

**The *Scientific Romances* of Charles Howard Hinton: The Fourth Dimension as
Hyperspace, Hyperrealism and Protomodernism**

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Abstract

This thesis examines the epistemological, socio-cultural and aesthetic impact of the hyperspace philosophy of Charles Howard Hinton, as expressed within his two-volume collection of *Scientific Romances* (1884-1896). Hinton's hyperspace philosophy is founded on the belief that the fourth dimension exists as a transcendental yet material space that is accessible to both the mind and the physical senses. Inspired by Immanuel Kant's discussion of space as an *a priori* intuition, Hinton's project is one of consciousness expansion: he argues that 'a new era of thought' can be attained through the recognition of the fourth dimension. The thesis demonstrates that, in the *Scientific Romances*, Hinton seeks to engender the 'reality' of the fourth dimension within the reader's imagination through the collaboration of reader and author. Hinton's hyperspace philosophy is thus concerned with mediation, the ways in which the consciousness thinks and creates with and through the aesthetics of space. In addition to providing the most developed analysis of Hinton's writing to date, this thesis examines the work of Hinton's contemporaries, exploring the ways in which the discourse of the fourth dimension can offer new readings of familiar literary texts. A recurring explanatory device throughout hyperspace philosophy is the dimensional analogy, and the thesis illustrates how this trope resonates across the work of contemporary writers including Lewis Carroll, H. G. Wells, Henry James, Friedrich Nietzsche and William James.

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Abbreviations

- SR 1* 'What is the Fourth Dimension'
SR 2 'The Persian King'
SR 3 'A Plane World'
SR 4 'A Picture of Our Universe'
SR 5 'Casting out the Self'
SR 6 'On the Education of the Imagination'
SR 7 'Many Dimensions'
SR 8 'Stella'
SR 9 'An Unfinished Communication'
- AA* Alice's Adventures in Wonderland and Through the Looking-Glass and What Alice Found There, *The Annotated Alice: The Definitive Edition*
AN *The Art of the Novel: Critical Prefaces*
AR *The Act of Reading: A Theory of Aesthetic Response*
DK *Dying to Know: Scientific Epistemology and Narrative in Victorian England*
DP *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth-Century Fiction*
EA *Experiment in Autobiography: Discoveries and Conclusions of a Very Ordinary Brain, Since 1866*
EF *Energy Forms: Allegory and Science in the Era of Classical Thermodynamics*
FD *The Fourth Dimension*
FDNG *The Fourth Dimension and Non-Euclidean Geometry in Modern Art*
FDV *Four-Dimensional Vistas*
FEI *From Energy to Information: Representation in Science and Technology, Art, and Literature*
HJRI *Henry James and the Structure of the Romantic Imagination*
IM *The Invisible Man: A Grotesque Romance*
IR *The Implied Reader: Patterns of Communication in Prose Fiction from Bunyan to Beckett*
JC 'The Jolly Corner'
LS *The Logic of Sense*
MT *The Meaning of Truth*
MV *Mathematical Visions: The Pursuit of Geometry in Victorian England*
NET *A New Era of Thought*
NT *The Nick of Time: Politics, Evolution, and the Untimely*
OF *Open Fields: Science in Cultural Encounter*
PP *The Principles of Psychology*
PU *A Pluralistic Universe*
SFF *The Search for Form: Studies in the Structure of James's Fiction*
SP *The Spoils of Poynton*
STP *Space, Time and Perversion: Essays on the Politics of Bodies*
TSZ *Thus Spake Zarathustra*
TTM *The Time Machine: An Invention*
UT II 'On the Uses and Disadvantages of History for Life'
WB *The Will to Believe and Other Essays*
UU *The Unseen Universe, or, Physical Speculations on a Future State*

Preface

At the conclusion of her study of spatial metaphors in the discourses of science and literature in the first half of the nineteenth century, Alice Jenkins writes:

Though pathbreaking work has been done to uncover various kinds of (mainly urban) spatial practice, there is a great deal more to be done before we can understand the full range of the period's spatial imagination. [...] We have yet fully to explore the cultural life of the imaginary, the hypothetical, and the abstract spaces in which no nineteenth-century person walked, but with and through which they thought.¹

This study takes up Jenkins's challenge by uncovering a nearly forgotten kind of 'spatial practice' of the second half of the nineteenth century: the discourse of hyperspace philosophy. My focus remains very specific: I examine the concept of the spatial fourth dimension as expressed by Charles Howard Hinton in his *Scientific Romances* (1884-1886). Hinton published other texts, and while I have drawn upon these writings to supplement my analysis, my primary focus remains on the *Scientific Romances*. I have chosen to maintain this focus because of the obscure nature of Hinton's writing; his work remains relatively unexamined within current literary criticism and my discussion seeks to correct this oversight by offering the most thorough reading of Hinton's most popularly accessible texts to date.

I have structured this thesis as organically as possible in order to avoid a reductive, 'background' treatment of the discursive, 'non-literary' texts under examination. I position exegeses of Hinton's meditations on higher space alongside analyses of his narrative texts and the work of more familiar writers such as Lewis Carroll, H. G. Wells, Henry James, Friedrich Nietzsche and William James. Thus, this study is divided into three major 'sections', rather than shorter chapters. My decision to structure this thesis in such a manner is influenced by the writers I am examining, particularly what William James describes as his process of 'ambulation', where

‘knowing [...] is made by the ambulation through the intervening experiences’.² Drawing on Richard Hocks, who convincingly argues that Henry James embodies a similar approach in his fictional aesthetic, I have interpreted this methodology of ‘ambulatory relations’ as a constant reassessment of familiar texts and ideas in light of fresh evidence.³ I argue that Hinton employs a similar strategy throughout his *Scientific Romances*, and it is my belief that the relevance of applying this methodology to my own work will become apparent over the course of this study.

In Section One I introduce the concept of the spatial fourth dimension and contextualise it within the rise of non-Euclidean geometry in the nineteenth century. I also discuss the philosophical influence that Immanuel Kant and Hinton’s father, James Hinton, had on Hinton’s hyperspace philosophy, illustrating how Hinton builds upon Kant’s claim that the intuition of space is the *a priori* perception through which all empirical observation is mediated. Drawing upon Ernst Cassirer’s work on language and myth, I examine texts from the First Series of Hinton’s *Scientific Romances*, arguing that the concept of the fourth dimension of space is the result of the hypostatisation of the language of analytical algebra. To conclude this first section, I examine hyperspace philosophy as a particularly ‘Victorian’ concept, by reading it alongside Lewis Carroll’s *Alice* books.

