"The Time of Unrememberable Being":

Wordsworth's Autobiography of the Imagination

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Submitted 15 July 1997, final version accepted 9 September 1998.

Auto/Biography Studies 13.1 (1998): 7-38.

Special issue on autobiography and neuroscience

Edited by Thomas Smith

Introduction

Item. In October 1798, William Wordsworth finds himself isolated, with his sister, in a rented room in the German town of Goslar, during the coldest winter of the century. In a small notebook bound in boards, starting from the back among Dorothy's grammar notes, he begins the story of his childhood at Cockermouth and Hawkshead in the English Lake District. Returning to his earliest years, he suddenly pauses, and interjects,

> now I speak of things
> That have been & that are no gentle dreams
> Complacent fashioned fondly to adorn
> The time of unrememberable being

The words stand for an instant. In a letter to Coleridge, he complains of "an uneasiness at my stomach and side, with a dull pain about my heart" (Wordsworth and Wordsworth 236). Returning to his bold assertion, he crosses out the line that, perhaps, protests too much, leaving only a hesitant disclaimer:

> perhaps I speak of things
> Complacent fashioned fondly to adorn
> The years of unrememberable being (MS JJ, Z^r, Wordsworth, *Prelude 1798-99* 10, 114)

In subsequent versions, the lines are dropped.

Item. In the first few days after her stroke, Mrs. B.M. refused to acknowledge anything was amiss. Although a massive infarct in the right parieto-occipital lobes had caused a complete hemiplegia of the left side of her body, when asked, she would hotly deny she was impaired. Assigned a task requiring both hands, she would persist with an obstinacy that suggested she

herself was genuinely deluded. Her anosognosia was accompanied by somatoparaphrenia: if she acknowledged the limp arm and leg at all, she would insist they belonged to someone else. On subjects unrelated to her paralysis, she remained lucid.

In a remarkable probe into the soft machinery of the mind, Vilayanur Ramachandran at UC San Diego's Center for Research on Brain and Cognition began by asking her if she had any problems moving her arms, as usual prompting a vehement denial. He then irrigated her left ear with ice-cold water. Almost immediately, her eyes started moving rapidly, in a manner characteristic of the dream state (nystagmus). When questioned, she replied that she could move her right arm, but not her left; in fact, she said, "it has been paralyzed continuously for several days now."

Later, when the effect of the cold water had worn off, she was asked about the incident. She remembered the cold water and the exchange, claiming, "I said my arms were OK" (Ramachandran 355).

What is the neurological architecture of the autobiographical self, and why does it prompt the rewriting of memories? What are the mind's systemic safeguards against delusional thinking? These questions are important not only for the neuroscience of autobiography, but for understanding aspects of human cognition that have so far been largely overlooked in the scientific study of the mind: the multiple uses (and abuses) of fictional scenarios. The neuropsychology of pretend play, metacognition, and the imagination is just beginning to receive serious attention.[1] The imaginative mind is being placed under the magnifying glass – or, more appositely, in the functional magnetic resonance imaging machine. Because empirical data acquire meaning only within the context of a theory, we humanists, as denizens of the imaginary, would do well to participate in the elaboration of a theoretical framework that does justice to the complexity of the issues at hand.

In such an elaboration, the rich and subtle phenomenology of literary works can be of particular interest, for instance in providing a publicly available and psychologically powerful record of the intimate operations of an individual mind. Such a record need not be literally veridical to provide useful data; traces of distortions and deceptions can be equally informative.

Conversely, the competing explanatory frameworks of neuroscience can illuminate our understanding of literary texts by placing the all-too-familiar psychological assumptions we use to interpret them in a novel and challenging light. While a cognitive reading of literature does not fit neatly into the disciplinary traditions of either literary criticism or cognitive science, the best work shows that both fields can benefit, and a new and habitable area is emerging in the fruitful gap between the sciences and the humanities.[2] Persistent issues in the study of literature, such as the problematics of the self, can be addressed afresh in a psychological as well as a historical context. In the present essay, I have chosen to examine the manuscripts of William Wordsworth's earliest drafts of what was eventually to grow into his *magnum opus*, the posthumously published autobiographical work *The Prelude,* for evidence of the nature of the autobiographical self – the self that is a story, yet functions as the locus of being.

Why Wordsworth? At a time when the dominant scientific models of cognition, steeped in the object-oriented ontology of the Newtonian tradition, focused on the mechanics of how sensations gave rise to ideas, he championed the subjective experience of the imagination. His self-consciously psychological poetry captures some of the dynamics of the mind – in particular, the emotive aspects of metacognition – that we find at the cutting edge of cognitive neuroscience today.[3] In the notion of the "blended might" of the mind and the external world (Wordsworth, *Home* 1013; 104), Wordsworth also foreshadows the recent renewal of appreciation for the *embodied* nature of cognition. As Andy Clark points out, contrary to a long-standing trend in cognitive science and artificial intelligence research, "minds are *not* disembodied logical reasoning devices" (1).[4] In particular, Wordsworth's notion of intrinsic affinities between the growing mind and the natural world – his primitivism, which I will return to in a moment – represents a break with the idea that the mind has no inherent structure, and resonates with evolutionary psychology's emphasis on the relevance of the human ancestral environment for understanding contemporary cognition.[5]

In the fall of 1798, when he began his autobiographical project, Wordsworth was at a turning-point in his career. Six years earlier, he had left his pregnant lover behind in revolutionary France, only to see their two countries go to war and prevent his return. As the initial euphoria of the revolution yielded to fratricidal terror, his hopes in radical politics wilted,

and through difficult years he struggled to gain a new sense of direction. Aided by his sister Dorothy, he sought refuge in a personal vision of redemption in man's relationship with the natural world. That spring, under the philosophical tutelage of Coleridge, he had begun to formulate an increasingly ambitious poetical project – "[i]ndeed I know not anything which will not come within the scope of my plan"[6] – yet he still felt unsure of his abilities. The imaginative return to his childhood became a means of allaying his anxiety and providing a grounding for his identity as a poet.[7] He appears to have had no ready-made philosophical and psychological framework for this task. In fact, the explicit models of cognition available to him spectacularly failed to sanction his intuitions, though this very failure appears to have spurred his aspirations. Coleridge exposed him to the work of David Hartley, whose *Observations on Man* attempted to do for cognition what Newton had done for physics: provide a principled causal and materialistic account nestled in a faith in the beneficence of a Divine Designer. Like subsequent materialist descriptions of cognition, Hartley's was led to see human agency as illusory (317). In contrast, Wordsworth came to see poetry as an act of the creative imagination, and the poet as the preeminent generator of novelty. His hopes were up that there was a vocation and a living in it.

In the following, I begin by examining how Wordsworth's attempt to create a basis for his own poetic genius entailed an innovative break with the cognitive theories of his time, goaded by an encounter with a radical educational scheme proposed by Thomas Wedgwood. Through a close reading of his first autobiographical sketches, dating from October 1798 through April 1799, I demonstrate how he creatively remembers his childhood in terms of the development of the powers of the imagination. Forming the warp of the fabric of the essay is thus Wordsworth's earliest autobiographical attempt to trace the ontogeny of the imagination back to the dream state, to play, and to perceptual and conceptual blending, while the woof weaves in the results of cognitive neuroscience, drawing on memory research, sleep research, cognitive science, and evolutionary psychology, adding to his ontogeny a phylogeny or evolutionary history of fictional cognition. The successful unfolding of the imagination, I argue, is only possible when accompanied by adequate systems of source monitoring, defined as the capacity to distinguish between what originates in perception and what is the response of memory. The resulting tapestry aims to be sufficiently complex to permit the formulation of a neurological hypothesis

about the self that we find traces of in a poetical fragment Wordsworth wrote as a commentary on this first period of composition: that the autobiographical self-as-being arises as a virus within the source monitoring system itself and functions to override the action of cognitive proprioception.

The Challenge: What a Chaos of Perceptions!

In a pair of articles published in 1956, David Erdman argues that Wordsworth's interest in the development of the child's mind in general and his own in particular was occasioned by the following amusing incident. In September 1797 Tom Wedgwood, the young heir to the potteries at Etruria, paid a week-long visit to the Wordsworths and Coleridge in the Quantock Hills. He had been corresponding with Godwin and came to propose a project to "anticipate a century or two upon the large-paced progress of human improvement" (430).[8] Such momentous advances were made possible, he felt, by a new science of the mind, in effect various refinements of the Lockean model. The key proposition was that all conceptual structures derive from perceptual input; the mind at birth is like a "white paper, void of all characters" (Locke 121), and concepts are constructed through a process of association. It was obvious to the young Wedgwood that this model identified a dramatic obstacle to intellectual development: the complex sensory fluxes of the real world were surely not the optimal input. As Wedgwood put it: "What a chaos of perceptions! If one were ignorant of the resulting produce, idiocy would certainly suggest itself as the only possible one."

Given that we are not "ignorant of the resulting produce," the fact that children are reliably able to make sense of the world might reasonably be counted against the model. What struck the business-minded Wedgwood, however, was the other possibility: that a careful management of perceptual input would dramatically improve the efficiency and yield of the system. Children – and one obviously could not start too early – should be raised in laboratory conditions so that the infant's sensory development would not be overloaded by random and meaningless data. A nursery with "plain grey walls" would keep the signal-to-noise ratio high, and "one or two vivid objects for sight & touch" would provide the necessary stimulus. The

budding prodigy must be spared all contact with the outside world. "The gradual explication of Nature would be attended with great difficulty," Wedgwood admits in his letter to Godwin, and should be delayed as long as possible; clearly, "the child must never go out of doors" (qtd. in Erdman 430).

