colour, and sex of the progeny" is a key factor in determining the child's physiology (Darwin 340). In other words, the physical characteristics of a child are a direct result of the activity of the male imagination during copulation. Wedgwood also provided Coleridge with a plan for his abstruse researches of the early nineteenth century and stimulated his thinking about the relationship between association and emotion. Wedgwood believed that emotion directed all the bodily process, not just thought. Coleridge's notion of the embodied mind, which provides the foundation of his theory of imagination, is a product of his early enthusiasm for materialist cognitive science.

Retreat From Materialism

A product of his "hopeless middle years" the *Biographia* was composed "at the end of the most disconnected and opium-ridden time of Coleridge's life" (McFarland 41). In it, Coleridge presents himself as always having been a transcendentalist, even in his early years. By the time he was pulling the *Biographia* together he had experienced the loss of family, career, reputation, and poetic ability as consequences of his opium addiction. During the late eighteenth and early nineteenth centuries very little was known about substance abuse or the addictive nature of certain drugs. Opium was widely used both medicinally and recreationally

and excessive use was rarely identified as a problem. When overuse began to have negative consequence, as in Coleridge's case, "it was seen as a vice, or just a bad habit, not an illness requiring medical attention" (Berridge 69). Hence, his excessive opium use was viewed as a moral failing, both by himself and those around him. As early as 1803, it seems that Coleridge recognised that he had a problem. He equivocates about his use to those who were close to him, including Poole, Wedgwood, and Sara Coleridge. In letters written during this period, he claims to have "no craving after exhilarants or narcotics" (*CL* II: 917), yet in notebook entries written around this time he records using them to relieve uncomfortable physiological symptoms. By 1809 he reports that though he is

> forbidden by my medical attendant from trying again the desperate experiment of abandoning all at once that accursed Drug, into which the Horrors of Sleep antecedent to my ever taking it seduced me & to which the Dread of sudden Death (for the sake of my children) afterwards fettered me, yet I have, with a far greater endurance of severest Sufferings than I could have dared give myself credit for, reduced to a comparative trifle, less than one 20th part of my old doses. (*CL* III: 212)

This passage acknowledges that he is "fettered" by the "accursed Drug." Coleridge's desire to try "again the desperate experiment of abandoning" the drug and his willingness to undergo the pangs of withdrawal in order to reduce his use indicate that he sees quitting as a matter of mustering up sufficient willpower. His retreat from association and materialism, then, was driven not merely by theological concerns, but by his own embattled embodied condition. Given his physical dependence on opium and his inability to free himself from it, Coleridge had no

choice but to reject any theory that subjects the will to physiological processes. To accept the materialist hypothesis—even in its most Christian articulation—meant that he would never be able to overcome his opium habit, which he saw as a psychological rather than physiological problem.

As his addiction worsened, the desire to find a constructive philosophy became a dire psychological need. Rather than perpetuate the image of Coleridge as a fallen angel, recognising his rejection of materialism as a function of his addiction helps us to understand why he was so desperate to overthrow Hartley. To examine his theory of mind in light of modern cognitive theory necessitates an updated understanding of his addiction as well. Understanding the ways in which Coleridge's embodied condition—the pain and torment he suffered, along with the fear that must accompany such abject subjection to a physical substance—drove his philosophical explorations helps us to comprehend not just the fragmented nature of his work, but the great need to spin a particular narrative about his intellectual development. While it is true that all people are, in some respects, driven by material conditions, Coleridge exemplifies this reality. In the case of Coleridge, as for the rest of us, the material conditions do not refer merely to his socioeconomic and historical circumstances, but to the more personal circumstances of embodiment. We can make sense of Coleridge's vacillating philosophical positions, his rejection of materialism and associationism, and its lingering influence on his thought only by attending to the physiological along with the psychological and the philosophical.

Only by retaining a firm belief in human autonomy and the possibility of salvation by Christ could Coleridge hold onto the hope that he might someday break free from his debilitating condition. Thus, the faculty of imagination fulfils both a philosophical and a personal need for Coleridge. In developing a philosophy of mind, he needed a theory that did not subject the mind entirely to the causal laws of

nature, and therefore, to the Doctrine of Necessity. Yet, he could not entirely ignore the natural world and the discoveries that were being made by British empiricists. As many critics have noted, Coleridge required a philosophy that satisfied both his head and his heart, a common figure of speech in his notebooks and letters. He needed to formulate a system that honoured both the rational and emotional aspects of humanity and that reconciled the external world with a belief in the divine because each was a part of his lived experience.

He was dissatisfied with both Kant and Plato because they turned away from nature to focus solely on the subject. Coleridge "never rejected the external world" (McFarland 129). Instead he sought to reconcile the *es gibt* with the *ich bin*. Thus, he needed to formulate a philosophical system that honours the human need for abstract patterns and symbolic forms as well as the particularity of actual, embodied experience. Human beings, he recognised, live in the phenomenal world. His problem was to demonstrate logically and empirically that divine principles order the phenomenal world and that humans are capable of apprehending these truths. The imagination fills that need. It does not emphasise the "fracture between mind and nature" (Roe, "Introduction" 18), but provides the embodied mechanism that enables humans to connect with the divine. The primary and secondary imagination make possible human apperception of God's ordering truth.

Coleridge theory of mind is enactive in many respects. The idea that knowledge of God emerges from the coalescence of the subject and the object is an enactive concept rather than a transcendentalist one. Though God functions as an absolute and unconditioned being in Coleridge's theory, he attains meaning only through the relationship between the subject and the object, neither of which can exist without the other. Coleridge's defence of free will and human agency in the face of materialist accounts of biological determinism are similar to enactive accounts

that argue against the twentieth-century cognitivist theory that consciousness is an epiphenomenon and emotion is reactive. Under the superintendence of emotional motivation, human beings interact with the environment in a mutually co-dependent relationship in which both are altered by the exchange. From these actions emerge the embodied self, or the self that experiences consciousness on a moment-to-moment basis in the form of actions and emotions. The history of structural coupling with the environment gives rise to a pattern that can be understood in terms of a personality or a personal self. Synthesising and unifying all these aspects of being and knowing is the imagination, which is able to articulate lived experience into a higher-order narrative about what it means to be a human being and what it means to be a particular human being.

This concept of the embodied mind, which is present in his plays, the notebooks, the *Biographia*, and even his later poetry, reveals the persistent and ongoing influence of materialist theories of mind in Coleridge's account of imagination. Understanding his retreat from materialism in terms of his fear that Hartley was right allows us look beyond the narrative of philosophical progression to see how his theory attempts to bring "Finites, even the human Form . . . into connection with the Infinite" (*CN* III: 4498). In his attempt to mediate between materialism and transcendentalism, Coleridge formulated a theory of mind that has transcended the limitations of his historical era by its continued relevance in our own.

> Treatise after treatise has been written . . . theory has pulled down theory without end; and the gross contradictions which have marked the opinions of the greatest characters on the subject, might induce one to think that, even with respect to the *general idea*, we are still entirely at a loss.
>
> --John Thelwall

Chapter 5 Embodied Romanticism: Toward a Twenty-First-Century Theory

Despite the disorganised and fragmented nature of Coleridge's writings, both published and unpublished, Thomas McFarland urges his readers to "realize the intrinsically organic quality of Coleridge's erudition" (xxix). He argues that Coleridge, working within the German Romantic tradition, was a syncretic philosopher, who was trying to reconcile diverse philosophical approaches to the mind and the world into a single unified system. As such, his goal was to take the positive knowledge about the world that was available to him—both natural and human—and to integrate it into a theory that explains life from the perspectives of ontology, epistemology, ethics, aesthetics, and metaphysics. Such totalising systems have, since the twentieth century, been dismissed as hegemonic master narratives that perpetuate certain social relations and economic structures.[1] Yet, Coleridge, along with his peers, William Wordsworth, Humphry Davy, and Tom Wedgwood, sought precisely this sort of comprehensive account of reality. Initially, they had good reasons and intentions for doing so. Influenced by late eighteenth-century political radicals such as Joseph Priestley, Erasmus Darwin, and John Thelwall, they wanted to understand the nature of reality so that they could apply what they had discovered to an array of crucial human concerns. They wanted to unify existing knowledge into a comprehensive theory that accurately captures the truths that order nature, so

1 See Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge* (1979) for a discussion of the concept of the master, or grand, narrative.

that they could use them to create a just and equitable society. As the previous chapters have demonstrated, cognitive science was a significant to this project.

Romantic cognitive science offered insights into the human mind, the relationship of human beings to the natural world, and the relationship between mind and body that allowed Coleridge, Wordsworth, Davy, and Wedgwood to theorise about the issues that were of interest to them. These issues included aesthetics, free will, and the relationship between human beings and nature. In the late twentieth and twenty-first centuries, many of these same themes have resurfaced in discussions amongst cognitive scientists. As it turns out, there are numerous parallels between the British Romantic cognitive science debates and recent trends in the twenty-first-century. Contemporary cognitive science exhibits many of the same preoccupations as its Romantic-era predecessors. Specifically, enactionists rearticulate Romantic concerns by challenging the mechanistic theories of cognition formulated by twentieth-century cognitivists and behaviourists. Alan Richardson's definition of Romanticism, quoted in the introduction to this dissertation, applies just as well to twenty-first-century enactive theories of cognition, which are "advancing the claims of the body, reassessing the significance of the natural environment, emphasizing sensation and sensibility; [and] prizing development and growth" by asserting that the whole body and not just the brain is involved in cognition (*British* 34). Furthermore, these theories refute the notion that human consciousness is an epiphenomenon and explore its role in perception, along with other characteristically Romantic concerns. This concluding chapter examines the congruence between present day and Romantic-era cognitive science.

According to Kurt Danziger, it is "always possible to point to 'anticipations' of modern formulations in past historical periods" (184), but this approach is limited because it fails to ask why certain visionary theories failed to gain widespread

acceptance in an earlier period and why they have re-emerged in a subsequent era. Instead of simply pointing to parallels and resonances, it is important to interrogate the cultural conditions surrounding the discourse in order to understand the significance of these parallels. This examination must be conducted from two perspectives—the theoretical and the cultural. First, we need to ask what similarities in the two periods have given rise to such congruent theories. Second, we must examine the cultural conditions in which both sets of theories developed. The theoretical similarities in the discourse are significant, but they must be contextualised within the milieu in which they were produced. In this way, we can begin to understand some of the underlying causes and conditions to which cognitive scientists in both eras were responding.

The historical development of the science of the mind from the Romantic era through the mid-twentieth century has led to the formulation of contemporary theories of mind that resonate with the theories advanced in Romantic-era Britain. This history provides insight into the theoretical issues that preoccupy both Romantic and contemporary thinkers. In broad terms, both groups are responding to mechanistic accounts of the mind, such as associationism in the eighteenth and nineteenth centuries and behaviourism in the twentieth, which trouble common sense understandings of certain lived experiences. In other words, in both periods theorists attempt to provide correctives to cognitive hypotheses that ignore phenomenology. Following a condensed history of the science of the mind, I examine the theoretical similarities between the paradigmatic topics treated by the discourse in both time periods and the problems to which they respond. After the discussion of theoretical similarities, I suggest projects for additional research based. Finally, I attend to some of the cultural conditions that are similar in both eras.

The issues raised by cognitive science discourse in the Romantic era and now point to certain enduring themes that continue to be of interest, at least in Western Europe and North America. The Romantic poets had lofty aspirations regarding the democratic reordering of society and the relationship between social reform and art. They adopted the "Enlightenment values of truth, justice, and equality" (Michael 61) and grappled with the best way to implement these principles in society. These goals and values, as espoused by the Romantics, are worth continued pursuit, even as we adapt them in light of modern understandings of other cultural categories, such as race, class, and gender. Many of the ideals they expressed continue to be championed by those interested in finding ways to implement concepts such as social justice, political and economic equality, and the humane treatment of all people. John Michael argues that while the "universalist presumptions of the Enlightenment remain problematic . . . the Enlightenment remains one of the most important orientations for progressive politics that we have" (61). I agree, though I look to these values as they were modified, articulated, and extended by embodied Romanticism. The theories about how to implement truth, justice, and equality that were proposed by the poets and their colleagues are worth pursuing through contemporary research. I argue that the findings of twenty-first-century neuroscience and its attendant theories about cognition can provide important insights about human nature that should inform our approach to furthering the goal of humane social relations. In essence, I adopt a project that is similar to that which Wordsworth, Coleridge, and their contemporaries undertook when they sought to understand the human mind so that they could formulate theories of social reform.