This first section is the groundwork that allows for the ‘ambulatory’ approach taken in Sections Two and Three of this thesis. In these two sections, I often refer back to previously discussed texts and concepts, revising and reinterpreting my own analysis of Hinton’s writing. In the second section, I begin my exploration of the Second Series

¹ A. Jenkins, *Space and the ‘March of Mind’: Literature and the Physical Sciences in Britain, 1815-1850* (Oxford: Oxford University Press, 2007), p. 234.

² W. James, *The Meaning of Truth* (Cambridge, MA and London: Harvard University Press, p. 79)

³ See R. Hocks, *Henry James and Pragmatistic Thought: A Study in the Relationship between the Philosophy of William James and the Literary Art of Henry James* (Chapel Hill: University of North Carolina Press, 1974), particularly pp. ix-x, and 38-47.

of Hinton's *Scientific Romances* by examining some of the socio-cultural implications of Hinton's hyperspace philosophy. This discussion begins with my reading of Hinton's novella about an invisible woman, 'Stella'. Hinton's novella precedes Wells's *The Invisible Man* by two years and—as I argue—clearly influenced Wells's text. The fact that Hinton's story is about an invisible *woman*, as opposed to Wells's invisible *man*, is significant, and in my analysis of these two texts, I draw upon recent feminist theory as well as the contemporary work of Havelock Ellis to explore the ways in which invisibility can be coded as a gender-specific condition. The visual uncanniness of invisibility is an important factor in this discussion, particularly with reference to Wells's novel. Thus, in this section, I also contextualise 'Stella' and *The Invisible Man* within the 'X ray mania' that began with the first publication of X-ray images, late in 1895. I argue that this discovery not only bolstered the scientific legitimacy of hyperspace philosophy, but also drew attention to the constructed nature of the cultural framing devices of class and gender. In the final part of this middle section, I turn to examine the impact of Hinton's hyperspace philosophy on Wells, identifying and examining what the critic William J. Scheick has called the 'splintering frame' technique in a number of his texts.⁴

My discussion of Wells in Section Two of this thesis leads into an examination of Henry James in the final section. I begin Section Three by illustrating the shared aesthetic concern with framing and consciousness-expansion within the writing of both Wells and James. In my discussion of James, I read a number of his texts through the lens of the dimensional analogy of hyperspace philosophy, illustrating the ways that the relationship between the Jamesian centre of consciousness and James himself can be understood as a 'hyperreal' encounter. My discussion of James's short story, 'The

⁴ W. J. Scheick, *The Splintering Frame: The Later Fiction of H. G. Wells* (Victoria, BC: Victoria University Press, 1984)

Jolly Corner' informs my reading of a text from Hinton's Second Series of *Scientific Romances*, a short story entitled 'An Unfinished Communication', which I examine alongside Nietzsche's *Thus Spake Zarathustra*. Here I explore the ways in which James, Hinton and Nietzsche all offer a spatialised conception of time in their writing. Finally in this section, I turn to examine the relationship between Hinton's hyperspace philosophy and the work of William James, particularly through Hinton's correspondence with William James and their shared interest in the 'mother sea' metaphor of consciousness, as expressed by German psychologist and mystic, Gustav Theodor Fechner. I conclude this thesis by looking toward the occlusion of hyperspace philosophy in the twentieth century, with reference to the rise of Einstein's Relativity Theory and Henri Bergson's concept of *la durée pure*. The organising principle—the focus to which my discussion throughout this thesis always returns—is Hinton's hyperspace philosophy as expressed in the *Scientific Romances*.

A final remark must be made concerning the terms given in the subtitle of this study. The 'hyperspace' to which I refer expresses Hinton's conceptualisation of the fourth dimension of space that transcends the everyday, three-dimensional space of 'lived' reality. Hinton views the hyperspace of the fourth dimension as a material, 'real' space that can be accessed by the human being. I describe Hinton's hyperspace philosophy as 'protomodernism' because, as I will illustrate throughout this thesis, his project is a transitional one. While offering a celebration of relativism by challenging the positivistic scientific epistemology of the nineteenth century, Hinton's hyperspace philosophy is also reliant upon this epistemology. There is thus a sense of anxiety that underlies his project concerning the dissolution of the very modes of thinking that he seeks to challenge. Finally, the term 'hyperrealism' appears to have two, almost opposing, critical interpretations, and I draw upon both throughout my examination of

the intersection of science and romance in Hinton's hyperspace philosophy. The more familiar usage of this term, which I deal with most specifically in the first section, is influenced by Jean Baudrillard's work on the simulacrum. The second application of 'hyperrealism' becomes relevant later in this study, particularly in my discussion of the dimensional analogy to the fiction of Henry James. Here I have in mind Gillian Beer's remark that 'awareness of slippages within representation—the scrupling at terms and disavowal of any exact reference—may be a form of hyper-realism: an assertion that there is an “out there” so powerfully *sui generis* that it cannot be captured by already existing terms'.⁵ Paradoxically, both interpretations of hyperrealism imply a celebration of textuality—mediation—and the conflicting desire for transcendence of mediation. Hinton's writing similarly oscillates between these two modes of hyperrealism. Thus, I describe his hyperspace philosophy as a kind of 'transcendental materialism', where transcendence is not sought through emancipation from the medium of space—in Hinton's writing, the fundamental way in which the human consciousness encounters and creates 'reality'—but rather it is to be gained by working *within* it. The spatial fourth dimension becomes, for Hinton, a kind of aesthetic, a means not only of approaching life, but also of creating it. In ambulating between the work of Hinton and that of his contemporaries, this study provides an examination of the 'cultural life of the imaginary' space of the fourth dimension.

⁵ G. Beer, 'Wave Theory and the Rise of Literary Modernism', in *Open Fields: Science in Cultural Encounter* (Oxford: Clarendon Press, 1996), pp. 295-318, p. 306. I will refer to this collection as OF.