One may wonder why Wordsworth, of all people, was thought of as the right person to run this factory for geniuses, but Wedgwood had no doubt he had "only to be convinced that this is the most promising mode of benefitting society to engage him to come forward with alacrity" (qtd. in Erdman 430). And why would he not? Within the associationist framework, which Wordsworth largely subscribed to at the time and certainly had no articulated alternative to, Wedgwood's arguments are compelling. If the infant's conceptual structures are to be built up from scratch on the basis of perceptual input, this imposes an extremely delicate task on the part of its educators: to reduce the overwhelming disorder of natural stimuli to a level of complexity manageable by the conscious problem-solving abilities of a new-born child. A radical simplification of the child's environment presents itself as an urgent necessity. The apparent inevitability of this conclusion must have struck Wordsworth with the full force of its senseless absurdity.

By pursuing the associationist, blank-slate model of the mind to its *reductio ad absurdum*, Wedgwood in effect laid bare its Achilles' heel: the so-called *frame problem*, or the apparent computational impossibility of locating the small and scattered fragments of the needle of relevant features in the infinite haystack of reality. First explicitly addressed by the Artificial Intelligence community in the 1960s (McCarthy and Hayes 487), it represents one of the most persistent and most illuminating obstacles to the development of information-processing models of cognition (Dennett 131). Since drooling infants, who appear to have severely limited intellectual abilities, routinely succeed in learning to handle objects, identify individuals, navigate through cluttered rooms, and speak any language they are exposed to, it seemed to the early AI researchers a fair initial assumption that these tasks are computationally relatively straightforward. However, the problems of programming even rudimentary skills such as moving blocks around proved surprisingly intractable; in practice, the designers of artificial systems had

to resort either to extremely specialized devices which functioned only in a highly constrained domain, or to an elaborate "innate" interpretive frame (Tooby and Cosmides 106).

This conventionally unappreciated fit between the growing child and its natural environment became a major theme in Wordsworth's poetry and practice. In their education of little Basil Montagu, who was living with them at Alfoxden, he and Dorothy showed an implicit trust in "those first-born affinities which fit / Our new existence to existing things" (ll. 140-41)[9] to guide the child. Skeptical of "this age of systems," they encouraged him to roam freely out of doors, letting him scour the environment for relevant features with an "insatiable curiosity" (Wordsworth and Wordsworth 180). William's own aspirations for genius found no resonance in Wedgwood's scheme; given his childhood, he might consider himself lucky to have avoided idiocy. On a personal level as a poet, as an educator, and as a human being intensely involved in his imaginative relationship with nature, he finds the project profoundly and inspiringly misguided. "There are who tell us that in recent times," he writes in his notebook,

> We have been great discoverers, that by dint
> Of nice experience we have lately given
> To education principles as fixed
> And plain as those of a mechanic trade (qtd. in Gill 448-49)

Something tells him the education of children is not an appropriate target domain for the mechanistic projection, and he begins to embark on a project of his own: an ontogeny of the imaginative faculty, formulated in terms of the growth of the mind in response to natural objects.[10]

The Response: The Tempest at Goslar

On the 16th of September 1798, the Wordsworths and Coleridge set sail for Germany – Wordsworth motivated to learn the language by hopes of well-paying translation work, and Coleridge to imbibe the new intellectual brew. After a few weeks in Hamburg, William and Dorothy start feeling "every thing is very dear" (Wordsworth and Wordsworth 232) and decide to lodge in provincial Goslar, arriving in early October. It is cold; they are not invited out, perhaps (as Coleridge surmises) because the *Bürgerstand* takes "sister" to be a transparent

euphemism (Gill 158). "As I have had no books," Wordsworth writes Coleridge in the middle of December, "I have been obliged to write in self-defence" (Wordsworth and Wordsworth 236). These winter months sees the production of some of his best lyrical poetry, and, feverishly, he begins the project of reimagining his childhood. Through what Coleridge came to call "The Growth of Genius from the influence of natural objects on the imagination in Boyhood and early Youth" (qtd. in Erdman 495) – a creative autobiography of his own imaginative power – he affirms his identity as a "favor'd being" (*Prelude 1798-99,* l. 245), worthy to serve in the public capacity of a poet. It is a brilliant defense of his poetic aspirations and abilities, a textual object that privately anchors his public identity. Repeatedly extended and revised through a lifetime of self-editing, *The Prelude* remains a personal totem shared among close friends, published only at his death in 1850.

Was It for This

Wordsworth's project of creating an autobiographical self starts with an embarrassment of riches, a combinatorial explosion of possible selves. The self that is gathered from memory – the narrative self – can be constituted from an endless number of traces from a past that need not even be his own, tied to an imaginary future by an infinite array of narrative threads. It is in this situated act of retrieval, the Canadian memory researcher Endel Tulving suggests, that memory is *ecphorized* or made operational (Gazzaniga 97, 104). Although it may be helpful to think of traces of the past as existing objectively in the neural tissues, this condition of storage is subordinated to the dynamics of recall. Experimental evidence suggests that memory is distributed throughout the brain, and that the act of recall activates the same neural elements that participated in the original experience (Farah 91-103, Frith and Dolan 175-81), yet access is determined by relevance, judged in the limbic system (Cytowic 318). The motivational dimensions of retrieval – the sense of a meaningful and organizing purpose – is what prevents the project of constructing a self from dissipating in a tangle of subverting, distracting, and duplicating pathways.

On the back page of MS JJ is a series of drafts, "presumably towards a preamble," as Parrish suggests (Wordsworth *Prelude 1798-99* 117n). It speaks of "a mild creative breeze" that waxes into a disturbing tempest, drawing on aerodynamics to convey the sense of the mind's fluid yet emotionally focused process of self-creation. The main continuous piece of poetry – some 150 lines – begins in mid-thought:

> was it for this
> That one, the fairest of all rivers, loved
> To blend his murmurs with my nurse's song,
> And from his alder shades and rocky falls
> And from his fords and shallows sent a voice
> To intertwine my dreams (ll. 22-27)

The quest for a design – "was it for this" – is the structuring force of the writing and establishes the central purpose: ostensibly to reevaluate, but more significantly to access and harness, in light of what he is and has accomplished now, the complex resources of the past in the service of the present. It is this combined act of growth and pruning – the metacognitive drive of "the mild creative breeze" – that promises to bring the scattered pieces into one coherent story, to create a new self at the expense of the old.

Two distinct and interacting aspects of the autobiographical self emerge as functional components in Wordsworth's act of self-creation: let us call them the narrative and the homuncular self. For the first, the most straightforward account of a renarration of the self is that of revising trait knowledge. Experiments done by social psychologists Stanley Klein and Judith Loftus indicate that trait knowledge of oneself in stable periods is generally not dependent on episodic recall, but is stored in semantic (categorical) memory (19). Wordsworth's poetic outpourings may coherently be seen as an attempt to revise his ideas about himself in a period of change through a selective and imaginative recall of a sequence of childhood episodes leading to a revised set of semantic memories, or updated functional trait registers.

The revisioning of the narrative self, however, is not simply a matter of storing new bits of information, but an act of experiential immersion in a coherent visceral simulation, with the full complement of perceptual imagery and decoupled motor responses. Such simulations are frequently accompanied by the sense of an internal observer, or a *homuncular* self. The

psychologist Marcia Johnson plausibly argues that the self as internal agent is part of the solution to the challenge of distinguishing between what is imagined and what is real ("Reflection" 13). What is imagined or thought can usefully be referred or attributed to an internal "thinker" – though in truth there is no "little man in the head" responsible for doing the thinking – to distinguish the content from what is directly perceived. The homuncular self appears to be formed along an analogy with the body so that it positions itself in the same relation to the virtual reality of the imagination that the body has to its environment, inhabiting it as an agent. Yet the proportion is not unproblematic. The homuncular self, plausibly invented to simplify source monitoring, is itself more prone than other figments of the imagination to being mistaken for an independently existing entity. Wordsworth's autobiographical project, I will eventually endeavor to show, creates a delusory chimera out of this bestiary of selves, combining a limited historical narrative and a functional image of an internal agent with a sense of infinite being.

In the context of situated cognition, changing the self may be thought of as creating a new dynamic between the mind and the external world – a feat that is initiated through the running of emotionally charged and perceptually vivid simulations. Because software implementations in the brain's wetware are generally thought to entail hardware modifications (Jackendoff 35), simulations not only create new meanings, but also the structures that permit the replication of that meaning – what may be termed perceptual and behavioral scripts, orchestrated by an emotionally charged sense of purpose. In Wordsworth's earliest autobiographical poetry, the new relation between the internal and the external is one where the mind is not simply passively receiving but actively participating in the creation of meaning. The self-consciously imaginative story of the new dynamic is cast as a history of the coming into existence of this creative faculty, constituting an autobiography of the imagination.

Ancestral Dreaming

Wordsworth's double quest for a poetic self and an educational philosophy leads him to a single neurological narrative: the birth of the imagination. Because the appreciation of the significance of fictional thinking is so recent in the scientific study of the mind, and because the

phenomena themselves are so complex, a unified and comprehensive theory of the rise of decoupled cognition has yet to be formulated. This is in itself a healthy state of human knowledge and one not unsuited to an open dialogue between the fictional imagination and the factual investigation of the mind. Wordsworth's proposal above that the origin of the imagination goes back to the dream state in early infancy is neurologically respectable. The imagination – and let us allow its characteristics and significance to unfold as we go along – is minimally characterized as a form of *decoupled cognition* or representational thinking not devoted to the immediate demands of perceptual processing and motor control. This minimal definition also fits the dream state and its natural history – its place in human ontogeny and phylogeny, and its neurophysiological and cognitive characteristics – provide us with a set of conceptual tools central to understanding the far more demanding problems of the waking imagination.