Joel Faflak criticises "the dialogue between Romantic studies and the cognitive sciences" because he "remains ambivalent about this project's promise of enlightenment" (21). In an approach that combines praxis with theory, however,

enlightenment is not the primary goal. As recent enactive theories of cognition have made abundantly clear, knowledge is not an absolute, but emerges from biologically and culturally bounded interactions between subjects and objects. The goal is not some form of "neural rationalism, which" according to Faflak, "claims that the psyche, despite its darknesses, *can* be mapped and thus made visible" (22). Rather, recent advances in the area of embodied cognition can have practical application to theoretical concerns. The aim is to find practical solutions to real social ills, thus ameliorating both the biological and cultural conditions in which all sorts of organisms, human beings included, live. In the realm of literary studies, in particular, which continues to reel from having its foundations undercut by deconstruction and post-structuralism in the 1980s and 90s, the conversation between Romanticism and contemporary cognitive science offers a practical approach to literary studies that can help offset the debilitating influx of theory. The embodied approach to literature can make it not only more accessible to students, but can also help illustrate its fundamental significance to human concerns. It could provide a pedagogical platform that explores the function of literature (and art) as a necessary, rather than superadded, aspect of human experience.

I do not propose using the discoveries of twenty-first-century cognitive science to formulate a syncretic philosophical system that claims to definitively map out the structure of reality—such a project would contradict the premise of enactive theories of cognition as well as the insights gained by post-structuralism. Yet, contemporary cognitive research offers important insight into the very issues that concerned the Romantic poets and scientists. Modern cognitive science has made startling discoveries about the nature of cognition that corroborate many of the claims made by Romantic thinkers. Cognitive science continues to demonstrate that

late eighteenth-century theories were not far-fetched, but, rather accurate, despite the outmoded science used to support them.

The anachronistic imposition of C.P. Snow's two cultures onto the past has led to an inaccurate understanding of the relationship between scientists and poets during the Romantic period. It is time that we accurately understood the relationship between scientific theory and aesthetic concerns so that we can correctly assess the recent call by certain cognitive scientists and humanities scholars to reunite the disciplines and to formulate a pragmatic research programme that can address the concerns of progressive thinkers, both then and now. Just as the poets and some scientists applied their findings to philosophical questions that articulate the deep quandary of human life, so too should we use the findings of twenty-first century neuroscience to revisit and substantiate the social and aesthetic theories advanced by the Romantic poets. The questions and issues raised by Romantic thinkers continue to be relevant subjects for research—both literary and neuroscientific. It is time to reconnect the present with the past.

Parallel Processes

Many discoveries made in the Romantic era have shaped the development of the contemporary neuroscience. Furthermore, eighteenth- and nineteenth-century attitudes toward mind and matter have and continue to influence our present-day thinking. Beginning with Hartley's claim that cognition is an embodied process, Priestley's argument in favour of embodiment, and Darwin's addendum that cognition is not merely embodied, but also a biological process, we can see that though the science that supports these claims has changed dramatically the basic premise has been adopted into scientific circles as well as much of common culture, even if some people still maintain a belief in a soul that transcends the body after death. Similarly, like Davy, we now understand the mind in largely biochemical terms.

Finally, although theories of mind that resemble Wordsworth's and Coleridge's have only recently come into being with the rise of enaction, "the idea of the imagination, as understood in the Romantic period" is the same "as we still understand it today" (*Imagination* vii). The present view of the creative imagination was articulated and popularised by the Romantic poets, if even most people do not recognise its source. The Romantic contribution to contemporary understandings of the mind is greater than is often acknowledged.

A number of notable nineteenth-century physiologists, who were contemporaries of Coleridge and Wordsworth, though interested in establishing a brain-mind connection, were not interested in the corollary philosophical issues that interested the poets and the earlier men of science. They were not interested in the relationship between the subject and the object, how knowledge is created, or issues of selfhood, agency, and creativity. Instead, they wanted to understand the anatomical structures of the brain and nervous system. After the initial phase of cognitive science that was pioneered by Hartley and Priestley and furthered by Darwin, Davy, and Wedgwood, researchers in the science of the mind were primarily interested in "problems of nerve conduction, localization of function in the brain, and sensation" (Boring 133). In the area of neuroscience, for example, the celebrated researchers Charles Bell and François Magendie, after whom the Bell-Magendie law is named, independently discovered the distinction between the ventral (motor) and dorsal (sensory) nerve cords in the early nineteenth century.[2] Around the same time in the realm of psychology, Franz Joseph Gall and Johann Spurzheim, the founders of phrenology, studied the shape of the brain and skull in the interest of identifying and predicting personality traits. Later in the nineteenth century, John Stuart Mill, a

[2] Bell made the discovery around 1807 and published his findings in 1811 and Magendie, in France, published his work in 1822 (Boring 36).

proponent of associationism, influenced the development of materialist psychology in important ways.

Following the trajectory of British empiricism, which by this time had divorced itself from metaphysics and other philosophical concerns, Mill helped to codify objectivism by stressing "observational fact," which is ostensibly independent from the subjective mind (Boring 221). This phenomenalist approach eventually guided the development of logical positivism in the twentieth century and provided a foundation for behaviourist psychology. In the shorter term, however, Mill's inductive methodology, which abstracts concrete experience and specific examples into theory, supplied a rationale for the introspective approach to psychology that came into vogue and dominated experimental psychology in final quarter of the nineteenth century. Popularised by Wilhelm Wundt in 1874, the introspectionists thought that experience could be broken down into essential elements. Its subjects were asked to analyse their own experience and classify it according to this system. Eventually, however, introspectionism led to factionalism that caused psychologists to distrust phenomenology as a legitimate source of knowledge (Varela et al. 45). This state of affairs led to the rise of behaviourism.

Behaviourism is a school of experimental psychology that views organisms solely in terms of inputs (stimuli) and outputs (behaviour). Its goal was to "investigate the lawful relationships between inputs and outputs over time," while making "the organism itself (both its mind and its biological body) . . . a black box that was methodologically unapproachable" (Varela et al. 45). Behaviourism followed the precedent established by nineteenth-century physiologists who saw the brain as the seat of cognition, but believed "that the emotions have their seat in the internal organs" (Boring 58). William James furthered this view by defining "emotion as consciousness of bodily reactions" (McGill and Welch 100). According to the

James-Lange theory of emotion, emotion is a visceral response to external stimuli that engages the attention of the organism. Behaviourism, interested only in the relationship between stimulus and response, bracketed any consideration of not only emotion, but consciousness as well. Since the emotions are affiliated with the body, it too was of little interest to behaviourists. By the middle of the twentieth century, cybernetics—considered the precursor of modern cognitive science—came into being. These researchers met at the Macy conferences from 1943 to 1953 with the intention of establishing the study of the mind on more scientific grounds. Drawing on a computer analogy, cognitivism defined cognition narrowly in terms of symbol manipulation and the processing of inputs into outputs. As we have already seen, the enactive theory of cognition was developed in response to the cognitivist hypothesis, a product of the Macy conferences, and to behaviourist psychology.

This necessarily brief history of the science of mind as it developed from the nineteenth century through the present day provides the context for examining significant parallels between recent theories of embodied cognition and forgotten theories from the Romantic period. In previous chapters, I noted resemblances between specific theoretical propositions made by Romantic thinkers and contemporary theory, particularly when present-day theory usefully clarifies the claims made in the earlier era. Here, I examine the correspondences as part of a larger trend. There are several noteworthy points of comparisons to be made between the two sets of discourse, not least of which is the rhetoric they both use. Though it is worth noting, I do not discuss the linguistic similarities because my concern is with philosophy. Specifically, I examine the rise of Romantic cognitive science and the theory of enaction as responses to mechanistic accounts of cognition that invalidate crucial phenomenological aspects of human experience,

such as the experience of will, the sense of self, and the importance of consciousness to thought.

The Mechanical Mind

Though it is commonplace in Romantic scholarship to argue that in formulating their dynamic theories of imagination, Wordsworth and Coleridge were reacting against the mechanical theories of mind posited by British empiricists, this view of Romantic-era empiricism, as I have shown, is incorrect. Nonetheless, binaries are an easy and useful way to grasp opposing paradigms of thought. Yet, there are few easy binaries and the schools of thought that have dominated cognitive science are no exception. In some ways, however, just as the Romantics were responding to the mechanistic, Newtonian view of the universe that held ideological sway during the Enlightenment, so too are enactionists responding to the quasi-mechanistic cognitivist theories that enjoyed (and, in the popular view, still enjoy) hegemony throughout the twentieth century. It is useful to examine these movements as reactions against the dominate paradigms, as Romantic scholars have done with the theories of imagination. Nonetheless, it is also important to acknowledge the nuanced shift from one paradigm to the next and the ways in which the displacing theories draw on, use, and modify the existing ones. While binaries help us to understand important differences in these theories, we must also recognise how newer theories build on and extend the older theories they reject.

The significance of Hartley's work is that he applied the theories of Newton to Locke's theory of mind in order to produce a detailed physiological account of cognition. His work was radical because he used Newtonian science to explain a phenomenon that had long baffled philosophers and because he irrevocably linked the body with the mind through a set of embodied processes. Employing an empirical methodology and combining it with new discoveries in physics, Hartley

produced ground-breaking but ultimately limited work. Making use of Hartley's advances, Romantic scientists adopted his basic premise that cognition is an embodied process in order to formulate theories that account for certain phenomenological aspects of cognition that Hartley's account fails to explain satisfactorily, if at all. They sought dynamic models of mind that take into account subjectivity and biology.

Darwin, for example, agreed that cognition must be governed by the laws of motion, just not the laws of physics. Thus, he formulated a theory of organic motion that treats cognition as a subcategory. The primary distinction between organic and non-organic matter, according to Darwin, is the propensity for self-motivated activity. His pioneering work in biology hones Hartley's theory by bringing greater specificity to the classification of cognition as a material phenomenon. He places it within the taxonomy of physiological activity, thus plausibly narrowing the definition by confining it to beings capable of exhibiting sentience. Darwin's account offers a more active account of the embodied mind than Hartley's, but remains inadequate from a phenomenological perspective. In *Observations on Zoonomia*, Thomas Brown notes and objects to the limitations of this theory, particularly the "limited freedom of the will" that Darwin posits (*OZ* 238). Drawing on Darwin's work, Davy and Wedgwood each sought to formulate theories of mind that account for aspects of thought as experienced by real human subjects.

Davy furthered Darwin's work by bringing in phenomenology and chemistry. He was at pains to explain these two phenomena in particular. First, he wanted to formulate a theory of mind that takes into account the experience of thought as an active process. Generally, people have a sense that they are able to assert some control over cognition and that thought is not an entirely passive process. Second, he hoped to account for genius, or those moments of inspired creativity in both the

sciences and the arts. Influenced by Wordsworth's poetry, Davy connects genius to ostensibly transcendental experiences, such as the sublime. Using his experiments in chemistry to theorise a materialist, embodied account of mind, Davy takes emotion and imagination into account, though of course, not as fully as Wordsworth and Coleridge do.

Working along a separate trajectory, Wedgwood based his theory on introspection. An uncritical proponent of associationism, Wedgwood used Hartley's and Darwin's work to formulate a hypothesis that would better explain the subjective nature of experience, in general, and perception, in particular. He attempted to integrate his predecessors' theories into his own as he argued for the primacy of emotion in perception and cognition. In each of these instances, the theories produced do not neatly reject Hartley's Enlightenment model of mind; rather they work it into more nuanced theories that better capture the phenomenological reality that the mind is not simply a *tabula rasa* onto which sensory data and experiences are etched.

In many respects, enaction follows a parallel process. While it rejects many of the implications and conclusions of cognitivism, it nonetheless draws on the advances it has made, most especially in the field of neuroscience. Yet, enaction is a response to the limitations of the cognitivist hypothesis as well as to the binary between structuralist and deconstructionist epistemologies. Like Wordsworth and Coleridge, who attempt to mediate between materialism and transcendentalism, enactionists do not entirely reject either approach out of hand, but retain insights from each as they attempt to forge a middle way that accounts for both biology and culture. Enaction, however, starts by addressing those aspects of cognitivism that are most problematic.