Section One: *Scientific Romances*, the First Series

Introduction: the 'new geometries' and the dimensional analogy

In her study, *The Fourth Dimension and Non-Euclidean Geometry in Modern Art*, the art historian Linda Dalrymple Henderson connects the shift from the traditionally mimetic aesthetic of the nineteenth century to the more abstract forms of art generally described as 'Modernist', to a similar shift in late Victorian geometry.¹ Of the appeal of the new geometries for early Modernist artists, Henderson writes that 'traditional means of rendering objects could hardly be adequate if no absolute, unchanging form for an object could be posited' (p. 6). The challenging of Euclid's axioms of geometry, long thought to be self-evident truths, added, as Henderson observes, 'to the growing recognition in the nineteenth century of the relative nature of the mathematical or scientific "truths" that man [sic] can discover' (p. 6). Once mathematicians accepted that Euclid's postulates did not outline the only possible coherent system of geometry, a new landscape opened up for them to define and map; the possibilities were limited only by the necessity for internal coherence within each new system. By the 1880s, popularised accounts of the new geometries were reaching the lay public in Britain and North America, as well as other parts of Europe and Russia. The spirit of invention and speculation spread from mathematicians to a sector of the interested public, as is reflected in the popular literature of the time.

¹ *The Fourth Dimension and Non-Euclidean Geometry in Modern Art* (Princeton: Princeton University Press, 1983), see particularly pp. 3-116. I will refer to this text as *FDNG*. See also T. Gibbons, 'Cubism and "The Fourth Dimension" in the Context of the Late Nineteenth-Century and Early Twentieth-Century Revival of Occult Idealism', in *The Journal of Warburg and Courtauld Institutes* 44 (1981): 130-147, and M. Antliff, 'The Fourth Dimension and Futurism: A Politicized Space', in *The Art Bulletin*, 82 (2000): 720-733.

The popular literature that addressed these new geometries was particularly fascinated with the concept of the fourth dimension, and although the possibility of n dimensional space was only one of the many ideas discussed within non-Euclidean geometry, it soon became representative of these new geometries to popular audiences.² For most laypersons, the concept of n dimensions itself was understood to be the theory of the fourth dimension of space. In this way, the fourth dimension came to be conflated with both non-Euclidean geometry and n dimensions. However, the phrase ‘the fourth dimension’ has a history that precedes the new geometries. The earliest use appears to have been made by Henry More, in his *Enchiridion Metaphysicum* (1671). More, a Cambridge Platonist, was not interested in locating the fourth dimension in physical space, but rather he discussed it as the realm of the Platonic Ideal (Henderson, p. 18). The first treatment of a spatial fourth dimension, explained via what I will call ‘the dimensional analogy’, appears to have been made in print by Gustav Theodor Fechner, under the pseudonym of ‘Dr Mises’, in his 1846 semi-comical essay titled ‘Der Raum hat Vier Dimensionen’ (p. 18).³ The dimensional analogy that Fechner employs here reappears in various guises throughout the developing discourse of hyperspace philosophy. It is consistently relied upon as a means to introduce the fourth dimension of space in the writing of every hyperspace philosopher I have encountered.

Strikingly, as Alexander L. Taylor observed in 1952, Fechner’s version of the dimensional analogy anticipates animated film.⁴ Fechner writes: ‘Man danke sich ein

² ‘ n dimensions’ refers to any space that is described by more or less dimensions than the traditional three.

³ Tony Robbin notes that Carl Friedrich Gauss was employing the dimensional analogy as early as the 1820s; however, as I will discuss below, Gauss’s version of the dimensional analogy apparently did not occur in print until later. See Robbin, *Shadows of Reality: The Fourth Dimension in Relativity, Cubism, and Modern Thought* (New Haven: Yale University Press, 2006), p. 20.

⁴ *The White Knight: A Study of C. L. Dodgson* (Edinburgh and London: Oliver and Boyd, 1952), p. 89-90.

kleines buntes Männchen, das in der camera obscura auf dem Papier herumläuft; da hat man ein Wesen was in zwei Dimensionen existiert [One imagines a small, colourful little man who walks around in a camera obscura on the paper; here one has a being that exists in two dimensions]'.⁵ This two-dimensional being has no comprehension of the extra dimension of space—depth—that extends upward and downward from his photographic paper. If the philosophical possibility of a third dimension of space even occurred to this 'little man', he would decide that its material existence was impossible. However, Fechner remarks, 'und doch existiert diese dritte Dimension [And, nevertheless, there exists this third dimension]' (para. 13). Fechner continues, arguing that this little man is in fact representative of humanity with its three-dimensional prejudices: 'Wir sind nur Farben- und Schattenmännchen in drei Dimensionen statt in zweien [We are only little colourful men and little shadow men in three dimensions instead of two]' (para. 14). As the two-dimensional being in the camera obscura is oblivious to the three-dimensional world that human beings inhabit, Fechner argues, so are humans oblivious to the fourth dimension of space. In his discussion of Fechner, Taylor exemplifies how the dimensional analogy functions. Replacing the two-dimensional, camera obscura mannikin with a Walt Disney character, he directly implicates his audience in the analogy, referring to the readers as 'we', the three-dimensional beings: 'at each moment we have a cross-section of this larger

⁵ 'Der Raum hat Vier Dimensionen', originally published in *Vier Paradoxa* (Leipzig: L. Voss, 1846). <<http://gutenberg.spiegel.de/fechner/mises/vdimens/vdimens.htm>> [accessed 20 March 2007], para. 13, my translation. I am not offering a strictly direct translation of Fechner's text here; literally, Fechner asks the reader to imagine a 'little, coloured man'. In deviating from the original text, I am trying to clarify Fechner's intentions here. He is asking the reader to imagine a 'real', living two-dimensional character whose total realm of experience consists of the light-sensitive plate within the camera. I speculate that his specification that the man be 'coloured' is in order to render it more life-like, as opposed to the black-and-white negative image of the contemporary calotype.

[four-dimensional] reality of which we know nothing, any more than, shall we say, Donald Duck, were he conscious, would know of the world beyond his screen' (p. 90).