The neurology of dreaming was largely unexplored until sleep research in the 1950s stumbled across an unsuspected and paradoxical third state in which the mind was wide awake and the body paralyzed (Aserinsky and Kleitman 273-78, Hobson 146-51). Electroencephalograms showed desynchronized low-voltage brain waves almost indistinguishable from those of the waking state and a complete atonia of the skeletal muscles – a self-induced paralysis caused by the inhibition of motor command neurons in the spinal cord and brain stem (Hobson 207). Brief bursts of rapid eye movements punctuate this state, giving it its scientific name, REM sleep (Dement 291-96, Hobson 143). The visually detailed episodic narratives of hallucinatory dreams, in which the mind mistakes its own productions, however bizarre, for an independently existing reality, correlate closely with these bursts (Symons 184). Their origin lies deep in the pontine region of the brain stem, from which waves radiate outwards to the geniculate nucleus in the limbic system and spread into the occipital (visual) area of the neocortex. It is these ponto-geniculo-occipital (PGO) waves that drive the powerful virtual reality machine of hallucinatory dreams (Symons 184). Orchestrated by competing populations of neurotransmitters – acetylcholine inducing the REM state, norepinephrine inhibiting it (Hobson 152, 177) – they are part of the "ceaseless music" that "compose[d]" the infant Wordsworth's thoughts (ll. 30, 32).

Why is the mind deceiving itself at night? The dreams associated with PGO waves are deeply delusional, in the sense that internally produced scenarios are subjectively experienced as

actual external events – a confusion that would be psychotic in a waking person. Like a person afflicted with schizophrenia, the dreaming mind attributes recalled voices to real persons. Cues to unreality such as disjunctive changes of scenes, impossible transformations of persons, and deviations from natural laws are blithely disregarded (Hobson 212). The nerve cells carrying perceptual input into the brain are depolarized in the brain stem, thus insulating the mind from the corrective evidence of the real world (Hobson 206).[11] However, the delusions have no untoward effects; the motor commands are inhibited before they reach the muscles, and dreamed events are typically forgotten upon waking. This decoupling of dream mentation from waking reality makes the REM state a strong candidate for the primordial fictional mind. In dreams, the mind can engage in intense participatory hallucinations because a space has been created that insulates it from reality.

The harmlessness of dreams, however, hardly suffices to explain them. They accompany us in our periods of most explosive neural growth: while the fetus is almost constantly in the REM state, neonates spend half their time in it (Roffwarg, Muzio, and Dement 616). As we age the proportion diminishes, but most of us manage to clock in an entertaining six years of dreaming before we reach seventy (Hobson 5). Nor is the state unique to human beings; common to all mammals, it tapers off only in the monotremes (Cytowic 104). So what is this paradoxical state for, where the brain is wide awake and the body is paralyzed? Researchers broadly agree that the function of early REM sleep is to promote the development of the central nervous system (Symons 211); specifically, Hobson suggests it may be to "perform activation tests that lead to structural change" in the development of the sensorimotor systems (292). The neurological evidence indicates that the same circuits that mediate waking experiences and motor commands are activated in dreams (Hobson 29); dreaming may perhaps coherently be viewed as an a way of running simulations that prepare and maintain the neural programming of significant behaviors.

This behavior-rehearsal hypothesis was first proposed by Michel Jouvet, who in a cruel if ingenious experiment succeeded in reversing the dream state's muscle atonia in cats by means of lesions in the pontine tegmentum. Docile and well-fed house pets sprung to life in their REM sleep, performing the ancestral acts of stalking, hiding, and pouncing on imaginary prey in a generally random manner (895-99). In the case of human beings, Hobson points out that "a

substrate for behavior at the level of neural programming" is indicated by the "rich overrepresentation of significant behaviors: fear, aggression, defense, and attack; approach-avoidance; and sex" (295). The emotional component is prominent; dreams rehearse not merely the sensorimotor systems, but their connections to the motivational centers in the limbic brain (Cytowic 104). A basic function of dreams, then, may be to rehearse behaviors that have, in our evolutionary history, been of significant value to survival.

The behavior-rehearsal hypothesis provides an entry into Wordsworth's primitivism, and the basic, animalistic activities of the poet as a young child. The four-year-old's favorite pastimes – alternately basking in the sun to warm himself and plunging into the stream to cool off, running over the sandy plains (ll. 41-47) – rehearse a fundamental if unimaginative repertoire of behaviors. Such a repertoire is in some sense trivial, the kind of thing every animal can do – but then animals are wonders of embodied cognition far ahead of anything we have yet been able to understand or reproduce, and it is only our familiarity with these skills that make them appear simple (Clark 97). Wedgwood's reasoning is correct: there is something unlikely in the child's ability to master the world, and the natural setting ought to swamp rather than thrill the untutored mind. The dreaming child may provide a link to a prolonged evolutionary history that built into the human mind a set of framing assumptions specifically adapted to nature, precisely "those first born affinities which fit / Our new existence to existing things" (ll. 140-41).

In a self-consciously primitivist line, the poet recalls standing alone

> when the hilltops
> The woods & all the distant mountains
> Were bronzed with a deep radiance
> A naked savage in the thunder shower. (ll. 47-50)

This stunningly evocative aboriginal image – the boy glistening wet in the pouring rain, surrounded by peals of thunder, admiring the illuminated hills – conveys a sense of primordial power and speaks to a conviction that the natural environment is the proper domain of human experience. In a similar vein, the activities described while he was a young boy attending Hawkshead Grammar School in the Vale of Esthwaite – gathering ravens' eggs (ll. 51-67) and trapping woodcocks (ll. 97-117) – resonate with the extended period of time in which our ancestors lived by gathering and hunting. Again, the point is trivial; of course little boys like to

trap birds and steal eggs. Our intuitions blind us to the *a priori* unlikelihood of such proclivities; even the natural requires an explanation. While civilization and agriculture are only a few thousand years old – too brief to leave a genetic legacy – several hundreds of thousands of years in which natural foraging was a way of life have plausibly left pathways in our minds rehearsed by dreams. For Wordsworth, it is these echoes of ancestral modes of life that tie the desires and fears of the child to the natural world, that "interweave / The passions … / With life & nature" (ll. 71-2, 75). He has discovered his childhood and its particular genius: cognitive capacities are awakened that Wedgwood's gray rooms would stifle.

Waking Dreams

If the REM state is the originary locus of decoupled thinking, we may think of the imagination as an unleashing of the hallucinatory power of dreams into the waking state. It is not self-evident that this is an advantageous or desirable development. If the perceptual relays are not depolarized, representations from within will commingle with presentations from without, potentially producing a confused and psychotic state. Responding to such delusive appearances would be highly hazardous, and it seems likely that any tendency of leakage into the waking state would have been weeded out by natural selection. In fact, the widespread mammalian capacity to dream does not automatically translate into a capacity to recall vivid imagery in the waking state. It is for a good reason that the decoupled world of dreams is closely guarded; it is perilous to run simulations when you are performing for real.

There are however, uses of the imagination in restricted areas of waking life. The simplest is that of the formulation of appropriate intentional representations, which involves a brief but crucial fictional loop (see figure 1).[12]

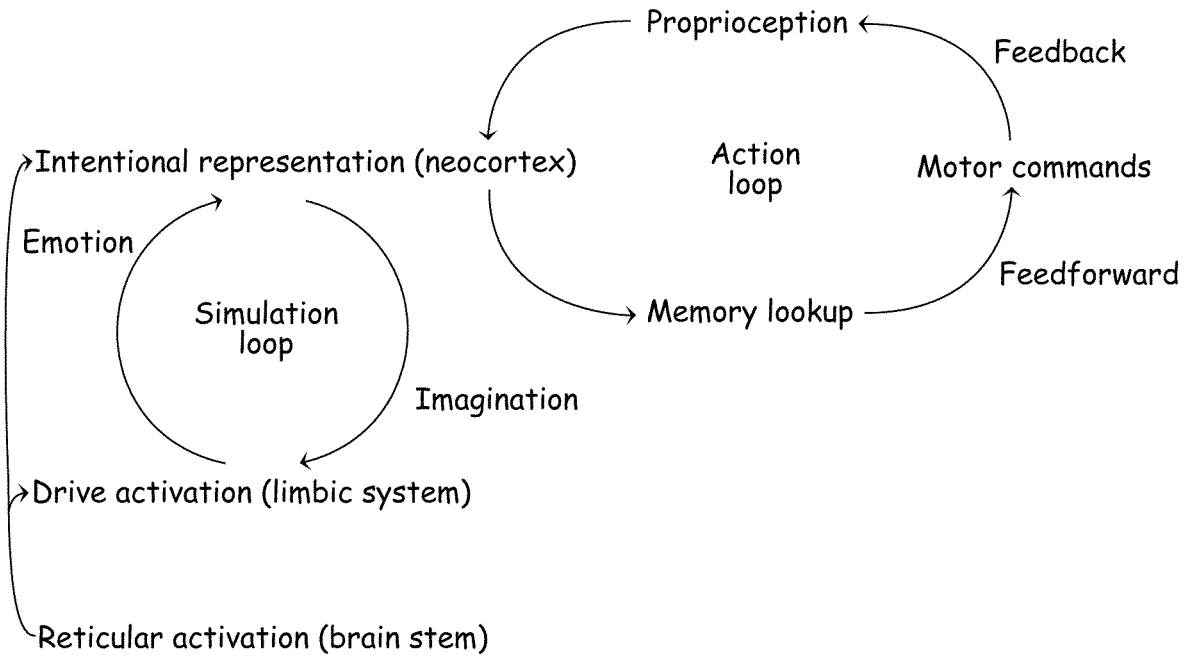

Figure 1: Intention emerging in a reciprocal relation of the neocortex and the limbic system

The basic state of the brain-mind is determined by the reticular activation in the brain stem, which radiates upwards into the limbic system and the neocortex. The motivational centers in the limbic system in turn engage the imaginative capacities of the neocortex to produce a simulation that feeds back down into the limbic system. The purpose of the simulation loop is to formulate a calibrated intention – an emotionally laden plan of action – that draws on the sensorimotor memories of the neocortex and is informed by the priorities set by the limbic system. Once the imagination has formulated a scenario that satisfies the emotions, the motor systems can begin to carry out the intention in an action loop. In dreams, this final stage is inhibited as the motor commands reach the brain stem.