As human beings we often experience ourselves as embodied autonomous agents who interact with an environment, are able to make and act on decisions, and have fairly consistent personalities or senses of self. Two of the most important facets of our existence that drive experience are consciousness and emotion. We are defined by the fact that we are aware of our surroundings, other beings in our environment, and, above all, ourselves. Furthermore, we spend most of our lives saturated with feeling, that is, the conscious experience of emotion. Whether we wish to acknowledge it or not, the fact is that our lives and our beings are largely dominated by emotions, which are biochemical processes that inform us about our interactions with the environment and guide our decision-making, often on a subpersonal level. The theories of cognition that were in place by the end of the twentieth century, however, had bracketed consideration of these two aspects of human experience. Instead, they concentrated exclusively on the relationship between stimulus and response, inputs and outputs. Consequently, until the emergence of enaction, cognitive science had produced impoverished theories that focus mainly on symbol manipulation, computational processes, and representational mapping of external events against internal reactions. The result has been a cognitive science that "denies what is most immediate and direct—our everyday, immediate experience" (Varela et al. 12). This branch of science has become increasingly disconnected from the fundamental realities of lived human experience.

Similar to Hartley, cognitivists have ignored the phenomenological aspects of human mentation. Yet, where Hartley was concerned with at least some aspects of human experience, most notably religious experience, twentieth-century scientists have deliberately overlooked the elements that make up the bulk of human intentionality. Following the behaviourists, they bracket emotion and consciousness

and consider them inconsequential to cognition. While cognitivists adopt a structuralist view of the external world, they simultaneously adopt the post-structuralist view of the self as a narrative fiction. In essence, they combine some of the worst facets of each epistemology. Cognitivists embrace an objectivist view of the environment that assumes reality exists in the external world independently of consciousness. They also eliminate the notion of a cohesive self. In this picture, an organism is nothing more than a series of subpersonal processes that interact with a pre-given world in order to gather and process data about it. In the common metaphor, it is a computer that is fed inputs, parses them into symbols it can manipulate, transforms the symbols into a map of the environment from which it received the stimuli, and only incidentally has any impact on its surroundings. With respect to the phenomena that structure and give meaning to our experience—consciousness, self-consciousness, emotion and feeling, and the sense that we are relatively unified beings capable of acting on our environments—cognitivism deems them epiphenomena, useless by-products of the core cognitive processes.

By claiming there is no necessary relationship between consciousness and cognition and by positing the lack of a unified self, cognitivism denies the existence of free will, along with a whole host of other phenomenological categories that give human life meaning. Having eliminated anything that ontologically resembles a human being, cognitivists further condense the organism into a set of cognitive processes that occur within an organic computer processor. Not only do they ignore phenomenology and human intentionality, they also disregard the role of the body in cognition and the specific constraints and affordances of our perceptive apparatus. In a sedulous effort to avoid Cartesian mind-body dualism, which entails substance dualism, these cognitive scientists conflate mental activity with neuronal events. This "reduction of mind to brain" results in "the reduction of body to brain" (*Cognitive* 5).

In the cognitivist paradigm, the brain functions metonymically for the entire body. In the end, cognitivism could be classified not simply as post-humanist or even anti-humanist, but deeply anti-human.

Of course, actual scientists who have accepted the cognitivist hypothesis would not see themselves in those terms. Varela and his colleagues note that the implications of these discoveries cause anxiety in those who have articulated them. For instance, in *The Society of Mind* (1988) Marvin Minsky "argues that although there is no room for a truly existing self in cognitive science, we cannot give up the conviction of such a self" (Varela et al. 107). Similarly, the idea that human beings lack free will causes considerable discomfort amongst those very scientists who deem it an illusion, especially in relationship to ethics and morality. Though cognitivism ostensibly demonstrates the non-existence of freewill, Jonathan Moreno, for example, asserts that "self-determination is possible to a sufficient degree perhaps only because we *will* it to be so—because it corresponds to the subjective experience, the phenomenology, that we have about being deciders" (39). In other words, like the self, freewill exists as a fiction simply because we feel it exists. Like Coleridge, cognitivists are uncomfortable with the implications of their theories, but at least Coleridge set out to prove the existence of the concepts he held dear. In the end, cognitivists ask us to knowingly participate in a version of reality that they have exposed as a lie. The "logic of such a predicament leads inevitably to a condition of nihilism" (Varela et al. 143). They urge us to believe in a self that has the capacity to act, despite their claim to have proven biological determinism.

The various iterations of enaction have been formulated in response to the conundrum presented by cognitive theories that straddle structuralism and post-structuralism and ignore the subjective experience of mentation. Enactionists believe that cognitive science should be pragmatically informed by human experience. In

many respects, this call for a theory of mind that takes phenomenology into account mirrors the motivation of Romantic thinkers, Wordsworth and Coleridge most especially, to formulate a theory that avoids the solipsism of transcendentalism and the reductionism of materialism. Enaction not only seeks to bridge the gap between structuralist and deconstructionist epistemologies, but to take the most important features of both, bring actual human experience to bear on them, and formulate a theory that reconciles the findings of neuroscience with the lived experience of human beings.

This is not, however, to say that enaction returns to the anthropocentric focus of the Enlightenment. Again, in a manner very similar to Romantic thinkers, enactionists look at cognition in terms of structural limitations and affordances within both the organism and the environment. This twofold structural approach allows them to define cognition broadly enough to encompass all organic beings in their theories. Like the Romantic theories of mind discussed in this dissertation, enaction is a response to mechanistic theories of mind that represent advancements in the field, but ultimately fail to explain satisfactorily—or intentionally ignore—important facets of the human cognitive experience. Yet, it draws on the progress made as a result of and since the Macy Conferences. Likewise, Darwin, Davy, Wedgwood, Wordsworth, and Coleridge sought to formulate theories of mind that drew on Hartley's and Priestley's important breakthroughs in the science of the mind while also attending to important facets of the phenomenology of thought. In the following pages, I take a closer look at each of the theoretical constructs mentioned above.

Selfhood, Agency, and Free Will

The Western philosophical tradition, by and large, is founded on the notion of a free and autonomous self who is able to make choices, moral decisions, and

ethical judgements unhindered by external constraints. This "unitary conscious self" serves as "the locus of rationality and will" and its job "is to evaluate incoming sense data, classify it, and enforce appropriate conclusions and behaviorial decisions" (Slingerland 38). One fundamental philosophical assumption that grounds this tradition is the existence of a unified cognising subject who is endowed with free will. Not only did Plato believe in the individual, immaterial, transmigrating soul, but the Christian concepts of temptation, sin, and redemption are based on the ability of a person to choose freely between right and wrong, salvation and damnation. In his meditation on the nature of the human mind, Descartes asserts that the "proposition *I am*, *I exist* is necessarily true, every time I express it or conceive of it in my mind" (103). This declaration of the *Ego sum, ego existio* is perhaps the best expression of this sense of stable, cohesive self around which all experience coalesces and from which all intelligence proceeds.

Human beings who were born into and have lived under this tradition generally experience themselves as having a relatively constant self that serves as the centre of a coherent point of view and finds expression in the personality. Furthermore, we tend to think of ourselves as free and autonomous beings, who are able to make choices about our lives that are as insignificant as the decision to raise an arm (or not) or as momentous as the decision to get married, settle down, and have children (or not). For the most part, philosophically and phenomenologically, there seems to be an "I" who is running the show. This concept of the autonomous subject is crucial from the perspective of ethics, morality, and metaphysics and their offshoots, religion and politics.[3] For, without such a subject there can be neither agency nor free will and in the absence of these things notions of good, evil, choice,

[3] While religion and politics might be the last place one would look for ethical and moral behaviour, the Romantic poets and men of science alike make plain—with their obsession with revolutions, new social orders, and the rights of man—that ideally all human concerns should be organised on ethical and moral principles, especially religion and politics.

and social responsibility become increasingly difficult to conceptualise let alone implement. Hence, these issues are important beyond the purely speculative realm of the thought experiment, but bear directly upon the formation of a just society—an interest that was shared by many Romantic thinkers, particularly those who were interested in cognitive science.

Despite their centrality to the Western tradition, these concepts of unified subjectivity and freedom of choice have been questioned periodically throughout history. During the Romantic period, at the same time that new governments were being founded on the principles of democracy, or the concept of self-governance by individuals possessed of inalienable rights, the materialist theories of mind advanced by Priestley and Darwin were undermining the concept of free will. In fact, cognitive science in the Romantic period as well as in the twentieth century has been instrumental in questioning and destabilising common conceptions of the self as a free and undetermined being. By making cognition dependent upon material factors—whether purely mechanical, as in Hartley's and Priestley's theories, or biological, as in Darwin's—the early British materialists eliminate free will by making the formation of the human subject completely dependent upon association. Hartley's theory ineluctably leads to the Doctrine of Necessity, which states that "each action results from previous Circumstances of Body and Mind" (Hartley I: 500). Similarly, cognitive scientists in the late twentieth-century, building on the cognitivist hypothesis, have determined that the unified self and the existence of free will are illusions.

In many ways Coleridge's response to these materialist theories mirrors the enactive response to cognitivism. Just as he attempted to reconcile free will with scientifically sound accounts of cognition, so have twenty-first-century enactionists worked to demonstrate that there is room for self and agency within contemporary

cognitive theory. In some ways, though, the eighteenth-century materialist theories that Coleridge reacts against also anticipate enaction. The enactionist definition of agency, for example, very closely resembles Hartley's definition of popular or practical free will. Priestley, too, offers a description of the self that is similar to the embodied accounts of selfhood offered by enactionists. Of course the two sets of discourse do not map neatly onto one another, but the likenesses and preoccupations of each are similar enough to merit closer analysis. Coleridge's philosophical objections to materialist theories of mind resemble the issue enactionists take with cognitivism at the theoretical level. Yet, aspects of these theories resemble enaction because the materialists, unlike the cognitivists, continued to take the phenomenology of thought into account even as they tried to formulate a physiological account of cognition.

While thinkers such as Hartley, Priestley, and Darwin did not intend to destabilise the notion of a unified human subject, their theories tend toward that conclusion. Their work implies "a split or fragmented subject, cognition in the absence of volition or supervision, and the subtle and pervasive influence of bodily processes" (*British* 45). These scientists took for granted the existence of a unified human subject. They did not, however, view it as autonomous and in challenging the notion of free will they inadvertently undermine the very premise on which it relies—the self-governing individual. Given the religious orientation of Hartley and Priestley, this seeming disjuncture has a certain logic. If salvation is in the hands of God, individual freedom of will is unnecessary, but since salvation happens to individuals a unified self is required. As millenarian religious optimists, they found no incompatibility between the idea of an individual self who would eventually reunite with God but lacked free will.

In *Observations on Man*, Hartley does not explicitly discuss the concepts of selfhood or identity. It is clear, however, that he assumes the existence of a unified self. In his discussion of madness, he claims that "Violent Passions" arise from an "Increase of Vibrations" that "appear to affect Self with the peculiar interesting Concern supposed to flow from personal Identity" (I: 398). This statement presumes that "personal Identity," or personality, flows naturally from the self. Madness, however, is not a disorder of the soul, but the result of frenetic neural vibrations that resonate throughout the body. His description of madness implicitly links selfhood with embodiment. He asserts "that violent Fits of Passion . . . must, from the Nature of the Body, often transport Persons, so that they shall not be able to recover themselves, but fall within the Limits of the Distemper called Madness" (I: 299). Though Hartley provides a materialist explanation of madness that implies the existence of an embodied rather than transcendental or immaterial self, he has no interest in challenging the traditional view of the self as a unified being. Yet, claiming that the formation of the subject depends entirely upon environmental factors Hartley indirectly undermines commonly accepted ideas about the self. His Doctrine of Vibrations posits an embodied subject that is not autonomous, but determined by external circumstances.

Priestley, too, had no intention of overturning the concept of a relatively stable sense of self, which he believed would be resurrected in the end times. His direct discussion of "the idea of self," however, not only destabilises the notion of a unified self, it also prefigures enactive definitions (*Disquisitions* 88). His goal is to demonstrate how the concept of selfhood continues to be valid within the materialist system. According to Priestley, selfhood can be defined as "the *sameness and continuity of consciousness*" experienced by cognising subjects as well as by those who know them (*Disquisitions* 159). He compares the self to a river that

"though the water be continually and visibly changing, so as not to be the same any one day with the preceding . . . may be called, to every real purpose, the *same river* that it was a thousand years ago" (*Disquisitions* 157-58). According to this analogy, despite inevitable physiological changes, like a river, the self has some degree of conceptual stability. This definition is reminiscent of Ellis's "overall motivationally directed stream of consciousness" from which a relatively stable pattern emerges that is experienced and recognisable as a personality (136).