Fechner's essay, and the explicit parallel that he draws between a fictional two-dimensional character and the 'real' three-dimensional observer, has deeper implications for this thesis, as will become apparent over the course of my discussion. At present, however, I simply wish to introduce the device of the anthropomorphic dimensional analogy. Fechner may have borrowed this idea from fellow German mathematician, Carl Friedrich Gauss.⁶ In Gauss's biography, published shortly after his death, Sartorius von Waltershausen recalls that Gauss had employed a similar analogy. Writing in an 1869 issue of *Nature*, English mathematician James Joseph Sylvester cites Walterhausen in noting that Gauss frequently remarked that 'as we can conceive beings like infinitely attenuated book-worms in an infinitely thin sheet of paper—which possessed only the notion of space of two dimensions, so we may imagine beings capable of realising space of four or a greater number of dimensions'.⁷ Henderson identifies Sylvester's article as 'a more direct impetus to the rise of English speculation on the number of dimensions of space' than Fechner's; indeed, in the 1870s, the dimensional analogy begins to appear repeatedly in scientific journals throughout Britain. Hermann von Helmholtz even employs it in his arguments *against* the possibility of four-dimensional space.⁸ While the dimensional analogy would continue to be revised and debated in print well into the

⁶ In a manner similar to the independent, concurrent formulations of the theory of evolution by natural selection developed by Charles Darwin and Alfred Russell Wallace, Gauss, along with Johannes Bolyai and Nikolai Lobachevskii, 'discovered' non-Euclidean geometry.

⁷ J. J. Sylvester, 'A Plea for the Mathematician', in *Nature* (December 30, 1869): 237-239, 238. Henderson also discusses this passage in her *FDNG*, pp. 18-19. This article was originally given as an address to the physics and mathematics section of the meeting of the British Association in 1869.

⁸ See, for example, 'The Axioms of Geometry', in *Academy* 1 (February 1870): 128-131 and 'The Origin and Meaning of Geometrical Axioms', in *Mind* (July 1876): 301-321. In Helmholtz's dimensional analogy, he describes two-dimensional beings confined to the surface of a sphere.

twentieth century, the most famous example, one that continues to be read today, is Edwin Abbott Abbott's 1884 satire, *Flatland: A Romance of Many Dimensions*.⁹

The dimensional analogy is not the only manner in which the fourth dimension worked its way into the Western popular consciousness in the second half of the nineteenth century, however. In 1875 physicists Balfour Stewart and Peter Guthrie Tait anonymously published *The Unseen Universe*, a text that attempts to bridge the rift between science and religion that had opened up over the course of the nineteenth century particularly with reference to the theory of evolution by natural selection. In spite of their frequent use of the Bible as evidence, Stewart and Tait do not take fault with the work of Darwin and Wallace, but rather they demur on the subject of the absolute origin of life: 'It may [...] be possible by means of a hypothesis of evolution, to account for the great variety of living forms on the supposition of a single primordial germ to begin with; but the difficulty still remains how to account for this germ'.¹⁰ The 'germ' of all life on Earth, according to the 'continuity principle' put forward by Stewart and Tait, must have had a living source. 'It is against all true scientific experience that life can appear without the intervention of a living antecedent', they write (p. 179). Avoiding the language of causality, Stewart and Tait simply look for an 'antecedent' rather than a first cause. If there is no antecedent to account for the 'germ' of life in the material, visible universe, then Stewart and Tait assert, we must look to another, 'unseen universe'. Observable here is a kind of Carlylean 'natural supernaturalism', as expressed in *Sartor Resartus*: "is not a

⁹ *Flatland* has recently seen a resurgence in popularity, and multiple editions have appeared. See for example, I. Stewart's *The Annotated Flatland*, by E. A. Abbott (Oxford: Perseus, 2002); *Flatland: A Romance of Many Dimensions*, with an introduction by A. Lightman (London: Penguin, 1998); *Flatland: A Romance of Many Dimensions*, ed. by R. Jann (Oxford: Oxford University Press, 2006), for just a few examples.

¹⁰ B. Stewart and P. G. Tait, *The Unseen Universe, or, Physical Speculations on a Future State*, 4th edn. (London: Macmillan, 1876), p. 179. I will refer to this text as *UU*. The fact that that *UU* was already in its fourth edition, one year after its initial publication, is indicative of its popularity.

real Miracle simply a violation of the Laws of Nature?" ask several. Whom I answer by this new question: What are the Laws of Nature?¹¹ Perhaps, Carlyle continues, 'the rising of one from the dead were no violation of these Laws', but rather a confirmation of some other, unknown law (p. 194). According to Stewart and Tait, these unknown laws are explicable via access to what they call the 'unseen universe'. Referring loosely to the ring-vortex theory of William Thomson, Lord Kelvin, Stewart and Tait hypothesise the existence of the unseen universe.¹²

Let us begin by supposing an intelligent agent in the present universe [...] to be developing vortex rings—smoke rings lets us imagine [...] just as the smoke-ring was developed out of ordinary molecules, so let us imagine ordinary molecules to be developed as vortex rings out of something much finer and more subtle than themselves, which we have agreed to call the invisible universe. (pp. 217-218)

Unlike the anthropomorphic dimensional analogy of Fechner and others, which suggests looking for beings that are similar to humans but inhabiting another plane of existence, Stewart and Tait propose examining the movement of particles at the sub-molecular level. There is nothing, they contend, in science to disprove the existence of a 'finer and more subtle' invisible universe. Thus, on the assumption that it does in fact exist, they claim:

So we may suppose our (essentially three-dimensional) matter to be the mere skin or boundary of an Unseen whose matter has *four* dimensions [...] but may itself consist of four-dimensional boundaries of the five-dimensional matter of a higher Unseen, and so on. (p. 220, original emphasis)

Here the fourth dimension is a transcendent, quasi-material realm which functions as a safety net for energy lost to the visible universe. Thus, the main impetus for the infinitely progressive universe of multiple dimensions of Stewart and Tait is the threat of 'universal

¹¹ T. Carlyle, *Sartor Resartus*, ed. by K. McSweeney and P. Sabor (Oxford and New York: Oxford University Press, 1987), p. 194.

¹² After observing the movement of smoke rings in Tait's laboratory experiments, Thomson formulated a theory of 'vortex atoms', the main emphasis of which was their indestructibility. Thomson's work in this area has been cited as a precursor to string theory, the Theory of Everything and knot theory. See D. S. Silver, 'Knot Theory's Odd Origins', in *American Scientist* 94.22 (2006): 158-165.

heat death' necessitated by the Victorian conception of entropy. If the universe is in fact an infinitely open system, then it can never run down: 'we shall be led to a universe possessing infinite energy, and of which the intelligent developing agency possesses infinite energy' (p. 220). The fact that the word 'energy' appears often in this text is itself symptomatic of late nineteenth-century anxieties concerning the heat death of the universe which began with Helmholtz's prediction, in 1854, that the sun would eventually die.¹³ Like Fechner and Gauss, Stewart and Tait imply that the fourth dimension is accessible after death.