This simulation loop, run to calibrate intentional representations, is a simple kind of decoupled cognition in the waking state, a faculty we most likely share with other mammals. Animal drive activation may require perceptual input to trigger and sustain the simulation loop,

to ensure relevance and as a safeguard against the psychotic condition of the waking imagination. The underlying mammalian adaptive problem is not that the neurological equipment to run visually vivid and emotionally rich simulations is lacking, but that there are only limited adaptations for decoupling the simulations in the waking state. More generally, the constraint on the evolution of the imagination is not the machinery for hallucinations – this is already present in the dream state – but the development of source monitoring equipment for distinguishing between what is generated by thought and what has an independent existence. What is required is a variety of software-like solutions that perform the basic decoupling task performed in the REM state by hardware-like interventions.

Thus, the operations of fear and desire may be rooted both in the rehearsal of evolutionarily significant behaviors in the REM state and in a brief waking simulation, running between the neocortex and the emotional limbic brain. In their animal form, they constitute a rudimentary imagination. For Wordsworth, however, the primary significance of these basic motivational forces is that they forge a link of passion between the child and the natural environment: they are his prime movers of embodied cognition. At the same time, he regards the actions motivated by these primitive response systems as "mean" and "in[g]lorious"; their role is merely to set the stage for an "end" that was "not ignoble" (ll. 56-58). It is the experience of *suspension* that marks the birth of the imagination proper:

> Oh when I have hung
> Above the ravens nest, have hung alone
> By half inch fissures in the slippery rock
> But ill sustained and almost as it seemed
> Suspended by the blast which blew amain
> Against the naked cragg ah then
> While on the perilous edge I hung alone
> With what strange utterance did the loud dry wind
> Blow through my ears the sky seemed not a sky
> Of earth, and with what motion moved the clouds (ll. 58-67)

The distal cause or organizing purpose, signaled by "Oh when" and "ah then," is an event of an uncertain ontology, characterized negatively as the breakdown of adequate interpretation – the wind, the sky, and the motion of the clouds have a meaning that cannot be conceptualized but is left as a series of evocative questions. The moment of suspension is not only a physical loss of

firm ground, but a suspension of the more automatic and animalistic response systems that guided him into nature.

If we think of these response systems as limited solutions to grasping the infinite complexity of reality, their involuntary and momentary suspension occasions no positive knowledge. Our cognitive faculties are local and partial solutions to the complex demands of survival; there is no "all-purpose" interpretive frame. In the language of Kant, we can have no unmediated access to noumenal reality (273). Wordsworth's appears to claim not such an unmediated access, but a suspension of the normal response mechanisms that leaves a gap that he becomes aware of. We might say it appears to him that the world's being is in excess of his modes of construing it. The significance of the experience of the sublime – whether in the poetical reconstruction or in the historical fact must remain undetermined – may be that it awakens him to the constructed nature of his own cognition, thus opening up for a self-consciously participatory role in that construction – in a word, for the waking imagination.

Blended Spaces

We have employed the hypothesis that dreams rehearse evolutionarily significant cognitive patterns to help us understand the presence and development of highly complex and common behavioral scripts such as running to cool off in a stream and climbing in search of food in the environment. What Wordsworth is drawing attention to is that these scripts, although they constitute forms of embodied cognition that perform the laudable task of forging an active emotional bond between the child and his natural surroundings, are relatively mechanical and limited. The momentary and involuntary suspension of innate cognitive response systems draws attention to the constructed nature of these systems and introduces a looseness or *play* into the relation between stimulus and response.

The neurological ancestry to this play we find in the dream state – in the very act of programming the brain. Recall that Wordsworth speaks of how the river loved to "blend his murmurs with my nurse's song" and "intertwine my dreams" (ll. 24, 27). The child's mind, in the terminology of Gilles Fauconnier and Mark Turner, is conceptualized in terms of a *blended*

space. In the model of metaphorical thinking developed by cognitive linguists in the 1970s and 1980s, certain conceptual domains have their own preconceptual structures, and these are utilized to map phenomena in other domains (Lakoff 303). What Turner and Fauconnier realized is that the metaphorical product does not actually fit into either domain; rather, a novel third space is created, which contains selective elements from both domains (184). Wordsworth draws attention to an early form of such metaphorical thinking, *perceptual blending*, where inputs from two perceptual domains – the nurse's song and the river's murmur – are merged.

In the dream state, perceptual input can in turn be blended with conceptual recall. The notion of the river sending "a voice / To intertwine my dreams" (ll. 26-27) is a precisely formulated image to convey the sense of play or input redirection involved in the blending of mental spaces. Yet this play is excessive; the blending appears confused. The auditory system has evolved at least two distinct interpretive engines, for linguistic and non-linguistic sounds – one parses sounds into a stable set phonemes to achieve a discrete combinatorial system, the other does not (Pinker, *Language* 162). Why would the brain pipe non-linguistic input from the river to the phonetic parser, as Wordsworth suggests? In his poetical ontogeny of the imagination, he focuses on the deviance from stable response patterns to suggest an increase in cognitive fluidity central to creativity. The river does not speak softly; it is the nurse that is singing softly. But in the blended space of dreams, the two flow together, so that it is *as if* the river is murmuring. Such seemingly confused input redirection lends a novel flavor to the voice and the river, feeding *back* into the source domains (cf. Fauconnier and Turner 5). It seems likely that dreams make use of the higher-level cognitive integration and cross-fertilization that blended spaces enable (cf. States 2). In Wordsworth's developmental chronology, such blending marks the first discernible budding of the imagination.

In the waking activity of play, controlled confusions take on a still more obvious functional significance. Consider the description of the skating episode Dorothy transcribed for Coleridge in a letter sent in December 1798. The children play games

> Confederate, imitative of the chace
> And woodland pleasures, the resounding horn,
> The pack loud bellowing & the hunted hare. (*Prelude 1798-99* 135, ll. 158-60)

Here, the blend is expressed in outward activity; there is no muscle atonia, and perceptual input is not depolarized. The highly skilled activity of ice-skating, which depends on a perceptually continuously recalibrated action loop (cf. Figure 1), is blended with the fictional scenario of a hunt. The blended space draws features selectively from each domain. The basic skills of skating depend on having a precise and realistic image of one's own and others' bodies, while other features of one's identity and appearance can be disregarded. The higher-level game is organized by the pretense that one is a dog or a hare only in certain respects: it is relevant that hares flee their predators, but not that they have long, fuzzy ears. We may think of this as input tolerance: the various systems that are built to determine the identity of objects in the world have relaxed their criteria. If you want to simulate a certain phenomenon, it makes sense to relax the constraints on the range of events that trigger it and introduce a certain looseness or play in the input conditions. This play is central to the creative imagination.

Pretend games may be considered a behavioral proto-blend and a natural extension of the work of dreams. In both cases, basic behavioral scripts are being practiced, as a strategic preparation for real action. In the case of play, perceptual information is incorporated into the scripted behavior in ways that are, in a rudimentary but striking sense, creative. The action of the game is framed in such a way that one's fellow skaters can be treated, in some sense, as if they were dogs, or one can behave oneself, in certain limited ways, as if one were a hare. At the same time, the children do not really believe they are dogs; the pretend frame allows the content to be decoupled from their primary representations of themselves and reality. This action of framing is the creation of a special space with its own set of rules – a conceptual blend that does not belong in any of its source domains.

The Rise of the Metacognitive Faculty

The REM state is a hardware-oriented neurological creation of the privileged space described by Huizinga as characteristic of all play (10): the skeletal muscles are turned off, the input is strongly attenuated, and the memory recording function is turned off. The decoupling, or imaginative framing, achieved in pretense provides the basis for introducing the power of the

dream state into waking life, where the cameras are on all the time. The cognitive abilities required for pretend play – which in a simple form we share with other mammals – may have formed the basis for a suite of more uniquely human abilities central to the imagination.

Pretend play, Alan Leslie points out, requires a novel set of conceptual primitives: an *agent* that has an *attitude* about a *content*. The attitude of pretense is conveyed to other agents by means of metapragmatic markers: "knowing looks and smiles" signal pretense, along with exaggerated gestures and a melodic intonation. These markers permit the decoupling of the content from primary representation – you know that you are a dog in the fictional blended space, but not in a factual source domain. At the same time, the decoupled content is carried out: you act in the real world *as if* you were a dog. The structure of pretend play suggests that it underlies our ability to comprehend and anticipate human behavior on the basis of invisible and intangible mental states of knowing, believing, and wanting (Leslie 203-08) – what may be called *mind-reading* (Baron-Cohen 21).