According to Hartley, Priestley, and Darwin, selfhood is a function of consciousness; it is nothing more than a complex idea that is made up of a conglomeration of multiple sensory impressions. Hartley attributes the sense of self to "that Consciousness which accompanies our Thoughts and Actions, and by which we connect ourselves with ourselves" (I: 390). In this view, we experience ourselves as unified because we have awareness of ourselves as thinking, feeling, and acting beings, which results in an abstract idea of ourselves. According to the materialist definition, abstract or complex ideas are nothing more than amalgamation of sense data. Darwin describes selfhood as "the idea of our own person" (93). Priestley argues that the term "*Self*, denotes that substance which is the seat of a particular set of sensations and ideas" that make up the abstract entity experienced as "I" or "me" (*Disquisitions* 88). According to both Priestley and Darwin, the self comprises, in part, sensations that have been synthesised into a cohesive notion.

There is also an embodied component to the self. Priestley distinguishes between "*the identity of man*," which is the embodied self, and "the *identity of person*," or the personality. This distinction mirrors Ellis's separation of the embodied self from the personal self. According to Priestley, the embodied self is how others recognise us, even in the face of severe mental illness or brain damage. There is a continuity of physical appearance, which persists even if the continuity of

consciousness is disrupted. Despite physiological changes such as ageing, “a man would claim his wife, and a woman her husband, after more than a year's absence” because they still recognise each other (*Disquisitions* 158). The embodied self is not recognisable by physiological features alone, but also by habit, posture, and other physical tics. Darwin theorises that “Our identity is known by our acquired habits or catenated trains of ideas and muscular motions; and perhaps, when we compare infancy with old age, in those alone can our identity be supposed to exist” (92). This embodied self provides the foundation for the personality.

In contemporary enactive terms, the embodied self “grounds specific subjective states in specific embodied actions” (Ellis 138). It is the experiencing “I.” That is, it experiences the phenomenal world through its interactions with it, while the personal self “weaves the various subjective states into a personality structure” (138). Together these two aspects of self, which are based on embodiment and consciousness, form a unified subject. Selfhood is not a characteristic of an immaterial soul, but rather the accumulated bundle of habits—both mental and physical—that people acquire over the course of a lifetime. In order to prove that the self is not an immaterial entity, Priestley and Darwin theorize that the experience of self is based in the body, on awareness of our bodies, and on awareness of ourselves as cognizing subjects.

Their account of selfhood draws on assumptions that are based on the experience of having a self. When it comes to autonomy and free will, however, they disregard phenomenology altogether. Hartley, Priestley, and Darwin all claim that the “Consequence” of the materialist theory of cognition “is that of the Mechanism or Necessity of human Actions, in Opposition to what is generally termed Free-will” (Hartley I: 500). For Darwin, this was simply a biological fact that did not seem to trouble him. Hartley and Priestley, however, needed to address objections to their

theories that were made on the basis of faith and morality, that is, the Miltonic argument that faith and salvation are meaningless if not freely chosen. In this view, human beings must be free to choose between right and wrong. Yet, as religious necessitarians neither Hartley nor Priestley saw the lack of free will as a problem. In this respect, they differ from twentieth-century cognitive scientists who realise their theories entail biological determinism but are not comfortable with this implication.

According to the Doctrine of Necessity, nurture rather than nature determines the formation of human character. Hartley addresses this issue by distinguishing between philosophical and popular free will.[4] He claims that while human beings do not have philosophical free will, we do have free will in a practical sense. This difference reflects the twenty-first-century distinction that enactionists make between free will and agency. According to Hartley, a human being does not have the power to cause motion. In Ellis's terms, this simply means that there are no "physically uncaused events, or 'contracausal freedom' in the philosophical sense" (189). Human beings are not responsible for prime causation nor do physical events have metaphysical causes. A human being does, however, have "the Power of doing what a Person desires or wills to do, of deliberating, suspending, choosing, *&c*" as a consequence of the physiological structure of the body (Hartley I: 501). In other words, the human body is organised to permit a certain level of choice. Hartley calls this popular or practical free will; enactionists call it agency.

As a proponent of Hartley's theory, Priestley also espouses necessitarianism. In *The Doctrine of Philosophical Necessity* (1777), published as an appendix to *Disquisitions*, Priestley situates the Doctrine of Necessity within a theological framework that mitigates the need for free will. In his view, as well as Hartley's, the humankind's destiny has already been determined by God, as revealed in the

[4] See Chapter 2, "Animating the Body," for a fuller discussion of this distinction.

scripture. According to Priestley, God's divine "plan required *general* and *ultimate happiness*, though necessarily attended with . . . evils" (*Necessity* 176). In other words, the human frame is organised to move toward felicity even though it suffers hardships. As human beings evolve toward happiness, they also move toward God until eventually all human beings reunite with their creator. Ellis describes this drive toward greater felicity as the drive for homoeostasis plus well being. Though he does not claim that human beings are moving toward God, he argues that they, along with all other organisms, are self-organised not only to maintain life, but to move toward improved conditions of existence, toward thriving rather than just surviving. The resemblance, however, ends here for, where Hartley and Priestley see it as part of divine will, Ellis argues that this drive is a function of agency. For this reason, the absence of free will did not trouble these religious optimists because in their view all human action inexorably leads toward the apocalyptic reunion promised in the bible.

Overall, though, the materialist notion of a determined or fragmented self that lacks free will is counterintuitive to the experience of most people living under Western philosophical and ideological systems. Thus, it failed to take hold—at least until cognitivism, in conjunction with post-structuralism, once again challenged the notion of a stable, fixed self that is endowed with free will. Even with God presiding over the evolution of humanity, the abolition of free will raises problems that are similar to the issues discussed by twenty-first-century cognitive scientists when they consider the notion of free will. Religious thinkers such as Coleridge objected to the limitation of free will because it absolved one of moral culpability. That is, it relieves criminals, wrong-doers, and sinners of responsibility for their actions. Issues of salvation and damnation aside, however, this account of free will raises important questions for the justice system. If all actions are ultimately determined by external circumstances and environmental conditioning, how can criminals be held

responsible for their actions? The successors of cognitivism, “behavioural neurologists” as Richardson calls them, ask similar questions (“Cognitive” 551).

Because they make such uneasy bedfellows, the relationship between post-structuralism and mid-twentieth-century cognitive science is interesting and complex. Even though they represent different epistemological and ideological approaches to knowledge, their theories are compatible with respect to the question of self. The cognitivist hypothesis emerged in the 1940s and 50s in the heyday of objectivism and its corollary, structuralism. Objectivism is the philosophical position that “assumes a fixed and determinate mind-independent reality” (Johnson xxi); structuralism privileges structure over function. In other words, objectivism conceives of truth, knowledge, and meaning as existing in the external world irrespective of human (or other cognising) beings and understands perception and cognition as a process of mapping the objective world internally in order to process information that exists “out there.” Structuralism focuses on the anatomical or organisational features of a system, examining how the elements of a system work together to abstract the laws that govern its behaviour. This emphasis on objectivity and structure led to a rejection of subjective, that is scientifically unverifiable, phenomena. In the early history of contemporary cognitive science, “'objective' was associated with being scientific, whereas 'subjective' was a code word implying that one had fallen into a morass of unquantifiable feelings that might be magnificent but were certainly not science” (Hayles, *Posthuman* 54-55). Cognitivism is firmly based on the core objectivist and structuralist assumption that universals exist.

Post-structuralism, on the other hand, is a “reaction against the sort of unreflective, culturally myopic, naïve Enlightenment realism” characterised by the objectivism “that dominated the Academy” in the mid-twentieth century (Slingerland 74). It encompasses the work of Jacques Derrida, Michel Foucault,

Jacques Lacan, and the many theorists who have developed their work into incisive and necessary critiques of entrenched sexism, racism, homophobia, and other systemic social prejudices. Broadly defined, post-structuralist epistemology holds that knowledge, meaning, and intellectual categories, in general, are unstable. It argues against the existence of universal truths. Post-structuralists view these truths as "indefinite, groundless inventions [that] result from and reflect arbitrary configurations of ideas;" they are arbitrariness with no "ultimate arbiter" (Christensen 29). With respect to the self and human subjectivity, post-structuralism challenges the objectivist notion of a unified, conscious self. Based on the work of Derrida and Lacan, it sees this self as a fiction. The human subject, in this view, is a social construct consisting of tensions between a host of conflicting and contradictory claims about the world.

Yet, despite the fundamental ideological differences between cognitivism and post-structuralism, the work done by cognitivists has done much scientifically to substantiate this understanding of the human subject as fragmented, at best, and non-existent, at worst. Guided by the cognitivist hypothesis, the work done by behavioural neurologists toward the end of the twentieth century has led to the conclusion that the experience of a unified self is an illusion. Studies by scientists as various as Antonio Damasio, Rodney Brooks, and Michael Gazzaniga have demonstrated that "there is no single region in the human brain equipped to act as such a central theater" (Slingerland 39).[5] Neuroscientists cannot seem to pinpoint a spot in the brain that serves as the locus of the self. Instead, they have found that the "concerted action of large-scale systems" synchronise "sets of neural activity in separate brain regions" and create the illusion of self (Damasio, *Descartes* 95). In *The Feeling of What Happens* (2000), Damasio refers to these collections of distributed

[5] See Slingerland, pp. 39-42, for a discussion of a number of studies disproving the neurological basis for the concept of a unified self.

neurons that process memories as convergence zones, a term that highlights the unfixed and transitory nature of consciousness and self. Based on these experimental data, those situated within the cognitivist tradition claim "that there is probably not . . . the kind of central, universal representational format" that a unified consciousness "would need to function" (Slingerland 40). In other words, the brain does not produce a single, unified representation of the external world required for a single, unified being to act on the data. This determination has led to the conclusion that such a self, despite phenomenological and experiential data, must be a fantasy.

Furthermore, while neuroscience has found no spot in the brain that maps against a self, it has found decision-making activity that occurs in the brain before conscious awareness. By viewing brain activity on an MRI, experimenters can tell, for example, if a person is going to raise the left or right arm before the test subject knows. Beginning with Benjamin Libet's work in the 1980s cognitivism suggests that conation, or volition, is an "illusion and not the actuality of free will" because "our brains know our decisions before we become conscious of them" (Gazzaniga 187). Patricia Churchland asserts that "in all instances . . . behavior is *caused* by brain events. At the level of the neuron and the neural network, the brain is a causal machine" (182). Twentieth- and twenty-first-century cognitive scientists, however, do not discuss free will in theological terms as Hartley and Priestley did. Instead, they consider it from the perspective of personal responsibility, social responsibility, and legal liability.

At first glance, it appears that Hartley, Priestley, and Darwin were right. Free will is a myth; but, where these scientists were comfortable with the idea that human beings lack free will, contemporary cognitive scientists are not. They are uncomfortable with the idea that free will is an illusion and worry about the impact

of their findings on the justice system.[6] After all, if all actions are biologically determined, then how do social responsibility and legal culpability figure? Despite their conclusions, behavioural neurologists try to wiggle out of the consequences. Gazzaniga, for example, argues that "the brain plays a critical role in deciding whether or not to act" even if this decision is generally made "before we know about it" (188). The impulse to act or refrain from action originates in the brain though it occurs before the organism experiences this urge as a conscious decision. Likewise, Libet suggests that there is a brief (300 millisecond) space between the brain's decision to act and the action's execution (Gazzaniga 187). He speculates that this gap gives the conscious self time to decide whether or not to act. V.S. Ramachandran calls this phenomenon "free won't" (*Tell-Tale* 129).

The problem, of course, is that these conclusions are no more palatable in the twenty-first century than they were in the eighteenth and nineteenth centuries. Furthermore, while the conditions of life have changed drastically in the past two hundred years, the phenomenology of cognition has remained remarkably similar. That is, even as we recognise the constraints and limitations of a variety of factors—the environment, biology, social conditioning, upbringing, etc.—human beings still generally feel as if they have some element of control over their actions, both large and small, just as they experience a fairly cohesive subjectivity. Enaction starts with a fundamental recognition that there must be some validity to the phenomenological cognitive experience and asks why it is there and what role it plays in the neurobiological processes. Consequently, it begins by asking why human beings have a persistent sense of self, why we have a sense of agency, and why we continue to experience and think of ourselves as autonomous beings, despite the findings of cognitive science and post-structuralist theory.

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[6] For more information about the current debate regarding free will see "Free Will, Moral Reasoning, and Responsibility," section IV in Glannon. See also Wegner.