For Stewart and Tait, the fourth dimension is also the place where problems that seem insurmountable in the three-dimensional, visible universe, are easily solved. In Leipzig, another scientist was pursuing a similar line of inquiry. Johannes Carl Friedrich Zöllner, colleague and friend of Fechner, also became fascinated with the fourth dimension. Influenced by the American medium Henry Slade, Zöllner was convinced that he had found experimental proof of the existence of the fourth dimension of space. Slade, most famous for slate-writing, also performed a series of tricks, one of which involved untying the knots of a cord of which the ends had been fused together. Slade's ability to untie the knots, seemingly without touching the cord or disturbing the fused endings,

¹³ For further discussion of the cultural, social and political implications of the widespread fear of universal heat death at the turn of the century, see B. Clarke, 'Dark Star Crashes: Classical Thermodynamics and the Allegory of Cosmic Catastrophe', in *From Energy to Information: Representation in Science and Technology, Art, and Literature*, ed. by B. Clarke and L. D. Henderson (Stanford: Stanford University Press, 2002), pp. 59-75. I will refer to this collection as *FEI*. In her discussion of the same issue, Beer uses the anxiety aroused by entropy as a possible explanation for the widespread popularity Darwin's study on earthworms, *The Formation of Vegetable Mould through the Actions of Worms, With Observations on their Habits* (1881). Writing of this text, the last of Darwin's writing to be published during his lifetime, Beer observes: 'the lowest common denominators of matter then known (the molecule) and of life (the earthworm) become matter of consolation. [...] Out of reach of the sun, whose energy is running down, the world survives'. See "'The Death of the Sun": Victorian Solar Physics and Solar Myth', in *OF*, pp. 219-241, p. 238.

convinced Zöllner that he was able to access the fourth dimension of space.¹⁴ Zöllner's work was significant in that he sought experimental 'proof' for his speculations on the fourth dimension, as Henderson observes:

Zöllner's union of spiritualism and science to prove empirically the existence of a fourth dimension was unusual in the history of the concept. Unlike later mystically oriented supporters of the fourth dimension who scorned positivist science for its limitation to immediately observable phenomena, Zöllner managed to encompass both points of view. (p. 23)

While Zöllner may have been among the first to seek empirical evidence of the existence of the fourth dimension, he was not the last hyperspace philosopher to do so.¹⁵ Neither was he the only scientist to look toward spiritualist mediums for experimental evidence, as I will illustrate over the course of the present study.

It is in the work of the chief populariser of the fourth dimension, or, as Henderson describes him, 'the first true hyperspace philosopher'—Charles Howard Hinton—that these various conceptions of the fourth dimension are pulled together and developed. Most of Hinton's writings are more speculative and philosophical than technical in nature, and thus were more accessible to non-mathematical, popular audiences. He also experiments with fiction, writing several fantasies with the fourth dimension as his subject, either implicitly or explicitly. It is in his first published writing on the subject, an essay from 1880 titled 'What is the Fourth Dimension', that Hinton takes up the

¹⁴ See J. C. Friedrich Zöllner, 'On Space of Four Dimensions', in *The Quarterly Journal of Science* 8 (April 1878): 227-237. See also Henderson, *FDNG*, who discusses Zöllner and Slade in greater detail (pp. 22-24). Henderson observes that additionally, 'Slade join[ed] solid wooden rings together, transport[ed] objects out of closed three-dimensional containers, and, as his most masterful act, obtain[ed] writing on paper placed within two slates securely sealed together' (p. 23). Slade was tried and convicted of fraud in London in 1876; however, Zöllner remained steadfast in his support of Slade's 'evidence' of the fourth dimension of space. He explicitly defends Slade in *The Quarterly Journal of Science* article (237). Zöllner's text, *Transcendental Physics*, which also discusses the existence of the fourth dimension, was translated into English in 1880. See *Transcendental Physics*, trans. by C. C. Massey (London: W. H. Harrison, 1880).

¹⁵ For a discussion of Zöllner, Slade and the relationship between science and spiritualism in nineteenth-century Europe, see K. B. Staubermann, 'Tying the knot: skill, judgement and authority in the 1870s Leipzig spiritistic experiments', in *British Journal for the History of Science* 34 (2001): 67-79.

dimensional analogy, using it to address the chief stumbling-block of disseminating the fourth dimension to the Victorian public: the apparent impossibility of visualising a four-dimensional object. In 'What is the Fourth Dimension', which was reprinted in 1884 as the first text in his series of *Scientific Romances*, Hinton recognises this problem:

The question naturally occurs, looking at these numbers 2, 2^2 , 2^3 , by what figure shall we represent 2^4 or $2 \times 2 \times 2 \times 2$ [?] We know that in the figure there must be sixteen units, or twice as many units as in the cube. But the unit also itself must be different. And it must not differ from a cube simply in shape. It must differ from a cube as a cube differs from a square. No number of squares will make up a cube, because each square has no thickness. In the same way, no number of cubes must be able to make up this new unit. And here, instead of trying to find something already known, to which the idea of a figure corresponding to the fourth power can be affixed, let us simply reason out what the properties of such a figure must be.¹⁶

The emphasis here is on analogical reasoning, and although Hinton would later experiment with more empirical means of constructing the fourth dimension, in his first romance he focuses on developing a purely mental image of a four-dimensional object and imagining a different spatial paradigm.

Mathematicians use imaginary numbers and logic often, and in this way the science of mathematics differs from other, more empirically-based sciences. As the American architect and Theosophist Claude Bragdon argues in *Four-Dimensional Vistas* (1916): 'in brief, science only deals with *phenomena*, and its gift to man is the power over his material environment. The gift of pure mathematics, on the other hand is primarily to the mind and spirit'.¹⁷ The term 'spirit' arises here in Bragdon's discussion as well. Bragdon, like several other Theosophists, was attracted to Hinton's hyperspace philosophy. Although his writing was often praised in the Theosophical press, it appears

¹⁶ C. H. Hinton, 'What is the Fourth Dimension', in *Scientific Romances*, First and Second Series (New York: Arno Press, 1976), reprint of 1886 edn., pp. 3-32, p. 10. I will refer to this text as *SR I*.