Just like pretense, mind-reading requires that we form a model of an agent that has a certain attitude about a content. When we read Wordsworth's poetry, we assume that it involves an explicit attempt on the part of the writer to communicate and reproduce certain fine nuances of a subjective experience to the reader and as such presupposes a sophisticated capacity to read minds. The fictional experience conveyed is typically attributed to some pseudo-fictional persona such as Wordsworth himself as a child or simply to himself in the moment of composition. We keep track of such nested levels of attribution by according each being in the narrative with a complex mental machinery capable of supporting a large variety of invisible and intangible mental states. While we are aware that such states are representationally driven rather than simply reflections of independently existing matters of fact, we expect the person to act *as if* their states were such reflections since we assume mental states cause behavior.

Because we are so familiar with it, mind-reading will inevitably seem trivial and obvious; however, it is clearly an extremely powerful heuristic for making sense of the world. We may term this subspecies of decoupled cognition *metacognition* – the act of thinking about thinking, for instance thinking about someone else's thoughts. Social reality would be wholly mysterious if we lacked this ability, as testified by the experience of autistics, who are thought to have organic

damage in the functional subsystems that handle metacognition (Baron-Cohen 5). Surprisingly, we appear to be the only species endowed with this odd capacity, with the limited exception of chimpanzees (Baron-Cohen 121-26). The field work of Seyfarth and Cheney among vervet monkeys strongly indicate that although they communicate symbolically, they pay no attention to how their calls affect the mental states of their listeners, and appear to have no conception that their listeners have mental states (128).

Wordsworth's Goslar manuscripts, aside from relying on the implicit assumptions that the reader is able to ascribe mental states to the author and his personae, also contain numerous instances of explicit mental-state attribution. However, there is something peculiar about these acts of mind-reading: they do not concern what we would normally consider minds. Characteristic of the poetry is a seemingly indiscriminate attribution of intentions, preferences, desires, and knowledge to rivers, mountains, and vaguely specified invisible entities loosely tied to a location. What is the significance of Wordsworth's ubiquitous anthropomorphisms?

The Demise of the Swiss-army-knife Mind?

Wordsworth's blends, as we have seen, focus on deviations from stable response patterns to indicate an increase in cognitive fluidity. In *The Prehistory of the Mind*, the paleoanthropologist Steven Mithen suggests that just such an increase characterizes the most recent and so far last step in human evolution. Our immediate ancestors, he argues, had sophisticated mental capacities comparable to our own, but their various intelligences – functional specializations for dealing with inanimate objects, with living organisms, and with minds (cf. Wellman and Gelman) – were sharply separated into distinct domains. "[A]ll Early Humans," Mithen writes, referring to hominids from 1.8 million years ago to the emergence of fully modern man 100,000 years ago, "shared the same basic type of mind: a Swiss army knife mentality. They had multiple intelligences, each dedicated to a specific domain of behaviour, with very little interaction between them.… Early Humans seem to have been so much like us in some respects, because they had these specialized cognitive domains; but they seem so different because they lacked a vital ingredient of the modern mind: cognitive fluidity" (146). The archeological evidence shows

that Early Human cultures were remarkably stable over tens of thousands of years, with little geographical variation, in sharp contrast to the rapidly diversifying cultures of *homo sapiens*. The record of the latter's appearance – some 100,000 years ago in Africa and the Middle East, 60,000 years ago in Australia, and 40,000 years ago in Europe – tell the story of ceaseless cultural innovation, multi-design and multi-component tools, ritual burial, and art (26-27). What are the novel cognitive capacities that powered this transformation?

Mithen's explanation is that the barriers that previously insulated the different cognitive domains from each other somehow became porous (70-71). This appears to leave us in a quandary: would not such leakage between domains – perhaps an across-the-board relaxation of input conditions – cause massive conceptual confusion? Precisely such confusion, Mithen retorts, is characteristic of modern humans. Although we have lost the narrative descriptions of the world of our modern forebears, if we can judge from those of contemporary hunter-gatherers, they were characterized by sophisticated cross-domain conceptual blends. The latter's representations of the world are not neatly divided into animals, plants, tools, and social relations. Typically, they "reason about the natural world as if it were a social being" (Mithen 47). The Mbuti of Zaire and other groups in tropical forests conceive of the forest as parent; it is a "giving environment" in the same way as one's close kin are giving (Bird-David 189). The Inuit of the Arctic "typically view their world as imbued with human qualities of will and purpose" (Riddington 471). To the Australian Aborigines, "the wells in the landscape are where their ancestors had dug in the ground, the trees are where digging sticks had been placed, and deposits of red ochre where they had shed blood" (Mithen 47). For modern hunter-gatherers, Tim Ingold writes, "there are not two worlds of persons (society) and things (nature), but just one world – one environment – saturated with personal powers and embracing both human beings, the animals and plants on which they depend, and the landscape in which they live and move" (42).

The case is strong; however, it seems likely that Mithen is misinterpreting the evidence. Consider the use of anthropomorphic models in Wordsworth's Goslar manuscripts. His recreation of himself hinges on this at once primeval and modern conceptual move: the infusing of mental states into the environment. From the first, "was it for this" appeals to a purpose that is attributed to the river as an intentional being; its action, operating directly on his mind to

"intertwine" his dreams, is the emblem of the birth of the imagination (ll. 22, 27). Later, he invokes the "beings of the hills" and "ye that walk the woods and open heaths / By moon or starlight" as imaginary recipients of a mental-state attribute: an affectionate and tutelary desire to "interweave" the child's passion with the "life & nature" (ll. 68-71, 75). Through their "ministry" (l. 89), the spirits

> Impressed upon the stream[s] the woods the hill[s]
> Impressed upon all form[s] the characters
> Of danger & desire & thus did make
> The surface of the universal earth
> With meanings of delight of hope & fear
> Work like a sea. (ll. 91-96)

The result of the spirits' tutelage of the imagination is precisely to map the "surface of the universal earth" with mental states – "meanings of delight, of hope and fear."

The anthropomorphic world is one to feel at home in, and one that clearly belongs to the same family of lived worlds as those of the hunter-gatherers invoked by Mithen. The question is, in what sense did Wordsworth think – or expect his readers to think – that "beings of the hills" were responsible for him as a child? Clearly, his references to spirits are felicitous solutions to the narratological goal of creating the impression of a "favor'd being" (*Prelude 1798-99,* l. 245). They are also, however, *ad hoc* solutions: varieties of spirits are openhandedly proffered and multiplied without restraint. Such abductive conjectures, the cultural anthropologist Pascal Boyer argues, are characteristic of religious conceptions (215). On the one hand, a full and unambiguous complement of inferences can be drawn from the spirits' minds, which are unproblematically modeled on the human: they have intentions informed by causal knowledge and directed by emotion. In sharp contrast, almost nothing can be inferred about the beings' own lives – the normal inferences simply do not apply. We do not ask, for instance, how they came to live in ponds, how they reproduce, or even what they look like. These issues are left vague, open to each person to fill in. In effect, we have a degree of decoupling that exceeds that of mind-reading, since the very status of these beings is kept in a distinct conjectural and poorly specified category. Thus, there are limits to the confusion caused by cognitive fluidity. Order is safeguarded by a relatively clear though not infallible bookkeeping.

What we see is not the breakdown of functional specialization, but the creation of a decoupled space – the imagination – which incorporates a selective blend of elements from several source domains – nature, human psychology, his personal past – to create feelings of having had a privileged childhood. The overarching argument appeals to an intuitive psychology of parental or community investment and responsibility: since "ye spirits" of the springs, the clouds, and the lakes and pools pursued "your favorite and your joy" with such "assiduous love," Wordsworth builds up a strongly felt obligation not to waste this investment, but to cherish it and to claim his birthright as an imaginative being (ll. 80-86). In this way, the emergent properties of the imagined blend feed back into the real course of his own life.

Although Mithen may be overstating the rigidity of the Early Human mind, there can be little doubt about the increased cognitive fluidity of the moderns. In the previous sections, we have seen how dreaming and play, which appear in mammals generally, involve a relaxation of input conditions and the formation of elementary blended spaces. Nevertheless, such decoupled cognition is likely to have been restricted to relatively narrow sets of circumstances such as dream states, juvenile play, and intentional representations dependent on perceptual input. What appears to be novel in modern man hinges on the ability to sustain simulations in the absence of any perceptual input. When Wordsworth speaks of

> …huge & mighty forms that do not live
> Like living men moved slowly through my mind
> By day, and were the trouble of my dreams – (ll. 239-41)

what is being demonstrated is the ability of the brain to generate its own cues for recalling memories, freeing itself from its dependence on the present and perceived. The young Wordsworth is *haunted* and the adult savors the evocation of that event. What makes such complex cross-domain blends possible is the joint power of decoupled thinking and the internally cued recall of explicit episodic memories (cf. Cytowic 321). Bringing together the work of Leslie and Turner, we can now see that decoupled thinking is the creation of a distinct blended space where input conditions can be relaxed since it is separate from primary representation (for a related suggestion, see Sperber 147). The blend consists in elements drawn selectively from features of the various source domains. Its main use is that it has emergent characteristics, and

these feed back into the source domains, informing them in novel and potentially illuminating ways (Fauconnier and Turner).

The rise of modern human beings – *homo sapiens* – appears to coincide with and depend on the emergence of the capacity to recall and process episodic memories from several domains into a privileged decoupled space. The unmistakable sign of the presence of modern, imaginative human beings is the chimera, the fully cross-domain conceptual blend. The earliest surviving European work of art is the lion-man ivory statuette from Hohlenstein-Stadel in Germany, dating back at least 30,000 years (Mithen 153). While its maker no doubt enjoyed the rich sensations of the blended figure, if she had mental capacities like ours, she would in some corner of her mind retain the knowledge that the figure was a product of her imagination, not a literal representation of an actual being. A suite of sophisticated cognitive adaptations has permitted the unleashing of the full power of dreams into the waking mind.