Naturally, the responses from enactionists vary. Varela, Thompson, and Rosch, the founders of the enactivist approach, though they ask these questions, accept post-structuralist theories regarding the lack of self. They advocate for neuroscience to turn to traditions other than Western philosophy. Specifically, they turn to Buddhism, which has long claimed there is no stable self, and argue that phenomenological experience should be considered within a methodological approach of mindful meditation and self-awareness rather than the introspectionism of earlier Western tradition. They advocate for brain science to consider the phenomenological data gathered through Buddhist meditation practices, an undertaking some neuroscientists have adopted.[7] Later enactionists, however, argue that there is an embodied basis for the unified sense of self that most mentally healthy people experience. Furthermore, this self is not simply a narrative or social construction, but takes its origin from a real, physiological phenomenon.

Drawing on recent neuroscientific research, Ellis argues for the neurobiological basis of the embodied and personal selves discussed above. For Ellis, the concept of agency and selfhood are inseparable. Underlying the more sophisticated senses of self is the "core self," or the "very primitive agentic" self that "is rooted in the PAG and upper brainstem" (Ellis 133). The significance of the core self is at least twofold. First, it demonstrates that organisms—humans included—have a very basic level of agency. Second, it provides an embodied locus for the self, contrary to the claims by Damasio and others noted above. Agency, according to Ellis, is as simple as "the ability to move rather than just be moved" (133). One of enaction's central premises is self-organisation or the process by which an organism dynamically "maintains itself through continuous exchange of energy with the environment, in other words, through maintaining metabolism" (Jantsch 65). Self-

[7] See, for example, David R. Vago's work at the Harvard Medical School Brigham and Women's Hospital Functional Neuroimaging Laboratory.

organising systems are necessarily active rather than reactive because they are constantly making adjustments and taking action to preserve and maintain themselves as living organisms. This extropic life wish, as Ellis calls it, enables organisms to own their actions.[8] While these actions are not always willed, at least not in the sense of being caused by a mental decision, they nonetheless originate in the body and are initiated by an organism with a subjective interest in maintaining and enhancing its life. At the most basic level, this primitive agency and neurobiological self provide the basis for extrapolating a unified subject that is neither illusory nor fictional.

Gibbs, too, posits a self based on embodied cognition. Like Priestley's distinction between the identity of man and the identity of person, selfhood is based partly on the body and partly on an organism's interactions with its environment, including other organisms (people, animals, plants, etc.). Gibbs notes that “a 'person' is constituted by a human body, but a 'person' is not identical to his or her body” (*Cognitive* 15).[9] He argues that contrary to the traditional Western philosophical belief that “human bodies are separate from the external world,” in fact our sense of self should be “understood and scientifically studied in terms of organism-environment mutuality and reciprocity” (16). Selfhood, in this view, results directly from the interactions an organism has with its environment. It is not solely contained within the body, but neither is it separate from the body as in dualism. Instead, it arises from the biological and environmental affordances and constraints imposed by the human body and its surroundings.

[8] Extropy is “the tendency of some complex self-organizing systems to prefer higher- over lower-energy basins of attraction” or, in simpler terms, the drive for homoeostasis plus well-being mentioned above (Ellis 79).

[9] Gibbs is describing the conclusions of philosopher Lynne Baker, whose work he marshals in defence of his concept of an embodied self.

The significance of these descriptions of the self is that they are grounded in notions of autonomy, agency, and to an extent, free will. Enactive definitions of agency, again, resemble eighteenth-century materialist definitions of practical free will. Darwin, for example, claims that “To will is to act in consequence of desire; but to desire means to desire something, even if that something be only to become free of pain” (274). Darwin’s definition highlights the ability to make decisions that maintain or improve one’s ontological conditions. He also situates agency in relationship to the environment. Enactionists shy away from discussions of free will per se because they are uninterested in engaging in debates about causation and metaphysics. Instead, they are interested establishing the existence of an autonomous, self-organising system that is capable of taking willed action in the interest of, at the very least, self-preservation. For Varela, Thompson, and Rosch, autonomy is the ability to selectively focus on only those elements in the external world that are relevant to an organism's self-perpetuation. Autonomy has nothing to do with the concept of self for these theorists, but refers to how an organism is able to perceive, process, and respond to the environmental data that are somehow important to it. From these self-selected percepts, the organism enacts the domain of significance that helps to establish its persistent identity over time. Their main focus is on an organism's ability to actively interact with its environment rather than passively responding to it like an automaton that has no choice but to process force-fed inputs and to produce outputs in response.

Ellis expands on this notion by arguing that organisms exhibit motivated attention. Motivated attention is the phenomenon by which organisms bring environmental data to the level of conscious awareness based on its relevance to them. They are capable of enacting consciousness, he argues, only if they have some degree of agency. The most primitive form of agency is the ability to “act to

appropriate and regulate their own components, rather than being merely the random summation of the behavior of the components, in passive reaction to other components or external inputs" (Ellis 189). Contrary to cognitivists who claim that behaviour is dictated by neuronal events that occur below the level of consciousness and, therefore, beyond the scope of agency, enactionists argue that organisms exhibit the ability to take action based on choices aimed at preserving themselves as self-organised systems. This exhibition of agency forms the basis for selfhood in organisms both simple and complex.

In short, enaction seeks to "reconcile micro-level physical causation with the motivational determination of action" (Ellis 189). The enactionist response to cognitivism mirrors Coleridge's response to eighteenth-century materialist theories. Coleridge developed a theory of mind in response to the threat that Hartley's, Priestley's, and Darwin's work posed to concepts of self, agency, and free will. As we have seen in the previous chapter, Coleridge's theory is best understood as enactive, particularly in the way that it conceives of selfhood, in his defence of free will, and his recognition that there are unconscious processes involved in cognition. Just as enactionists accept certain cognitivist findings while rejecting their conclusions—after all, the fact that behaviours are preceded and caused by neuronal processes, at least in part, cannot be ignored—Coleridge incorporated many elements of materialism into his transcendentalist system. The limits of this comparison, however, only go so far. As we have seen, the terms of the debate regarding free will have changed and the enactionist concept of agency is more like Hartley's practical free will than Coleridge's philosophical definition of free will. In other ways though, the enactionist response to cognitivism has broad resonances with Coleridge's professed rejection of materialist theories of cognition. Both are interested in demonstrating that selfhood, autonomy, agency, and free will—in the sense of an

organism's ability to make and own its choices—are compatible with scientific accounts of cognition.

While enactionists acknowledge the existence of neuronal processes, they reject the conclusion that human beings or any other cognizing organism are mere passive reactors to environmental stimuli—either external or internal. By starting with the autopoietic premise that organismic systems are self-organised, enactionists posit agency in the form of self-motivated action. While they seek to avoid philosophical problems such as the notion of a physically uncaused event, they nonetheless seek to restore a scientifically grounded phenomenology to our understanding of the cognitive processes. With respect to selfhood, agency, and free will (or motivationally determined action), their goal is to demonstrate that these core features of human intentionality are not mere epiphenomena, but an integral part of human (and non-human) cognition. In this way, they reflect the rich Romantic tradition of cognitive science represented by Hartley, Priestley, and Darwin as well as Coleridge's response to them.

Consciousness, Emotion, and Embodiment

For centuries, cognitive science has ignored certain fundamental aspects of the human cognitive experience. Three phenomena, or facts of human existence, however, unavoidably shape the phenomenology of thought. Consciousness, embodiment, and the capacity for emotion define the cognitive experience from the phenomenological perspective. Historically, Western philosophy has privileged consciousness over embodiment and emotion, making it the starting point for all explorations and definitions of thought. More recently, with the rise of cognitivism in the mid-twentieth century, even consciousness has been displaced as a core feature of cognitive processing. Instead of being viewed as fundamental to human cognition, embodiment, emotion, and in recent years, consciousness have been relegated to

the realm of the inessential. The problem with ignoring any of these three phenomena is that we end up with theories of mind that are at odds with actual human experience, which has created at least two major problems. First, in the past these theories have been used to justify the systemic oppression of certain groups of people. Second, in the twentieth century they have invalidated entire spheres of human activity, most notably the arts. These theories have not remained uncontested, though. Another fascinating commonality between Romantic-era and contemporary cognitive discourse is the way in which they challenge prevailing cognitive theories and reunite science with phenomenology.

Historically, these skewed Enlightenment (and pre-Enlightenment) theories have been used to define intelligence in ways that invalidate types of knowledge that fall outside its narrow boundaries. The definition of thought in terms of "reason, language, and logic" (*British* 152) has justified the exclusion of many classes of people from the category known as human. For example, "children, idiots, savages, and the grossly illiterate," not to mention women, have generally been lumped together and opposed to those who exhibit real thought (Locke 25). This taxonomy excludes types of knowledge derived in ways other than abstract logical and mathematical argumentation. When confronted with radically different types of cultures in Africa or the Americas, for example, one common response was to declare its inhabitants savage because they did not conform to the European Enlightenment ideal of a liberal, humanist subject.[10] Richardson argues that Romantic thinkers challenged this form of universalism by proposing a "timebound and biological universalism that . . . grounded 'primary' human features in the body, the material organization of the mind, and in the emotions" (*British* 152). Likewise, abolitionists argued for the humanity of slaves on the basis that they, like Europeans,

[10] See Locke's *Essay Concerning Human Understanding* and Thomas Hobbes' *Leviathan* (1651) for paradigmatic examples.

experience pain because they have feelings. By challenging prevailing theories of rational, disembodied cognition, the Romantic scientists and poets participated in a movement to expand the definition of subjectivity to include many previously dispossessed groups.

In the modern era, the lack of attention to consciousness, embodiment, and emotion has resulted in a deep schism between scientific articulations of the world and the way human beings actually understand and experience it. Cognitive scientists such as Patricia Churchland "argue that our self-understanding is simply false" (Varela et al. 13). Regardless of personal experience and common sense understandings of ourselves and the world around us, they believe that cognitive scientific explanations supersede what we think, feel, and presume to know about reality. This gap is particularly problematic because scientific ideology has become dominant in the twentieth and twenty-first centuries. Its hegemonic standing grants it the authority to determine what we, as a culture, value. More pragmatically, the emphasis on science has affected school curricula, funding priorities, and other similar matters. Cognitive science, in particular, has gained ascendency in the past few decades and its influence can be for the ill or for the good. By devaluing the role of human insight in the interpretation and construction of reality, cognitivism has deepened the gap between the sciences and the humanities. Consequently, essential human activities such as art and literature have come to be seen as inessential to the business of social advancement, which is being defined in increasingly narrow terms.

Clearly, it is troublesome that some of the most interesting, important, and pleasurable aspects of being human have been labelled unnecessary by-products of the "real" cognitive functions. With the emergence of the enactive theory of cognition, however, consciousness, embodiment, and emotion are being revisited and examined in light of their role in cognition. Just as the materialist and enactive

theories of cognition proposed by scientists and poets in the Romantic period confronted the prevailing attitudes toward embodiment and emotion, so enaction contests the cognitivist view of consciousness, embodiment, and emotion. This challenge has the potential to heal the schism between cognitive theories and human self-understanding, between science and the humanities, and to open up areas of research that could have immensely fruitful and pragmatic results. By reassessing these three crucial phenomena, enactive theory examines what many human beings most value about sentience. The first of these is consciousness.

Western philosophy has generally considered consciousness the foundation of human cognitive abilities. It has, in fact, been prized as the distinguishing characteristic that separates humanity from the rest of the natural world. Philosophers from Plato to Descartes and beyond have viewed consciousness as the most important aspect of the human experience from which all logical thought flows. It was even, according to Descartes, the only way we could really be sure that we exist: I think, therefore, I am.[11] The Romantics did not question the centrality of consciousness to both cognition and human experience, but they also did not believe that all cognition occurs at a conscious level. Attending to its role in perception and sensation, they challenged the notion that knowledge and consciousness always occur together. In this respect, as many scholars have noted, they laid the groundwork for Freud and subsequent psychoanalytic notions of the unconscious. Yet, they also bear some resemblance to twentieth-century cognitivists, though they do not go so far as to declare consciousness irrelevant to human thought.

Hartley, Priestley, Darwin, Davy, and Wedgwood all use the term consciousness fairly consistently to mean awareness, particularly of sensation. Wedgwood sums up this definition in his assertion that "*Consciousness* . . . is an act

[11] This formulation is not directly stated in Descartes' *Meditations*, but is the canonical summation of them.

of Attention" (WM E40-28451 41). For these men, as for Wordsworth, the mind was formed of two types of experiences—conscious and unconscious. In the former, perception occurs because the subject is aware of "*the operation of external objects upon the ordinary senses*" (WM E40-28452 19v). In the latter, sensation occurs without the subject's awareness but is stored in the body to be accessed and transformed into perception at some later time. Consciousness and perception are, to an extent, conflated in this view because perception results from conscious awareness of sensation. Priestley defines it as "nothing more than the power of *simple perception* or our consciousness of the presence and effect of sensations and ideas" (*Disquisitions* 83). In other ways consciousness also functions similarly to Coleridge's primary imagination. Hartley refers to the "connecting Consciousness" that synthesises sensation, pulling it together and unifying it into a cohesive understanding of experience (I: 391, 392, 400). The theories of these men conceive of consciousness as a physiological phenomenon that depends upon and cannot be separated from the body. These two points in the materialist treatment of consciousness are perhaps the most important propositions to emerge from their consideration of this phenomenon. Furthermore, though they recognised the significance of unconscious cognitive processes, the British empirical materialists did not dismiss the importance of consciousness out of hand.