¹⁷ C. Bragdon, *Four-Dimensional Vistas*, 2nd edn. (London: George Routledge and Sons, 1923), p. 20, original emphasis. I will refer to this text as *FDV*.

that Hinton attempted to distance himself from this particular branch of followers.¹⁸ However mathematics, at its most speculative, is more amenable to mysticism than many of the other sciences, as historian Joan Richards observes. 'Within the particular configuration of knowledge the nineteenth-century English had constructed', Richards writes, 'it was often argued that knowledge of the divine partook of the same transcendental necessity as the knowledge of mathematics'.¹⁹ Recalling Bragdon's claims that 'pure mathematics' enriches 'the mind and the spirit', it appears that the association of mathematics with divine, transcendental necessity, continued into the twentieth century.

Although Hinton and Bragdon may have differed in their religious outlooks, they both challenged the functionalism of scientific positivism. In *Four-Dimensional Vistas*, Bragdon writes: 'The Promethean fire of pure mathematics is perhaps the greatest of all in man's catalogue of gifts, but it is not most itself, but least so, when, immersed in the manifoldness of phenomenal life, it is made to serve purely utilitarian ends'(p. 21). Hinton does experiment with approaching the fourth dimension through 'the manifoldness of phenomenal life' in his later writings, but the belief that the benefit of accessing the fourth dimension of space lies not in its use as a tool in the Enlightenment project of control over the physical environment, but rather as a means of intellectual and spiritual

¹⁸ See, for example, C. W. Leadbeater's review of *Stella and An Unfinished Communication*, in *Lucifer: A Theosophical Magazine* 17 (February 1896): 520; B. Keighley's review of *The Fourth Dimension*, in *Theosophical Review* 34 (July 1904): 469 and F. Sedlak's review of the second edition of *The Fourth Dimension*, in *The Theosophical Review* 40 (September 1906): 90. Hinton's friend and editor, Gelett Burgess notes that 'although his works have been taken up to an extent by Theosophists and other transcendental cults, Hinton himself was an absolute materialist, and believed in what could only be evidenced by his senses'. See G. Burgess, 'The Late Charles H. Hinton: Philosopher of the Fourth Dimension and Inventor of the Baseball Gun', in *New York Sun* 5 May 1907, n. p. In spite of Burgess's claims that Hinton 'was an absolute materialist', as I argue throughout this study, Hinton's philosophy is perhaps more aptly described as 'transcendental materialism'. Later in his career, after constructing multiple sets of cube exercises, Hinton apparently believed that he had found proof of the material existence of the transcendental space of fourth dimension as 'evidenced by his senses'.

¹⁹ J. Richards, *Mathematical Visions: the Pursuit of Geometry in Victorian England* (Boston: Academic Press, 1988), p. 104. I will refer to this text as *MV*.

development for all of humankind underlies his hyperspace philosophy.²⁰ One could perhaps argue that mathematics, or at least Hinton's study of the fourth dimension, is concerned with phenomenology—how the mind senses and interprets phenomena—rather than phenomenal objects themselves. Some mathematicians and mystics at the end of the nineteenth century saw mathematics as a discourse that was able to traverse the border between external appearances and a transcendent reality, akin to Ariel in *The Tempest*, or James Clerk Maxwell's sorting demon.²¹ Like Maxwell's demon, which was born of the desire to subvert the Second Law of thermodynamics, mathematical theory can be expanded in innumerable ways so as to, as Gillian Beer observes, 'dislimn all boundaries and disturb all organizations'.²² Beer identifies this disruptive force of science and mathematics as a key factor in early Modernism (p. 303).

The spatial conception of the fourth dimension as well as non-Euclidean geometry were in themselves examples of the myriad interpretations possible within what is supposed to be a descriptive science, geometry. However, as Richards notes, 'during the second half of the century, mathematicians were turning with increasing frequency to analytically suggested higher dimensional space in order to solve problems' (p. 54).

²⁰ In using the words 'Enlightenment project', I have in mind particularly T. Adorno and M. Horkheimer, *Dialectic of Enlightenment*, trans. by J. Cumming (London: Verso Books, 1997). The ethical implications of Hinton's belief in the fourth dimension will become more apparent throughout the course of this study.

²¹ See, for example, J. P. N. Land, 'Kant's Space and Modern Mathematics', in *Mind* (January 1877): 38-46. The proposition by Stewart and Tait, that intelligent force resides in an unseen, higher dimension, was in part influenced by Tait's correspondence with Maxwell in 1864. Tait had written to Maxwell, requesting that he proofread his textbook, *Sketch of Thermodynamics*. Maxwell refused, but according to Clarke, he 'raised the level of the conversation by placing into doubt the absolute nature of the entropy law'. Maxwell proposed that entropy could be reversed by an intelligent, external agent. 'To visualize the statistical nature of thermodynamic entropy, [Maxwell] imagines a being that banks on the randomised distribution of heat and cold at the molecular level, entering into and sorting a closed system of energetic matter'. See B. Clarke, 'Allegories of Victorian Thermodynamics', in *Configurations* 4.1 (1996): 67-90, 79 and 80, respectively. It was actually William Thomson who gave this sorting agent the title 'demon'. This, was, as Clarke observes, 'an inspired rhetorical choice. The demon's position at a threshold between distinct spaces conforms to legendary traditions. As updated in literary theory, the daemonic in general is a mythopoetic code for uncertain intermediations—the uncanny or disruptive supplement' (69).

²² Beer, 'Wave Theory and the Rise of Literary Modernism', in *OF*, pp. 300-301.