The Self and the Reality Monitor

We are the imaginative people, the waking dreamers. "How can you determine whether at this moment we are sleeping, and all our thoughts are a dream; or whether we are awake, and talking to one another in the waking state?" Socrates asks, and Theaetetus replies that he does not know; "the resemblance of the two states is quite astonishing" (Plato). The contemporary answer is that we have various cognitive adaptations for *source monitoring*, the task of keeping track of such things as the difference between what we are experiencing and what we are merely imagining. Johnson proposes the more specific term *reality monitoring* for the processes involved in discriminating between memories that originate in perceptual experience and those that arise from "thought, imagination, fantasy, dreams and other self-generated processes" ("Reality Monitoring" 6). She suggests that "our ideas of reality and fantasy originate from imperfect attributional processes" (3); notably, memories that arise spontaneously and quickly with a great deal of visual and contextual detail tend to be judged to originate in experience. While these processes are generally reliable, they are "imperfect" and occasionally fail: as Elizabeth Loftus has demonstrated, vividly imagined scenarios are prone to be mistaken for

actual memories. Such failures in the reality monitoring system constitute what Tulving has termed *representational abuse*. One of its effects is the rewriting of memories (Loftus 75).

What drives representational abuse? Wordsworth's suspicion, in the altered and erased lines I cite in the beginning of this essay, is that memories are selected "fondly to adorn / The time of unrememberable being" (19). These doubts appear to have been buried, however, and the final fragment in MS JJ speaks lovingly of

> Those beauteous colours of my early years
> Which make the starting-place of being fair
> And worthy of the goal to which [?she] tends
> Those hours that cannot die those lovely forms
> And sweet sensations which throw back our life
> And make our infancy a visible scene
> On which the sun is shining (ll. 270-76)

The defense of the self by imaginatively recreating a favored childhood is bearing fruit. Here, the claim is that the "beauteous colours," "lovely forms," and "sweet sensations" elicited by the vivid imaginative reconstruction of the past "throw back our life" or take us back to the actual experience of childhood, making "our infancy a visible scene" now, a scene which is objectively real, "On which the sun is shining." Let me draw attention to three components of this claim: the veridical, the experiential, and the causal.

First of all – posing the primary question of reality monitoring – in writing these early lines, is Wordsworth returning to memories of experience or imaginatively constructing a past? In many cases, his biographer Stephen Gill notes, it is impossible to tell: "the only evidence we have is poetic evidence;" however, "Wordsworth did not scruple elsewhere to tamper with 'the facts' if they spoiled an imaginative conception" (7). Speaking of an episode added in early 1799, Jonathan Wordsworth comments, "As is often true in *The Prelude*, despite circumstantial detail we are dealing not with fact, but with poetry of the imagination" (569). Some events are clearly distorted. Most obviously, as Gill points out, the five years that pass between the age of four to his residence at Hawkshead are completely elided – years which were "unsettled and far from uniformly happy." For some unknown reason, William and his sister were packed off to their grandparents; his memories of that time include a contemplated suicide attempt and "a stiff, moody and violent temper." He was never to forget the ill treatment he received (15-16), and his

projection of a whole host of invisible spirits taking on the task of his spiritual education appear in part to compensate for this manifest *lack* of parental investment. As lines 270-76 suggest, the focus is not the past *per se*, but the sensations evoked by its simulation. At the same time, the material is presented as his life story.

Secondly, Wordsworth is implying that once the simulations have been refined to satisfy the emotions (cf. Figure 1), they acquire the sense of "hours that cannot die," not simply in that they will not be forgotten, but in the stronger sense that the *experience* can be reproduced at will, as if the events were taking place in the present. This echoes his initial assertion that he is speaking "of things / That have been and that are" – a dubious contention subsequently struck out. Yet here he is again affirming that his infancy is present as "a visible scene."

On the face of it, these claims amount to a celebratory breakdown of the source monitoring system. The cause is described in detail: the fact that the simulations have been perfected in sweetness is what compels the mind to accept them as true. The poet even invites his audience to collude, shifting imperceptibly from "my early years" (270) to "our infancy" (275). Still, we need not assume that Wordsworth, or we as readers, are literally deceived. Rather, what we are looking at is a controlled delusion, involving the willing suspension of disbelief. For a simulation to access a full range of inferences, it may be optimal to tune the source monitoring system down. We entertain the notion that the simulation is real because this makes it more engaging – a matter of immersion control, which should be distinguished from representational abuse.

However, the simulation of an imagined childhood in a controlled delusion retains a problematic relation to identity. In attempting to "make the starting-place of being fair / And worthy of the goal to which [?she] tends" (ll. 271-72), the poet deliberately creates a past that would legitimize the future he desires. The simulation is proposed to serve as a basis for recalibrating certain values relating to the narrative self. In this case, to the extent that the trait registers are updated on the basis of a fantasy, it is no longer clear that the delusion is controlled; rather, it has gone out of hand. The childhood Wordsworth aims for as a way of justifying his poetic vocation is clearly in part a construction but one that he appears to have lost track of.

Significantly, he *needs* to lose track of it in order to accomplish his purpose; a factual account would not be equally empowering.

If this is self-deception, it may appear to be healthy and desirable. Wordsworth is simply changing his self-image in a beneficial direction, enabling him to undertake the arduous task of a poetic vocation. Yet there is something both incoherent and troubling in the stance that self-deception is all for the best; it amounts to an act of relinquishing oneself to the arbitrary power of a concealed mechanism. It may be helpful to recall the case of Ramachandran's patient, Mrs. B.M., as described in the introduction. The impulse is identical: she imagines and posits as true a past that supports a preferred and empowering image of herself – an image she acts on as though it were the characteristics of a real entity, herself. While an impairment in some aspect of the reality monitoring system is presumably to blame for the much sharper contrast between the simulation and reality than that Wordsworth generates, this contrast still highlights the delusive nature of the process.

It is deeply puzzling, however, that the self-image should be what drives delusion out of hand. "A self," Johnson writes, "is a byproduct of reality monitoring processes that distinguish perceptually-derived from reflectively-generated information." She argues that the self-as-source forms a locus for the attribution of the reflectively generated information, while the phenomenology of the self-as-controller arises in various interactions of the reality monitoring system, notably between the perceptual and logical levels ("Reflection" 13). This model provides a plausible origin for the homuncular self. However, it does not address the central issue of this essay: the distorting action of the self, its role in representational abuse and the rewriting of memories. How can we explain the fact that the self, which credibly arises in the process of reality monitoring, appears to spur an orchestrated *failure* of just this process?

If the self-as-source is designed as a heuristic to differentiate "I think" from "you think" and – supplemented by an inner phenomenology of agency – "I imagine" from "I remember," the stage is set for a fifth-column rebellion. It is all too tempting to conclude, in an inference Descartes did no more than make explicit, that "I think, therefore I am" (54). Because thinking and feeling are attributed to the homuncular self, there is only a small step to the fallacy that it must be a real entity. That we all have a subjective *feeling* of the self-as-source is merely a part

of the problem: I would contend – and challenge my readers to investigate for themselves – that this feeling is not a perception of an actual entity, but a projection from memory. At the heart of the attributional system of reality monitoring appears to be a *bona fide* delusion. And when the self-as-source (the homuncular self) is mistakenly taken to be a real entity, the rot inevitably spreads: the content of the self-as-story (the narrative self) is experienced as actual dimensions of one's being. I suggest that this is what drives Wordsworth's simulation of his childhood, in a mix of reflective and perceptual memories, from a controlled delusion towards one that slips out of hand.

Returning to the intentionality diagram for a moment, we see that the simulation loop is sustained on one side by the emotional imperatives of the limbic system. The representational power of the neocortex responds with an imaginative projection pleasing to the limbic brain – for instance, an autobiographical narrative. The projection of pleasure, which triggers a flood of neurochemicals, sets up a pressure for that projection to be sustained. In the absence of perceptual input, this process will tend to be dissipated through the effect of reality monitoring or cognitive proprioception as it depends solely on memories and has no grounding in an independent reality. So how is the pleasure of the autobiographical narrative sustained? This is where the narrative self-as-being enters. As a heuristic in the reality monitoring system, the mind has created an imaginary inner self – a homunculus of sorts, which is given the role of experiencer, thinker, and observer. If this heuristic place-holder is taken literally – if it is assigned being – it starts to radically undermine the reality monitoring function. Positing a presence, an ontic inhabitant, in virtual reality has the effect of suppressing cognitive proprioception and lending reality to the unreal, to create a sense of urgency and relevance to simulations that the reality monitoring system would have rejected as worthless projections. It creates a locus for being and experience inside the projected world of the mind – precisely the kind of effect the reality monitoring systems are designed to prevent.

Again, Mrs. B.M.'s defensive reaction, as well as her induced lucidity, present a more starkly illuminated portrait of the underlying mechanisms. The defensiveness indicates that the reality monitoring system is in fact operating, successfully distinguishing "I imagine" from "I perceive" and "I remember perceiving." The self-as-source appears to be treated as a being

whose narrative characteristics are enacted as real: the corrected self-image incorporating information about the paralysis is experienced as aversive and rejected. That the defense can be carried through in the face of blatant contrary evidence must be chalked up to organic damage in the right hemisphere (see Ramachandran for an extended discussion). So how is she able to snap out of this uncontrolled delusion? When the reality monitoring system is itself infected with illusion, its removal could prompt a return to reality. The cold-water irrigation appears to induce a partial REM-state in Mrs. B.M., perhaps by inhibiting the breakdown of acetylcholine.[13] Since this state by natural design does not employ source monitoring, this may eliminate the experiential delusion of the self-as-source. Freed of the overwhelming significance of the self-representation, Mrs. B.M. can calmly face the facts. This circumstance has the paradoxical net effect of permitting dreams – the technology of illusion – to voice truths the waking mind suppresses due to an error at the heart of the source monitoring system.