This is not the case with twentieth-century cognitivists. In the modern era, as cognitive science grew up alongside of computer science under the canopy of cybernetics, the founders of this new discipline wanted to establish a science of the mind that distanced itself from the phenomenological approaches, which they deemed pseudo-scientific. They were not interested in cognition as a human experience, but in understanding the flow of information within closed but interactive systems. They applied the same definition to computer systems and

human minds. According to Norbert Wiener, one of the founders of cybernetics, the mind is “an organized system” that “transforms a certain incoming message into an outgoing message, according to some principle of transformation” (14). This definition allowed researchers to formulate a methodology that studied objectively verifiable inputs and outputs without recourse to personal experience. Concerned with “the construction of information as a theoretical entity,” early cognitive scientists sought to understand “(human) neural structures . . . as flows of information,” the operations of which could be observed and described based on its outputs (*Posthuman* 50). With respect to this goal to discover and quantify the abstract processes that cause and control cognition, consciousness was irrelevant both methodologically and as a measure of cognitive ability.

According to Hayles, the founders of enaction upheld a version of this view of consciousness. Advocating a Buddhist approach, Varela and his colleagues consider “consciousness . . . as a cognitive balloon that must be burst if humans are to recognize the true nature of their being” (*Posthuman* 156). Later enactionists, however, disagree with this approach and regard consciousness as crucial to cognition. In an effort to bridge the gap between scientific and phenomenological understandings of the mind, enactionists have returned to the study of consciousness, but from a different perspective. Not only have they determined that consciousness plays an integral role in how sensory information is processed, they also see it as a crucial phenomenon that lends insight into how the mind and body interact. Ellis argues that consciousness “can never result from the afferent processing of perceptual inputs alone” (2). In other words, consciousness is not a by-product of operations that parse stimuli, but the result of the efferent, or out-going, action of the nerves.

Perceptual processing occurs differently when it happens at the unconscious level. Sensory data that are processed when we are not consciously aware of them are not "processed as fully as [they] would be if we were conscious" of them (Ellis 48). In this view, consciousness significantly affects cognitive processes. According to Gibbs, consciousness enables organisms to become aware of action affordances in the environment. It allows us to effectively interact with our surroundings by drawing attention to those features that we can best manipulate in order to further our goals. Though he is not an enactionist, Damasio argues that consciousness "opens the way for knowledge and reason, which, in turn, allow individuals to discover what is good and evil" (*Spinoza* 172). From this perspective, consciousness is the starting point for morality and, therefore, the formation of social systems. It is necessary not just to cognition, but to successful interaction with the world around us.

Gibbs, in particular, emphasises that consciousness is a function of embodiment. It is neither an attribute of the immaterial soul nor the by-product of some neural subroutine. Rather, it is the intersection between an organism's interaction with its environment and its subjective experience. Consciousness is "at the heart of the mind-body problem," for consciousness is the mental awareness of one's bodily actions in a particular environmental milieu (*Cognitive* 262). It is here that the view of Romantics and enactionists converge. In contradistinction to the traditional dualist view, Romantic empirical materialists postulate that consciousness like all mental operations is a result of embodied, physiological processes. While they call attention to the vast array of mental processes that occur outside the realm of consciousness, the Romantics never lose sight of the actual, lived experience of human cognition and the fact that consciousness makes up one of the largest parts of intentionality. They pave the way not only for psychoanalytic views of the

unconscious, but also for contemporary notions of the cognitive unconscious.[12] Yet, they never called into question the significance of consciousness to cognition, but like enactionists were able to hold a space for both conscious and unconscious mentation.

As with consciousness, cognitivists also placed emotion into an impenetrable black box. A noted emotion theorist, Damasio explains the rationale behind this approach: cognitivists "thought that feelings were impossible to define with specificity, unlike objects you could see, hear, or touch. Unlike those concrete entities, feelings were intangible" and, therefore, "out of the scientific picture" (*Spinoza* 4). Consequently, the relationship and role of emotion and feeling in cognitive processes were completely disregarded in early cognitivist research. Hayles notes "that cognitive science, with its computational approach to the mind, has largely ignored the fact that feelings even exist" (245). Thus, the discussion of emotion amongst cognitivists is scarce. One notable exception is Ray Jackendoff, who speculates about the representational schema that emotions might take within the computational mind.

According to Jackendoff, the brain creates a three-dimensional representation of the body before a human being has an emotional response to external stimuli. Thus, he speculates that lower-order emotions such as pain must require "some intermediate level of representation" that is connected to this body representation (299). Emotions, he argues, have no spatial location within the body and therefore "simply belong to the 'self,' whatever *that* is" (299). Jackendoff devotes very little space to the discussion of emotion in *The Computational Mind*

[12] Along with the recent interest in the role of consciousness in cognition, there has been a revival in studying the role of unconscious processes. Cognitive psychologist John F. Kihlstrom asserts that "nonconscious mental structures and processes are psychologically important" (1445). This new view of unconscious mentation is often referred to as the productive unconscious. Thanks to Markus Iseli for pointing out this rich area of study that is a companion to the recent research in consciousness.

and his sneering attribution of them (note his use of italics) to the mythical self reveals the low premium placed on them within the cognitivist tradition. Another example is Daniel Dennett, who subscribes to the intentional systems theory, which "maintains that intentional states are the product of interpretation" and are not therefore "natural states to be found and measured by natural sciences" (DeLancey 471). Jackendoff also claims that emotional experience has "no counterpart in primary experience," but belongs only to reflective experience (5). In this view, higher order emotions are not hard-wired into the neurological system, but are derived from the more basic ones. They are not "primary" in the sense that they are not a product of immediate sensation, but are, like consciousness, an overlay to the essential cognitive mechanism.

Ellis calls this view reactive, as opposed to enactive. In the reactive view, higher order emotions are conditioned responses, while the simple emotions are unconditioned. That is, basic emotions such as fear, anger, or joy are spontaneous reactions to environmental stimuli while the more complex emotions are learned responses. The reactive view assumes that emotion is always a response to some stimuli. Emotion theory, beginning with the James-Lange Theory, is "often formulated as if emotional responses could be purely reactive rather than originally initiated by the active expression of the organism's endogenous self-organized purposes" (Ellis 62). In more recent formulations, this is known as the "interrupt theory" of emotion (see Simon).[13] Enactive theory argues that emotion is the motivational force behind a self-organised system's drive to maintain its homoeostatic pattern of self-initiated activity. In this view, emotion leads to action. According to the research cited by Ellis, emotional activity occurs in the brain before

[13] The "interrupt theory" was developed by Herbert A. Simon in the 1960s in the context of artificial intelligence in computers. According to this theory, central nervous system processes are disrupted by environmental stimuli that cause a change in emotional state and, consequently, a change in an organism's goals and behaviors.

consciousness or action occurs. Thus, emotion directs consciousness and brings perceptual attention to those environmental details that are most relevant to the organism's needs and requirements. Robinson explains that an

> emotional response is a *process* in which a physiological response caused by an affective appraisal fastens attention on events in the (inner or outer) environment that are very significant to a person's (or animal's) survival and/or well-being, and prepares the person (animal) to deal with this situation. (58)

This affective appraisal is a quick assessment of a situation that is followed by a more complex cognitive judgment after the stimuli has been deemed emotionally relevant to the organism.

This theory of directed attention closely resembles the theories of mind advanced by Wedgwood, Davy, Coleridge, and Wordsworth. As we have already seen, where Ellis argues that "emotion and motivation ground all other forms of consciousness, including perceptual consciousness" (43), Wedgwood and Coleridge theorise that emotion drives association. That is, objects and events are not necessarily linked together through a linear spatio-temporal process or "the one law of time," but by emotion (*BL* I: 96). Furthermore, according to Wedgwood, emotion motivates action. He claims that "Feeling is <as much &> *no more* the cause of Muscular motion, as the latter is of the former" (WM E40-28451 12). Though he uses the term "feeling," which in contemporary discourse refers to conscious awareness of emotional states, Wedgwood refers to processes that happen unconsciously. For Coleridge and for Davy, emotion was also the driving force behind genius, or those moments of inspired, original thought. Davy thought that for human beings "to be capable of genius," they "must be nourished so as to introduce sublime emotion" (RI

HD/13/c 32). The capacity for heightened emotion, in this view, is essential to great thought.

Ellis likewise argues that "not just affective states, but in fact all our conscious states are driven by emotion and motivation, because our interest in looking for potentially valenced environmental conditions is a precondition for attention and perception as well as thought" (216). Though Ellis does not specifically address the inspired, creative thought to which Davy refers, he points to the fundamental relationship between emotion and thought in general. Emotion directs our attention to the environmental factors that will help us achieve our goals. The connection between genius and emotion leads to the connection between emotion and imagination found in Coleridge's notebooks. Coleridge saw emotion as an essential connector between the mind and the body, much as the imagination mediates the transcendental and materialist realms. In *The Prelude*, Wordsworth emphasises the importance of emotion in memory, particularly the momentous spots of time.

Wedgwood, Davy, Coleridge, and Wordsworth were responding to the theories proffered by Darwin and Hartley regarding emotion. Darwin posits motory action induces emotional states. For example, imitating the facial expressions or bodily posture of another person allows the observer to experience the same emotion. In essence, this proposition is very much like the James-Lange Theory, which asserts that "emotion is the result, and not the cause, of bodily changes" (Boring 503). Darwin saw the capacity for feeling as an important aspect of organic being. In *Zoonomia* and *The Botanic Garden*, Darwin claims that lower-life forms, including molluscs, plants, and insects, exhibit responses to external stimuli that resemble human emotion. By claiming that feeling also initiates action, Wedgwood

extends Darwin's claim and asserts an even greater role for emotion in the overarching scheme of cognition.

In the foundational text of Romantic cognitive science, Hartley claims that "all the Senses may be considered as so many kinds of Feeling" (I: 11). In Hartley's theory, feeling is roughly equivalent to the basic emotions identified by twentieth- and twenty-first-century emotion theory. All feeling, in this view, takes its origin from the fundamental sensory experience of pleasure or pain. When Hartley asserts that ideas are nothing more than feelings, he is arguing that all mental events correspond to and are caused by external stimuli. Yet, though he equates feeling with sensation he also argues that higher order emotions originate in sensation. The terms "feeling" and "emotion," particularly in Romantic-era discourse, are sometimes conflated in ways that can be confusing. For this reason, Wedgwood clarifies the terms by defining feeling "<invariably> implying *a consciousness of some change in my being*," while emotion is "*the change itself without consciousness*" (WM E40-28452 19v). These definitions are similar to contemporary distinctions made by emotion theorists. In enactive theory, emotions are embodied biochemical processes that "tell us that we are being facilitated or thwarted in the complex patterns of activity that our total self-organizational organisms want to execute" (Ellis 9). Feeling, on the other hand, is conscious (or almost conscious) awareness of the affective tone of an emotion. Emotion happens at the bodily level, while feeling implies awareness of what is happening in the body. Emotions are significant because they link the status the body to the workings of the mind. In both Romantic and contemporary enaction, they help solve the mind-body problem.

It may seem strange to accuse cognitivists of not accounting for the body in their theories because they take a materialist approach, but this is precisely their mistake. While they do not violate the laws of physics by claiming that the mind

exists separately from the body, they conflate the brain and body in such a way that the brain functions metonymically for the whole body. Guy McKhann, for example, claims that “higher-brain functions . . . confer our properties of humanness such as communication and awareness of our environment and responses to it” (324). In this view, not just cognition, but humanity itself is a function of the brain. The cognitivists' error is a logical outgrowth of the early cognitive science programme of research and its guiding principles. The view of mind produced was particularly appealing to those who hoped to understand cognition in mathematical terms. Cognitivists regarded the computer analogy as particularly apt because “the information content of data and programs (especially those written in high-level languages) can be stated independently of physical instantiation in any particular computer” (Jackendoff 15). Of course, cognitivists would not deny the necessity of some physical substrate to support the computational process, but whether this substrate is an organic brain in a body, in a solution of preserving liquid, or the artificial circuitry of a silicon based computer chip is irrelevant. In the cognitivist view, human beings are little more than “a brain in a vat (the cranial cavity) nurtured by cerebrospinal fluid and blood and bombarded by photons” (Ramachandran, “Vat” 4). The body, in this view, is an oversized container for the brain, which is the locus of all the real cognitive action. The main problem here is the reduction of all mental acts to specific brain states.