Originating as a formality of algebraical terminology, higher dimensions soon became useful as spaces where seemingly impossible problems could be solved and laws overcome. Four-dimensional space was not just the place where spiritualist mediums untied knots; more conservative mathematicians such as George Salmon and Arthur Cayley were turning to higher space as well. Importantly for these mathematicians, higher dimensions were merely ‘analytically suggested’. The key difference here is between analytical geometry, which is closely aligned with algebra, and descriptive geometry. The former, perhaps what Bragdon would refer to as ‘pure mathematics’, treats of imaginary numbers and variables, and need not be representative of any physical phenomena, while descriptive geometry attempts to correspond to the physical world. Richards sums up this difference succinctly, observing that ‘to argue that a proof involving circles requires a conception of space is much easier than arguing that an analytical demonstration involving a and b requires an understanding of number’ (p. 39). Although Bragdon would argue that ‘pure mathematics’ should not be burdened with application to physical realities, the concept of the fourth dimension is the result of a slippage between the terminologies employed within these two branches of mathematics, a crossing-over of analysis into description. The potential for such slippage is built into the writings of analytical geometers such as Salmon and Cayley, as Richards illustrates, taking an example from Salmon’s 1866 essay, ‘On Some Points in the Theory of Elimination’:

‘The question now before us may be stated as the corresponding problem in space of p dimensions. But we consider it as a *purely algebraical question, apart from any geometrical considerations*. We shall however retain a little of the geometrical language, both because we can thus avoid

circumlocutions, and also because we can thus more readily see how to apply to a system of p equations, processes analogous to those which we have employed in a system of three'.²³

Salmon is specific that he is not referring to an actual space of ' p dimensions', but that he is considering a purely formal, analytical problem. He is using the language of descriptive geometry merely as a matter of convenience, he explains. However, Richards observes, although Salmon was clear that 'he was just using a figure of speech [...] Cayley was less explicit on this point' (p. 55). This ambiguity on Cayley's part did not pass unnoticed by other British mathematicians. In the aforementioned address by Sylvester, after introducing the subject of the fourth dimension through his discussion of Gauss, Sylvester offers his own, as Richards notes, 'rather circuitous' support for the fourth dimension (p. 56). Rather than attempt to illustrate his own conception of four or more dimensions, he cites Arthur Cayley, whom he calls 'the Darwin of the English school of mathematics', as a key supporter (Sylvester, 238). He follows by remarking suggestively, in a footnote of the published version of the address:

If an Aristotle or Descartes, or Kant assures me that he recognises God in the Conscience, I accuse my own blindness if I fail to see him. If Gauss, Cayley, Riemann, Schalfi, Salmon, Clifford, Krönecker have an inner assurance of the reality of transcendental space, I strive to bring my faculties of mental vision into accord with theirs. (238)

There is a finessing of the absence of origin here similar to that already observed in the 'antecedent' of Stewart and Tait. Hinton is similarly ambiguous in his writings—as I will illustrate—and it is possible to observe the movement of his speculations on the fourth dimension as hypothetical concept to material 'reality' over the course of his career. However, before I turn to my examination of Hinton's work, because he is such an obscure figure, it is instructive to turn briefly to his own early intellectual development.

²³ Salmon, quoted in *MV*, p. 54, emphasis added. This essay originally appeared in an 1866 issue of the *Quarterly Journal of Pure and Applied Mathematics*. The choice of the variable p is arbitrary here, and is interchangeable with n .

Early philosophical influences: James Hinton and Immanuel Kant

Hinton's phenomenological interests were most likely inspired by his father, James Hinton (1822-1875).²⁴ James Hinton was well-known during his own time as an aural surgeon, and as a radical philosopher. A founding member of the Metaphysical Society, he was a friend of John Ruskin, and inspirational figure for Havelock Ellis.²⁵ After his death late in 1875, the journal *Mind* lamented:

His death at a critical period of his life, when he had just attained his long-desired speculative freedom, was a painful shock to his friends; nor could any country least of all our own, well afford to lose so earnest, unencumbered and well-equipped a pioneer in the search for the truth.²⁶

Like James Hinton, Hinton's lifelong project of accessing the fourth dimension was a 'search for truth', and in his introduction to the *Scientific Romances*, James Webb claims that Hinton was the 'closest intellectual confidant of his father'.²⁷ Hinton edited his father's posthumous collection of writings, *Chapters on the Art of Thinking*, published in 1879, and there is some overlap between their philosophies, as Rudolph Rucker has observed, as well.²⁸ Perhaps most relevant to my discussion of Hinton is James Hinton's philosophy of 'Law-Breaking', which, Webb notes, 'was the destruction of artificially imposed limitations on human achievement'.²⁹ While James Hinton seems to have used 'Law-Breaking' at least in part to support his free-love philosophy, it can be read in terms

²⁴ I will refer to Charles Howard Hinton as 'Hinton', and James Hinton as 'James Hinton'.

²⁵ The Metaphysical Society, founded in 1869, counted an impressively diverse range of famous Victorian scientists, politicians, religious leaders, artists and other thinkers among its numbers. For example, in addition to James Hinton and Ruskin, T. H. Huxley, Leslie Stephen, Tennyson, Cardinal Manning, and Gladstone were members. See A. W. Brown, *The Metaphysical Society: Victorian Minds in Crisis, 1860-1880* (New York: Columbia University Press, 1947).

²⁶ J. F. Payne, 'James Hinton', in *Mind* (April 1876): 247-252, 252.

²⁷ J. Webb, 'Introduction', in *Scientific Romances*, pp. i-vi, p. ii.

²⁸ See R. v. B. Rucker, 'Introduction', in *Speculations on the Fourth Dimension: Selected Writings of Charles H. Hinton* (New York: Dover, 1980), pp. v-xix, p. xi.

²⁹ Webb, p. i. See also J. Hinton, *The Law-Breaker and the Coming of the Law*, ed. by M. Hinton (London: Kegan Paul, Trench., 1884).

of Hinton's challenge to limitations imposed upon space by Kant in the eighteenth century.

In his *Prolegomena to any Future Metaphysics that will be able to present Itself as a Science*, Kant claims:

That complete space [...] has three dimensions, and that space in general cannot have more is built on the proposition that [...] cannot be shown from concepts, but rests immediately on intuition, and indeed, because it is apodictically certain, on pure intuition *a priori*.³⁰

Here Kant argues that the three-dimensional nature of space is a necessary, absolute truth, founded on unmediated human intuition. In fact, according to Kant, space—and its arithmetical counterpart, time—is *the* mediating factor in all other human perception:

Geometry is grounded on the pure intuition of space [...] pure intuitions, which are the ground *a priori* of the empirical intuitions, and hence can never be taken away themselves, but prove, precisely by being pure intuitions *a priori*, that they are mere forms of our sensibility which must precede all empirical intuition, i.e. perception of real objects, and in conformity with which objects can be known *a priori*, though indeed only as they appear to us. (p. 39)

Geometry, which in Kant's time was solely Euclidean, is therefore a privileged branch of science, based on 'pure intuition' of its object, space. According to Kant, all empirical observations—indeed, one could argue, all other sciences—are founded on these 'forms of our sensibility', or, the experience of space as explained by geometry.