The implication of this model is that there is an aspect of the self – the narrative self as being – that arises as a form of representational abuse within the system of reality monitoring. We may think of this distorting aspect of the self as a cognitive analog to the human immuno-deficiency virus, which attacks the immune system itself. The function of the narrative self-as-being appears to be to *override* cognitive proprioception in a bid to prolong the pleasures of virtual reality. The self thus stabilizes the intentional representations of desire, which permits a focused, long-term intentional identity.

However, one of the arbitrary results of the self-deception involved in taking the projected "beauteous colours" for truthful memories constituting the "sweet sensations" of a present being is that there is no way to prevent other memories, less gratifying to the emotional centers, from also being taken to characterize the self-as-source and giving rise to a strongly aversive reaction. At the end of the period of composition, Wordsworth acknowledges this backlash. He elaborates and gives increasing reality to an autobiographical self – the chimera of a narrative and an hypostatized inner agent – that aids and abets in the creation of vivid, convincing, and emotionally satisfying fantasies. On the one hand, the explicit recall of episodic memories and their conceptual blending permit human beings to reconceptualize and change themselves, to recreate what they are. On the other, this renarration produces stories, not being,

and the failure to realize this comes at a cost. A waking dreamer, Wordsworth walks around in their rooms at Goslar "absolutely consumed by thinking and feeling and bodily exertions of voice or of limbs" (Wordsworth and Wordsworth 236), not unlike one of Jouvet's lesioned cats. "I knew not then," he writes, after the feverish first period of composition is over, "…that the day would come"

> When after loathings damps of discontent,
> Returning ever like the obstinate pains
> Of an uneasy spirit, with a force
> Inexorable would from hour to hour
> For ever summon my exhausted mind. (*Prelude 1798-99* 165)

This stark reminder of the on-going psychological pain hinted at in the December letter to Coleridge places the whole autobiographical project in a new light. The attempt to base the self on pleasant and empowering images must engage in a continuous and frustrating battle with negative thoughts, "after loathings damps of discontent." The *Prelude* Wordsworth ended up sharing with his friends and through the following decades expanded and prepared for publication leaves no trace of this agony.

Wordsworth's attempt to create a novel and powerful identity succeeds, and in some sense lays the basis of his poetic career. At this moment, however, when the period of frantic composition is over, he momentarily draws a very different lesson, illuminating in its simplicity. In a dramatic reversal, "I seemed to learn," Wordsworth continues,

> That what we see of forms and images
> Which float along our minds & what we feel
> Of active or recognizable thought
> Prospectiveness or intellect or will
> Not only is not worthy to be deemed
> Our being, to be prized as what we are
> But is the very littleness of life (*Prelude 1798-99* 165)

The autobiographical project unravels. The crucial insight is that thoughts and feelings – indeed, the entire phenomenology of cognition – are processes, visualized as representations "that float along our minds." They are no longer attributed to the self-as-source, as proof of its existence and central significance, thus reversing the Cartesian move. This frees the mind from the delusion that we *are* our representations; as processes, they are "not worthy to be deemed / Our being, to be prized as what we are." The claims of literal truth and experiential presence are

abandoned; the content of consciousness is stripped of its excessive valorization and – perhaps again excessively – dismissed as "the very littleness of life." "Such consciousness I deem but accidents," he goes on,

> Relapses from that one interior life
> That lives in all things sacred from the touch
> Of that false secondary power by which
> In weakness we create distinctions, then
> Believe that all our puny boundaries are things
> Which we perceive and not which we have made (*Prelude 1798-99* 165)

"Such consciousness" is further characterized as "that false secondary power" – the power, broadly, to deceive oneself – "by which in weakness we create distinctions." What is this weakness? Is it a description of his own crisis of identity, a psychological weakness he has sought to remedy through an imaginative recreation of "the beauteous colours" of his early years? If so, the "distinctions" relate to the attempt to fashion an identity selectively out of memory, a project fraught with frustration and condemning him to battle negative self-images. In light of this project, the solution is radical: to distinguish between what is reflectively generated by thought and projected in consciousness as that "which we have made" from an independently existing reality "[w]hich we perceive." It is a return to reality monitoring to reestablish psychological health.

In contrast to the imagined self, the "one interior life" is held up as untouched by the deceptive power of thought. The appeal is to our subjective experience of sentience, so close to us and yet so poorly understood. Pinker suggests it is one of those things the design of the human mind prevents us from understanding (*How* 558-65). It appears to have no features, but "lives in all things" – at once interior and without boundaries. While the autobiographical self is discarded as ultimately trivial and illusory, our true being is undifferentiated and absolute, one

> – In which all beings live with god themselves
> Are god existing in one mighty whole
> As undistinguishable as the cloudless east
> At noon is from the cloudless west when all
> The hemisphere is one cerulean blue (*Prelude 1798-99* 165)[14]

This transcendental state, Wordsworth appears to be saying, cannot be realized until the problem of reality monitoring has been solved. This solution entails the end of the autobiographical self,

now seen to be a delusory product of "that false secondary power." The fictional is here not merely decoupled, but abolished into an "undistinguishable" and "mighty whole."

This ultimate – if momentary – disavowal of the imagination and the waking dream finds its neurological counterpart in the *locus ceruleus*, a nuclear structure in the pons, just above the medulla oblongata and bordering on the fourth ventricle (Jouvet, Hobson 184-85). Its cerulean blue (the neurotransmitter norepinephrine, manufactured in its cell bodies and visible to the naked eye), mediated through an extensively branching axonal network that distributes its influence throughout the brain, functions to inhibit the excitatory activity of the giant pontine reticular neurons that induce the REM state and its phantasmagoric dreams.

Concluding Remarks

Introspection is a fallible guide to the mind. Even more than Freud, the cognitive sciences see the vast bulk of mental operations as inaccessible to conscious awareness. There is one circumstance, however, where attention to the movement of one's own thoughts is precisely what is called for: that of self-deception. Self-deception implies not only a corrigible mistake but a continuing action to prevent the correction of that mistake. In the case of the autobiographical self-as-being, the realization that the feelings of a stable self are generated by thought rather than by an independently existing reality requires paying careful attention to the urge to conceal this fact and to the discomfort generated by the possibility of its revelation. Punctuating the ongoing attempt to construct a novel self out of memory and desire, a flash of insight, hard to sustain, may momentarily lay bare the limitations of this project, "as if a magic lantern threw the nerves in patterns on a screen" (Eliot 12).

My primary interest in developing this model of self-deception in an engagement with Wordsworth's poetry has been to understand a general phenomenon and to illuminate a subtle process of the mind through the record left in acts of poetic creation. The analysis nevertheless leaves some tantalizing questions relating to Wordsworth's poetical career. Is it functional to deceive oneself? Did the act of reimagining his childhood to legitimate his poetic claims indeed generate the stable identity that permitted him to perform his work as a poet? Or does confusing

an autobiographical narrative, however engaging, with "what we are" create and sustain an identity – a set of traits and intentional representations – that is repetitive and lacking in flexibility?

At first blush, Wordsworth's project of self-creation appears to have been a resounding success. It met the challenge posed by Wedgwood by projecting a childhood rich in imaginative power and emotional connections with nature, providing evidence that the human mind is exquisitely fitted to the natural world. Through the act of reimagining his childhood, he appears not only to have gained confidence and inspiration, but to have worked out the broad emotionally engaged ideological framework for his poetry. These results would have been highly significant in turning him into a productive poet.

Why, then, did his powers wane so dramatically as the years passed? We might speculate that while his novel renarrated self proved adequate for several years of productive poetry, his increasing rigidity in later life was connected with his inability to sustain his insight into the central significance of reality monitoring. Hypostatizing the story in which he reimagines his childhood and youth into his very being dampens the effect of the reality monitor and permits the formation of a stable identity, but it also creates an excessive rigidity in the mind as it becomes locked into a narrow set of repeated intentional representations – a frozen persona.

Perhaps what the mind needs to do, as Wordsworth momentarily demonstrates in the cerulean fragment, is to suspend belief in the self and allow the mind to play again, so that the normal reality monitoring can resume. Such a move is likely to be destructive to the delusional circuits of identity – a mild creative breeze, perhaps, or a mighty and disturbing tempest: not a transformation with a fixed and final endpoint, but an ongoing self-creation.

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Notes

I am extremely grateful to Thomas Smith, the special editor of this volume, for providing me with incisive and detailed feedback on the first and very sketchy version of this essay, and to Charles Bazerman, Brian Boyd, Joseph Carroll, Howard Gardner, Matt Garland, Paul Hernadi, David Miall, Alan Richardson, Ellen Spolsky, Bert States, Mark Turner, and Lisa Zunshine for their enlightened comments and suggestions.

1. See for instance the proceedings of the Conference on Metarepresentation at Simon Fraser University in February 1997, edited by Dan Sperber and forthcoming in Oxford UP's Vancouver Studies in Cognitive Science Series.

2. See for instance Spolsky, Turner, and Crane and Richardson.

3. See for instance the theoretically sophisticated yet popularly presented work of Damasio and Ramachandran.

4. Clark's investigations into "extended brain-body-world systems as integrated computational and dynamic wholes" (215) provide a hands-on, operational perspective on Romantic notions of organic unity.