Increasingly, evidence suggests that the human body is essential to cognition and not just as a vehicle for gathering sensory data. The body, according to recent research, processes data into mental events along with the brain and neurological system. Cognition is not simply a matter of computation, but of taking action within an environment even if that action is limited as in the case of individuals with bodily impairments. Enaction theory is based on the ideas that perception is guided by

embodied action and that cognitive structures are shaped by actual actions taken by an organism. This view of cognition speaks not only to the role of the body in perception, but also to the relationship between the subject and the object or the percipient and its environment. In the enactive view, perception is driven by the bodily structure of an organism. Structural determinism enables and constrains the types of cognitive acts and experiences of any given organism as well as what it can and cannot perceive. Furthermore, all self-organised, autonomous systems choose to interact with and pay attention to the aspects of the environment that are most relevant to their well-being. As they move through their worlds—whether that world is a Petri dish, a mountain top, or twenty-first-century cityscape—they not only enact a domain of significance by focusing on those details that are most significant to them, they also continue to develop the cognitive structures that allow them to receive information from, make decisions about, and act upon their environmental milieus. This emergent and mutually dependent relationship between organism and environment occurs both ontogenetically and phylogenetically.

Recent research has borne out this theoretical approach to understanding cognition. Researchers into embodied cognition (who may or may not identify as enactionists) are showing that an organism's structural affordances and constraints play a greater role in basic cognitive functioning than has previously been recognised. One of the best examples of the relationship between cognition and embodiment is in the field of language and linguistics. In the late 1980s, arguing against linguistic objectivism, Mark Johnson claimed that language, one of the most seemingly abstract cognitive functions, actually arises from embodied experience. According to Johnson the entire structure of human thought, and its verbal expression in language, emerges from the experience of living in a human body. In Johnson's view, thought and language are inherently metaphorical and relational.

They start with the pre-linguistic felt-sense of the source domain and extrapolate verbal expressions from there. An obvious example is the expression “striking,” where “PHYSICAL APPEARANCE” is understood in terms of “A PHYSICAL FORCE;” for example: He has the most striking blue eyes (Johnson 7). In an example such as this, the connection between being physically struck by an object and staggering back from the blow and describing a person’s eye colour in terms of this embodied experience is readily apparent. The same principle applies, however, in the case of more abstract concepts, such as modal verbs. While verbs such as “such as *must*, *may*, and *can*, find their home in the domain of reasoning, argument, and theorizing,” they are also based on the physical experiences with force (53). They derive from incidents such as being externally compelled to take some action (must), being pushed to the ground or being enabled to take an action because one's way is not blocked (may, can).

Not only does this theory of embodied language greatly resemble Darwin's and Wedgwood’s theories of language as well as Davy's concept of abstract ideas, discussed in the second chapter, but it is being substantiated by research in embodied cognition. For example, Lawrence Barsalou and Katja Wiemer-Hastings have conducted experiments demonstrating that concepts as abstract as “truth” take their origin from the body. They argue that these concepts are not solely metaphorical, but “direct experience of abstract concepts appears central to the content” (Barsalou and Wiemer-Hastings 133). In other words, the subjective experience of a concept such as “truth” can only be understood in light of previous experiences of being told true or false statements and determining their veracity. Darwin, likewise, argued that concepts such as “benevolence” could only be understood based on prior situations involving a governess, tutor, parent, or the like. If understanding even the most abstract ideas depends upon our particular

embodied experience, it is clear that the body must be implicated in other aspects of cognition as well. Wedgwood argues that just as "It is commonly said that we *act* from *idea*—I say, the converse is equally true—we have *ideas* from action" (WM E40-28451 12). Indeed, drawing on a wide array of experimental research, Gibbs argues that every aspect of cognition depends upon the whole body, not just the brain. Consequently, perception, cognitive development, and other phenomenological experiences such as personhood, emotion, and consciousness result from situated embodied action within a local environment.

This emphasis on localised situations within a specific environment conceives of the relationship between the subject and the object in ways that are very similar to Romantic theories. Where cognitivists assume an objectivist *Weltanschauung*, enactionists do not see the world as having certain pre-given structures or features that organisms perceive and represent on a mental level. Knowledge emerges from the mutually co-dependent relationship between the subject and the object. Likewise, the materialist theories of mind advanced in the late eighteenth and early nineteenth centuries saw human beings as part of the natural world rather than separate from or above it. This is, in part, how they explain the human ability to perceive and understand their environment. In both cases—enaction and Romantic-era materialism—the revised relationship between the percipient and the perceived is crucial to their explanation of cognition. In the hands of Wordsworth and Coleridge, this new relationship between people and nature was transformed into a re-conceptualisation of the relationship between the subject and the object.

The relationship between the subject and the object is an important consequence of re-evaluating the role of the body in cognition. The enactive approach engenders philosophical shifts that not only move away from the

objectivism of structuralism and the nihilism of deconstruction, but also mirrors the philosophical positions of Wordsworth, Coleridge, and in some respects, the materialist theories of mind advanced during the Romantic era. According to Richardson, despite the widespread critical view that Romanticism enacts "a flight from Enlightenment universalism toward an obsession with difference and diversity," Romantic thinkers did in fact posit "human universals," often on the basis of embodiment (*British* 152). This embodied universalism, in his terminology, is one of the fascinating intersections between Romantic-era cognitive science and contemporary enaction. By acknowledging and studying consciousness, emotion, and embodiment—the three basic attributes that define human experience—enaction has the potential to help find the line between biology and culture. For, regardless of mental abilities, bodily abilities, and cultural, class, or sex differences all human beings share these three commonalities: consciousness, the capacity for emotion, and embodiment.

These characteristics are shared universally across the species even as their concrete instantiations in specific eras, locales, and cultures vary. All cognitively active people (that is, not in a coma), exhibit consciousness or some level of awareness of their environments and themselves—even those who have been labelled cognitively impaired or disabled. Likewise, no matter how diminished (as in the case of sociopaths) all people have emotion even as our capacity for feeling differs. Finally, despite obvious physical differences, including people who have one or more missing or improperly functioning parts, everyone has a body. The basic structure of this body is similar across any number of culturally constructed categories, such as gender, race, and disability. These three facets of human existence significantly determine the type of world we perceive and societies we construct. While it would be naïve to pretend that these shared features can erase all

differences—either biological or culturally manufactured—they do provide a basis, as Richardson argues of the Romantic-era science of the mind, for extending "human belonging and mutual comprehension beyond the limits set by an earlier era's governing paradigm" (*British* 180). Recognising fundamental similarities in cognitive structure amongst members of the species *Homo sapiens* provides a springboard for a variety of research projects that could ultimately benefit humankind by giving us insight into how to best structure social institutions and society as a whole.

Future Research Projects

This question of how to structure society, the relationship between mind and matter, and role of emotion and imagination in the formation of knowledge was taken up by the next generation of Romantic poets and scientists, particularly Percy Bysshe Shelley and William Lawrence. One area of research, then, falls within the purview of Romantic studies. Shelley was well-versed in scientific knowledge. His childhood education was characterised by observations of natural phenomena and experimentation. Picking up where Thelwall left off, the debate about materialist and transcendentalist theories of life exploded in 1817. John Abernethy, a lecturer at the Royal College of Surgeons, delivered a series of lectures on anatomy that defended John Hunter's theory that life is a principle superadded to the human body.[14] Two years later, William Lawrence, a younger lecturer, responded with an incendiary lecture refuting Hunter's view and attacking Abernethy.[15] Lawrence argues that both life and sentience are functions of organisation. In his lecture entitled "Functions of the Brain," he further argues that, "in a word, all the manifestations called mental or intellectual—are the animal functions of their appropriate organic apparatus, the

[14] Abernethy published these lectures a few years later under the title *Physiological Lectures, Exhibiting a General View of Mr. Hunter's Physiology, and of his Researches in Comparative Anatomy* (1822).

[15] Lawrence also published his lectures, along with a series of talks on anthropology and race theory, in *Lectures on Physiology, Zoology and the Natural History of Man: Delivered at the Royal College of Surgeons* (1819).

central organ of the nervous system" (95). This debate "was perhaps the most public and specific manifestation in England of the age's preoccupation with the phenomena of life" (de Almeida, *Keats* 64). According to Levere, the vitalism debate between Lawrence and Abernethy inspired Coleridge's treatise *Theory of Life*, which was composed around the same time and published posthumously.[16] As in the late eighteenth century, this debate continued to have political and religious implications. Materialists such as Lawrence openly supported the French cause and argued for the separation of science and religion as they strove to create a neutral zone for the pursuit of science, which they wanted to be free of ideological, political, theological, and metaphysical concerns. Abernethy, on the other hand, believed that those in the medical professions had a responsibility to uphold the moral order within society. As with contemporary autopoietic theory, the Abernethy-Lawrence debate centred on the problem of how to "account for the differences between living and nonliving bodies" (Levere 46). Thus, it had philosophical as well as political dimensions that attracted the attention of the Romantic poets.

Given their similar political and theological positions, Percy Bysshe Shelley was drawn to the radical, materialist scientist. He and Mary Shelley were friends with Lawrence and occasionally consulted him about medical issues. Some critics even see Lawrence as a significant influence on Mary Shelley's *Frankenstein* (1818).[17] The vitalism debate certainly influenced Percy Shelley's thought, particularly in the essay fragments "On Life" and "On Love," which were both written in 1819 (see Ruston). Eventually, Shelley incorporated the ideas expressed in the two unfinished essays into the posthumously published *A Defence of Poetry* (composed 1821, pub-

[16] Levere notes that the exact period of composition is unknown. While it is likely that it was composed around the time that Abernethy and Lawrence were debating in their lectures, it could also have been written around the time their lectures were published, that is 1822-23.
[17] Anne K. Mellor, for example, argues that he serves as "one of the models for Professor Waldman" (178). See, also, Marilyn Butler's edition of *Frankenstein* (1993).

lished 1840). Like his poetic predecessors, Shelley's theory of mind seems more closely aligned with enaction than materialism or transcendentalism. His conception that the mind modifies the sensory data to produce its perception of environmental stimuli, an idea expressed in "On Life," foreshadows twentieth-century enaction theory. In *A Defence of Poetry*, Shelley asserts that the natural order is predicated on the "relations of things," which he denotes as "the true" and "the beautiful" (1073). The true is "the good which exists in the relation subsisting . . . between existence and perception" (1073). It is the space in which meaning arises. Ontology and epistemology, in this view, are enacted by human consciousness as it interacts with the environment. Life exists in the intersection between objects of sense (both internal and external) and human perception of them. The beautiful, then, is "the good which exists in the relation subsisting . . . between perception [of 'the true'] and [its] expression" (1073). Like Gibbs, Shelley claims that knowledge exists not in the world, nor in the perceiver, nor in culture, but in the intersection of mind, environment, and society.

An exploration of the younger Romantics' relationship to nineteenth-century cognitive science would make a valuable topic for future research (see Richardson, *British* 114-150; Jackson 165-196). Tracing the connection between materialist theories of cognition and the philosophy and poetry of these younger Romantics would allow us to more fully understand the relationship between literary and scientific Romanticism in the later part of the period. This topic is of particular interest because, as I argue, the gap between the sciences and the arts became more pronounced as the period progressed and examining this type of interchange can help trace the split. Rather than viewing the Romantics as staunchly anti-science, examining their relationship to science and scientific figures, particularly cognitive science, would give us a clearer picture of the precise relationship and, as with

Wordsworth and Coleridge, give us a better understanding of their views on issues such as sentience, the source of life, consciousness, and the relationship of the imagination to transcendentalist and materialist philosophies. From such a study would emerge a more comprehensive portrait of the Romantic period.

The debate about cognition continued to be significant throughout the Romantic period and into the Victorian era. Richardson claims that the "vision" of an embodied universalism that levelled social distinctions "was barely sustained and its promise [was] largely unrealized" (*British* 180). Ironically, Lawrence's own work undermines his aspirations to make science into a discipline free of ideology that could objectively pursue empirical truths. His discussion of humankind's natural history is an exemplar of the type of distressing race theory that was emerging in the nineteenth century. His assessment of the different "races" of people rank them in a hierarchy that places Europeans at the top and Africans at the bottom. Clearly, this is science with an ideological agenda. In his later years, Davy also wrote unpublished race theory that was similar to that found in Lawrence's work. Tracing the cognitive basis that justifies certain prejudices, as well as when the shift occurred or began to occur, would allow us to see origins of certain pervasive beliefs that still pollute contemporary thought and, hopefully, circumvent other such mistakes in contemporary neuroscientific and cognitive research.

The intersection between Romanticism and contemporary cognitive science is particularly exciting now that we see the extent to which Wordsworth and Coleridge were informed by British materialist empiricist theories of mind. Of the many fruitful research projects that could result from the union of Romanticism and enaction, I am particularly interested in testing the hypotheses advanced by the Romantic poets. Under the influence of post-structuralism and deconstruction, literary studies and other humanities disciplines have raised important question

about the nature of the text (broadly defined), the stability of language, and the political implications of both. Given the proposition that there are no transcendental truth-claims—a position that no materialist would deny—we are left with the same questions that Coleridge and Wordsworth tried to answer. What is the importance of art to human life? What is the best way to create an ethical, moral, and just society? What is the relationship between art and social reform? Because enaction mediates structuralism and deconstruction it has the potential to provide useful answers to these questions. Using the theories of Wordsworth and Coleridge and the methodological approach of twenty-first-century enaction we can, perhaps, formulate a working theory of embodied aesthetics and an embodied theory of social change.

In recent years, interdisciplinary teams of cognitive scientists, neuroscientists, and philosophers have begun studying aesthetic experience. Under the denomination "neuroaesthetics," these researchers seek to understand and explain aesthetic experience, but "not simply to understand more about the brain, but also to understand more about art by using the science of the brain" (Croft 6). While understanding how the brain processes aesthetic information and translates it into a certain type of experience is certainly a fascinating endeavour, I am more interested in exploring the role of aesthetics in cognition overall. What role, if any, does the "special state of mind that is qualitatively different from the everyday experience," known as aesthetic experience, have in understanding and negotiating the world (Marković 1)? At first glance, it may seem absurd to presume that an appreciation of the beautiful could have anything to do with core cognitive functioning. Yet, until quite recently, it seemed absurd to consider the role of emotion in cognition. As the research done by Ellis and by Damasio shows, emotion actually drives all other cognitive processes, including consciousness. Aesthetic experience is, in the British

empiricist definition, not a rational disembodied process, but a matter of taste, or the immediate response to sensory input. It seems useful, then, to research how this experience affects other cognitive processes, such as decision-making, learning, social interaction, memory, and so forth.

Coleridge and Wordsworth, like others of their generation, argued for an essential link between aesthetic experience and character development. According to these poets, poetry has the ability to be more persuasive than the most logically structured argument because it has "for its *immediate* object pleasure" (*BL* II: 13). In other words, the pleasurable emotional experience combined with an altered perception of everyday percepts can fundamentally change a person's outlook and actions. The power of poetry and other art forms derives from its ability to create an embodied, physiological response in its audience. With the discovery of mirror neurons, it is worthwhile to revisit Wordsworth's claim that "the human mind is capable of excitement without the application of gross and violent stimulants" (*PrW* I: 128) and his concern about humankind's "degrading thirst after outrageous stimulation" (*PrW* I: 130). It would be useful to study the effect of various types of media on its users. Does reading have the same effect as watching a film or playing a video game, for example? Does form affect the processing of content and do certain forms lend themselves to more aesthetic or affective experiences? To what extent are people's opinions and behaviours altered by interacting with material that creates an aesthetic experience? Some work along these lines has, in fact, already been done. For example, David Miall and Don Kuiken have conducted extensive research on the relationship between reading and affective experience.[18] They argue that literary reading offers a particular type of experience that other genres do not.

[18] For a list of publications and more information regarding their research, see their website "Reader Response: Empirical Research on Literary Reading" at http://www.ualberta.ca/~dmiall/reading/.

Other work has been done by Raymond Mar, who has studied the relationship between reading fiction and the development of social skills, including empathy (see Mar et al.). The findings of these researchers indicate that it would be worthwhile to continue studying the relationship between cognitive functioning and aesthetic experience.

Ellis, too, argues for the importance of art within human experience. He starts "with the assumption that the first desire of a self-organizing conscious being is to *be* in the form of a self-organizing conscious being—to be conscious at a certain level of intensity" (180). As organisms that have achieved a certain level of consciousness, human beings are emotionally motivated to "heightening" and "carrying forward . . . one conscious state into the next in such a way that the overall progression remains interesting, alive, and meaningful" (180). In his view, human beings are not driven solely by consummatory drives, that is, the desire to maintain homoeostasis. Instead, as hyper-conscious organisms, we are organised to want to feel alive, to have emotional experiences, and to value the experience of being alive. Art plays an important role in cultivating these types of experiences. It is this aspect of art and aesthetic experience that bears further scrutiny—its relevance to human life, not as an added but inessential layer of cultural development, but as a necessity. Enactionists have turned their attention to phenomena that were ignored or deemed irrelevant by cognitivists and asked what role they play in cognition. We should focus this sort of attention on and ask similar questions about the role of literature and art.

Another question relates to ethics, morality, and social change. As we saw in the first chapter, Wordsworth believed that change happens on an individual level through affective experiences, including aesthetic experience. Given the recent findings regarding emotion, it seems that in some respects he may be right. In this view, individual transformation translates into social change. As people adopt ethical

behaviours and attitudes, the effects are felt at the societal level. In the wake of post-structuralism, which drew attention to the ways in which certain truth-claims were oppressive to and exploitive of large groups of people, the nature of social change is certainly worth investigating. Many academics in the humanities profess a desire for social systems that are more justly and equitably structured. The findings of enaction about embodied cognition could provide useful information for formulating a theory of social change. If we understand how beings are hard-wired, how they are affected by their environments, and how they are able to change and shape their environments, then we can set up reasonable expectations regarding human behaviour at the individual and social levels.

Human nature has been a subject of enquiry in many, if not all, cultures perhaps even from the very inception of the great evolutionary cultural revolution that propelled human beings into civilisation.[19] In the tradition that extends from Hobbes to Locke to Rousseau to Marx, philosophers have proposed social and political theories that are predicated on a particular view of human nature. Furthermore, these thinkers draw upon the best knowledge of their time. Why should we not do the same? Perhaps it is time to revisit questions of human nature, social formation, and social change. The empirical findings of enactive research can productively inform a humanist theory of social change that could have long-range impacts on issues such as pedagogy, the structure of government, and the implementation of social welfare. With the rise of post-structuralism and deconstruction in the 1960s, many academics have turned their attention to political

[19] Edward Slingerland calls this evolutionary moment "the so-called cultural big bang" and explains that it "occurred between 30,000 and 60,000 years ago—at least 40,000 years after the emergence of anatomically correct modern humans—and . . . involved the creation of representational art, complex tool technology, long-range trade, the rise of religion, and the rapid spread of *Homo sapiens* across every habitable continent on earth" (20). For a theory about how mirror neurons may have played a role in this cultural explosion, see Ramachandran, "Imitation."

issues involving traditionally dispossessed social groups, including women; people of colour; gay, lesbian, bisexual, and transgendered people; immigrants; and most recently animals and the environment. A theory of how people become motivated to change their attitudes and behaviours that is based on the findings of research in enactive theories of cognition could help further the goals of these politically oriented academics.

Furthermore, the very theory of enaction, with its emphasis on a mutually co-dependent relationship between subject and object, lends itself to a revised view of human nature and our relationship to our surroundings. According to Varela, Thompson, and Rosch, "the force of self-interest is always other-directed in the very same respect with which it is self-directed" (246-47). That is, human beings have the capacity to move in either direction—toward egotism and greed or toward selflessness and humanitarianism. The originators of enactive theory claim that it is, indeed, possible to transform *Homo economicus* into *Homo benevolus*. Ellis also argues that human beings are capable of change. Though certain responses are hardwired from birth, self-organizing systems can "change them [their responses] in accordance with what works best for the changing patterns of organization of the developing organism" (39). That is, as self-organising systems, people are able to rearrange their environments to facilitate the maintenance of a particular pattern or bring a new pattern into being. We can also retrain our habits. This capacity for change, he argues, is possible because people can imagine enacting new patterns of behaviour and being and then figure out how to implement them. This description of change at the ontogenetic level is similar to the Romantic theories described in the first chapter. Such an undertaking would involve an extensive review of the literature that discusses enactive hypotheses, embodied cognition, and the studies on which these theories are based, but it could help determine if further empirical research is

needed or if a viable theory can be formulated on the basis of current data. In a world characterised by globalisation, late-stage consumer capitalism, economic collapse, Occupy movements, and other conceptual buzzwords, it is advisable to take another approach to the reformation of society in the spirit of Romanticism.

In essence, I propose that we take up the project of the Romantic thinkers discussed in this dissertation; that we take the positive knowledge we have about the world and use it to formulate provisional theories about aesthetics, art, social change, ethics, and society in general. I do not think, as Faflak worries, that twenty-first-century cognitive science, including enaction, can provide definitive and final answers to these questions. Nor do I believe that a research programme such as I have outlined will, at long last, lead us to the utopia predicted by so many philosophers and religious thinkers. I do, however, agree with a number of contemporary scholars, including Francisco Varela, Edward Slingerland, and Ralph Ellis, that it is time “to establish 'consilience' between science and the humanities” (Slingerland 2) because such a union could provide fruitful and pragmatic solutions to long-standing questions and answers that are intelligible beyond the walls of academia.

Cultural Similarities

Romantic thinkers were interested in many issues that continue to be relevant today. Many of them were political and social idealists who believed that society could be ordered along just and equitable lines. In this respect, Romantic thinkers provide a good model for contemporary scholars concerned with social justice. The poets’ relationship to science furnishes another positive framework for us to emulate. I argue that studying the Romantic period, re-examining their theories, and testing them in light of contemporary science is particularly relevant as we settle into the twenty-first century. It is no coincidence that the cognitive scientific

discourses from the two periods are so analogous, for there are at least two major culture similarities. First, both periods experienced rapid advances in science that had immense impacts on technology and industry that radically transformed the extant economic systems. Second, while the sciences were splitting from the arts during the Romantic period—with poets calling for them to remain conjoined—today, the disciplines are sharply divided, with scientists and humanists alike calling for their reunion.

The Romantic era saw the birth of the industrial revolution, which was fuelled by work done by scientists such as the members of the Lunar Society and, later, Humphry Davy. From the Boulton-Watt steam engine to the Davy safety lamp, advances in science furthered the interests of industry. The mechanisation of many processes changed the shape of labour, increased production of material goods, and gave rise to a whole new iteration of capitalism. Likewise, since the inception of cybernetics in the mid-twentieth century, we have seen advances in technology that have, once again changed the nature of the economic and social worlds. Since the Romantic period we have moved from the industrial age to the atomic age to the digital age in just 200 short years. The poets were right in calling for us to slow down and look at the consequences of our actions. They advocated for a science that remained in touch with the human concerns that are often relegated to philosophy.

At the beginning of the Romantic period, the arts and sciences were not separate disciplines. Scientists wrote poetry, poets conducted scientific experiments, and the both fields of inquiry with their different methodological approaches were thought to make important contributions to the production of knowledge. Positivist science, however, had begun its ascent by the end of the Romantic period and science became less and less interested in questions that could not be empirically verified. Eventually, the rift between the arts and sciences codified into Snow's two

cultures with which we are so familiar today. A movement that calls for the reunion of what was once torn asunder is, however, beginning to gain momentum in academia. Just as the poets called for the union of these two fields, so are scientists and humanities scholars calling for their reunion today. It is these broad similarities that account, in part, for the discursive and theoretical similarities between Romantic and contemporary cognitive science.

These similarities make the union of Romantic theory and enactive cognitive science research all the more relevant. The work of Mark Johnson, Ralph Ellis, and others has already demonstrated that Romantic theories of imagination are largely accurate. Image schemas and metaphor play a foundational role in structuring human thought and language. Furthermore, the discovery of mirror neurons has begun to substantiate eighteenth-century theories of moral philosophy based on sympathy and empathy. It has also validated Darwin's theory of imitative learning. It seems more than worthwhile, then, to conduct cognitive science research that explores other “Romantic” concerns. The similarities between the enactive approach and the theories of Wordsworth and Coleridge make it a particularly appropriate methodology. The resonance between contemporary cognitive science and Romantic theories of mind offers us an opportunity to work toward executing the best and most equitable parts of the vision of society held by Romantic radical scientists and poets alike.

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