5. See for instance Tooby and Cosmides.

6. Letter to James Tobin, 6 March 1798; in Wordsworth and Wordsworth 212.

7. For Wordsworth's identity problems at the time, see Gill 117-19.

8. The citations are from Thomas Wedgwood’s letter to William Godwin, 31 July 1797, which Erdman reprints in its entirety 430-33.

9. This and subsequent quotations from the 1798 *Prelude* are identified by the line numbers used in Parrish's cleaned-up transcription of MS JJ in Wordsworth *Prelude 1798-99* 123-30. An edited version of the passages can be found in Wordsworth *Prelude 1799* 487-96.

10. For an extended discussion, see Erdman 497-98.

11. For a model of an adaptively selective suppression of perceptual input, see Symons.

12. I am grateful to the neuroscientist And Umit Turken for conversations that led to the ideas behind this figure.

13. Ramachandran does not give an explanation for this bizarre effect. At the Psychonomic Society's annual meeting in Los Angeles in 1996, he speculated that cold water administration triggers the brainstem nuclei that are active during REM sleep and are responsible for increased cholinergic activity during that period (And Umit Turken, personal communication; cf. Hobson 184-202).

14. Parrish's transcription includes penciled suggestions I have omitted; for an edited version, see Wordsworth, *Prelude 1799* 495-96.

Works Cited

Aserinsky, Eugene, and Nathaniel Kleitman. "Regularly Occurring Periods of Eye Motility, and Concomitant Phenomena During Sleep." *Science* 118 (1953): 273-78.

Baron-Cohen, Simon. *Mindblindness: An Essay on Autism and Theory of Mind*. Cambridge, MA: MIT P, 1995.

Bird-David, Nurit. "The 'Giving Environment': Another Perspective On the Economic System of Gatherer-Hunters." *Current Anthropology* 31 (1990): 189-96.

Boyer, Pascal. *The Naturalness of Religious Ideas. A Cognitive Theory of Religion.* Berkeley, CA: U of California P, 1994.

Clark, Andy. *Being There: Putting Brain, Body, and World Together Again*. Cambridge, MA: MIT P, 1997.

Crane, Mary, and Alan Richardson. "Literary Studies and Cognitive Science: Towards a New Interdisciplinarity." *Mosaic*. Forthcoming.

Cytowic, Richard E. *The Neurological Side of Neuropsychology*. Cambridge, MA: MIT P, 1996.

Damasio, Antonio. *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: G.P. Putnam, 1994.

Dement, William. "The Occurrence of Low Voltage, Fast, Electroencephalogram Patterns During Behavioral Sleep In the Cat." *Electroencephalography and Clinical Neurophysiology* (Amsterdam) 10 (1958): 291-96.

Dennett, Daniel C. "Cognitive Wheels: The Frame Problem of AI." *Minds, Machines, and Evolution*. Ed. Christopher Hookway. Cambridge: Cambridge UP, 1984. 129-151.

Descartes, René. *Discourse on Method and the Meditations*. Tr. F. E. Sutcliffe. London: Penguin, 1968.

Eliot, Thomas S. *Collected Poems, 1909-1962*. New York: Harcourt, 1963.

Erdman, David V. "Coleridge, Wordsworth, and the Wedgwood Fund." *Bulletin of the New York Public Library* 60 (1956): 425-43, 487-507.

Fauconnier, Giles, and Mark Turner. "Conceptual Integration Networks." *Cognitive Science.* In press.

Farah, M.J. "Psychophysical Evidence for a Shared Representational Medium for Mental

Imagery and Percepts." *Journal of Experimental Psychology: General* 114 (1985): 91-103.

Frith, Chris, and Ray Dolan. "The Role of the Pre-frontal Cortex in Higher Cognitive Function." *Cognitive Brain Research* 5 (1996): 175-81.

Gazzaniga, Michael S., ed. *Conversations in the Cognitive Neurosciences*. Cambridge, MA: MIT P, 1997.

Gill, Stephen. *Wordsworth: A Life*. Oxford: Oxford UP, 1989.

Hartley, David. *Observations on Man, His Frame, His Duty, and His Expectations*. Bath, 1749.

Hobson, J. Allen. *The Dreaming Brain*. New York: Basic, 1988.

Huizinga, Johan. *Homo Ludens: A Study of the Play Element in Culture*. New York: Harper, 1970.

Ingold, Tim. "Comment on 'Beyond the Original Affluent Society' by N. Bird-David." *Current Anthropology* 33 (1992): 41-42.

Jackendoff, Ray. *Consciousness and the Computational Mind*. Cambridge, MA: MIT P, 1989.

Johnson, Marcia K. "Reality Monitoring: Evidence from Confabulation in Organic Brain Disease Patients." *Awareness of Deficit after Brain Injury. Clinical and Theoretical Issues*. Ed. George P. Prigatano and Daniel L. Schacter. New York: Oxford UP, 1991. 176-97.

———. "Reflection, Reality Monitoring, and the Self." *Mental Imagery*. Ed. Robert G. Kunzendorf. New York: Plenum, 1991. 3-16.

Jouvet, Michel, and Delorme, F. "Locus coeruleus et sommeil paradoxal." *Comptes Rendus des Séances et Mémoires de la Société de Biologie* 159 (1965): 895-99.

Kant, Immanuel. *Critique of Pure Reason*. Trans. Norman Kemp Smith. New York: St. Martin's, 1964.

Klein, Stanley B., and Judith Loftus. "The Mental Representations of Trait and Autobiographical Knowledge about the Self." *Advances in Social Cognition*. Ed. T.K. Sruli and R.S. Wyer. Vol. 5. Hillsdale, NJ: Erlbaum, 1993. 1-49.

Lakoff, George. *Women, Fire, and Dangerous Things: What Categories Reveal about The Mind*. Chicago: U of Chicago P, 1987.

Leslie, Alan M. "The Necessity of Illusion: Perception and Thought in Infancy." *Thought*

Without Language. Ed. Lawrence Weiskrantz. Oxford: Clarendon, 1988. 185-210.

Locke, John. *An Essay Concerning Human Understanding*. London, 1690.

Loftus, Elizabeth F. "Creating False Memories." *Scientific American* 277.3 (December 1997): 70-75.

McCarthy, J., and P.J. Hayes. "Some Philosophical Problems from the Standpoint of Artificial Intelligence." *Machine Intelligence*. Ed. Bernard Meltzer and Donald Michie. Vol. 4. New York: American Elsevier, 1969. 463-502.

Mithen, Steven J. *The Prehistory of the Mind: The Cognitive Origins of Art, Religion and Science*. Cambridge: Cambridge UP, 1996

Pinker, Steven. *The Language Instinct*. New York: Morrow, 1994.

_____. *How the Mind Works*. New York: Norton, 1997.

Plato. *Theaetetus*. Trans. Benjamin Jowett. Internet Classics Archive, http://classics.mit.edu.

Ramachandran, Vilayanur S. "The Evolutionary Biology of Self-Deception, Laughter, Dreaming and Depression: Some Clues from Anosognosia." *Medical Hypotheses* 47 (1996): 347-62.

Riddington, R. "Technology, World View and Adaptive Strategy in a Northern Hunting Society." *Canadian Review of Sociology and Anthropology* 19 (1982): 469-81.

Roffwarg, Howard, Joseph Muzio, and William Dement. "Ontogenetic Development of the Human Sleep-Dream Cycle." *Science* 152 (1966): 604-17.

Seyfarth, Robert M., and Dorothy L. Cheney. "Meaning and Mind in Monkeys." *Scientific American* 267.6 (December 1992): 122-28.

Sperber, Dan. *Explaining Culture: A Naturalistic Approach.* Oxford: Blackwell, 1996.

Spolsky, Ellen. *Gaps in Nature: Literary Interpretation and the Modular Mind.* Albany: State U of New York P, 1993.

States, Bert O. *Seeing in the Dark: Reflections on Dreams and Dreaming.* New Haven, CT: Yale UP, 1997.

Symons, Donald. "The Stuff That Dreams Aren't Made of: Why Wake-State and Dream-State Sensory Experiences Differ." *Cognition* 47 (1993): 181-217.

Tooby, John and Leda Cosmides. "The Psychological Foundations of Culture." *The Adapted*

Mind: Evolutionary Psychology and the Generation of Culture. Ed. Jerome H. Barkow, Leda Cosmides, and John Tooby. Oxford: Oxford UP, 1992. 19-136.

Tulving, Endel. "What is Episodic Memory?" *Current Directions in Psychological Science* 2 (1993): 67-68.

Turner, Mark. *The Literary Mind*. New York: Oxford UP, 1996.

Turner, Mark, and Gilles Fauconnier. "Conceptual Integration and Formal Expression." *Metaphor and Symbolic Activity* 10 (1995): 183-203.

Wellman, Henry M,. and Susan A. Gelman. "Cognitive Development: Foundational Theories of Core Domains." *Annual Review of Psychology* 43 (1992): 337-75.

Wordsworth, Jonathan. "The Two-Part *Prelude* of 1799." In William Wordsworth, *Prelude 1799*. 567-85.

Wordsworth, William. *Home at Grasmere*. Ed. Beth Darlington. Ithaca, NY: Cornell UP, 1977.

———. *The Prelude, 1798-1799*. Ed. Stephen Parrish. Ithaca, NY: Cornell UP, 1977.

———. *The Prelude: 1799, 1805, 1850.* Ed. Jonathan Wordsworth, Stephen Gill, and M.H. Abrams. New York: Norton, 1979.

Wordsworth, William, and Dorothy Wordsworth. *The Letters of William and Dorothy Wordsworth. The Early Years 1787-1805*. 2nd ed. Ed. Ernest de Selincourt and Chester L. Shaver. Oxford: Clarendon – Oxford UP, 1967.