Following Kant's argument, it is possible to see how Hinton viewed his project of explaining the fourth dimension as a challenge to the very foundation of Western epistemology, and as a means of revealing a new way of seeing. According to Kant, to perceive anything, one must have a pre-existing conception of space and time. However, Kant also argues that human perception is itself limited; it constructs a model of reality, but is not able to directly encounter the 'real' reality, the 'thing-in-itself'. Henderson

³⁰ I. Kant, *Prolegomena to any Future Metaphysics that will be able to present Itself as a Science*, trans. by P. G. Lucas (Manchester: University of Manchester Press, 1953), pp. 40-41. I am thankful to Professor Robin Le Poidevin for directing me to this text.

describes the hyperspace philosophy that began with Hinton's work as 'an idealist position, [...] its proponents frequently refer to Plato's world of ideas, of Kant's unknowable noumenon, the "thing-in-itself" (*FDNG*, p. 25). However, both Hinton and Kant are wary of being labelled idealists. Hinton seems to mistrust 'pure' idealism, a suspicion that strengthens over the course of his career, particularly after his encounter with William James and his pragmatic philosophy. Hinton's early wariness of 'pure' idealism, however, may stem from Kant's condemnation of it as solipsistic: 'Idealism consists in the assertion that there are none other than thinking beings, other things which we perceive in intuition are only representations' (Kant, p. 45). Here Kant is not arguing that 'real' things do not exist external to the perceiving mind, but rather he claims that the human mind intuits reality in a way which is only *representational*: 'Things are given to us as objects of our sense situated outside of us, but of what they may be in themselves we know nothing; we only know their appearances, i.e. the representations that they effect in us when they affect our senses' (p. 45). Thus humans are not able to encounter the 'thing-in-itself', only the reconstructions of it provided by the perceiving consciousness. The human being does not have an unmediated sensation of external reality but only of the effect of that external reality upon the human senses. This gap between sensation and 'reality' is also one that James Hinton is concerned with in his philosophical writings: "What I would fain seek [...] is *in what way* our feelings and apprehension thus fall short".³¹ Turning to Hinton's first romance, 'What is the Fourth Dimension', we can observe a similar concern.

³¹ J. Hinton, *Chapters on the Art of Thinking*, ed. by C. H. Hinton, quoted in Webb, 'Introduction', p. ii, original emphasis.

‘What is the Fourth Dimension’ (1880-1884)

For Hinton, a problem that arises from the gap between human perception and ‘reality’, or things-in-themselves, is that perceptions are what the understanding bases its judgements upon, rather than ‘reality’. Thus, limited or misinterpreted perceptions will beget limited or incorrect theories *ad infinitum*. Hinton makes clear his concerns with contemporary Western epistemology in the first lines of his first romance, ‘What is the Fourth Dimension’, noting: ‘At the present time our actions are largely influenced by our theories’ (p. 3). Theories, Hinton implies, shape the actions and events that in turn shape the future: ‘Whatever pursuit we are engaged in, we are acting consciously or unconsciously upon some theory, some view of things’ (p. 4). Theories are supposed correct if they are based upon factual evidence, which is based upon observation. However, observation—the ‘view[ing] of things’—is itself influenced by theoretical knowledge: what to look for and where to look for it. Hinton speculates that Western epistemology may be based on an early misapprehension. Throughout his writing, Hinton appears to be attempting to take his readers back to a point of convergence between a primal encounter with objective, external ‘reality’ and the subjective human perception, in order to rebuild Western epistemology.

According to Ernst Cassirer, whose career as a philosopher was just beginning at the height of Hinton’s career, there are two forms of epistemology: discursive, or theoretical, and mythic. These forms of thinking, according to Cassirer, also correspond to spoken and written language: ‘For theoretical thinking, a word is essentially a vehicle serving the fundamental aim of such ideation’.³² On the other hand, in mythical thinking, Cassirer writes that ‘the word which denotes that thought content is not a mere

³² E. Cassirer, *Language and Myth*, trans. by S. K. Langer (New York: Dover, 1953), p. 56.

conventional symbol, but is merged with its object in indissoluble unity [...]. Whatever has been fixed by a name, henceforth is not only real, but is Reality' (p. 58).³³ The lack of distinction between word and object signifies—according to Cassirer—a more 'primitive' mode of thought.³⁴ Thus the reification of analytical terms into a descriptive geometry of the fourth dimension corresponds to what Cassirer identifies as a mythic mode of thinking.

Although in his first romance Hinton is ambiguous about the actual material 'reality' of the fourth dimension of space, he is clear about his belief in its utility as a conceptual tool. Hinton's own belief in the reality of the fourth dimension appears to strengthen over the course of his career, and the general trend of the work on the fourth dimension—in the nineteenth century at least—is to move from the discursive mode of thinking to the mythical. Here we see an inversion Cassirer's 'progressive' evolution of epistemology. According to Cassirer, in modern civilisation mythical thinking has branched off into discursive thinking, which 'tends toward expansion, implication and systematic connection' (p. 3). In the early *Scientific Romances*, Hinton—like Fechner, Sylvester and others—takes the fourth dimension from the realm of the rhetorical, reifying it into a concrete concept. It is then only a small step, after the fourth dimension had been established as a concept, to develop it into mythical 'reality'. It is still possible to find evidence of this mythologising tendency decades into the twentieth century: Claude

³³ Andy Clark, in his work on what he calls 'public language' and writing as forms of technology, makes similar observations noting that 'the real properties of physical text transform the space of possible thoughts'. See 'Magic Words: How Language Augments Human Computation', in *Language and Thought: Interdisciplinary Themes*, ed. by P. Carruthers and J. Boucher (Cambridge: Cambridge University Press, 1998), pp. 162-188, p. 176.

³⁴ Cassirer was certainly not the first to make this assumption, which was a recurring one over the course of the nineteenth century, particularly with the rise of evolutionary theory. According to Oxford philologist Max Müller, the concretisation of language such as that found in mythology is caused by a 'mental defect' in modern adults (Cassirer, p. 6). Clearly, Cassirer builds upon Müller's work, and both writers conclude that the tendency toward myth-making through the hypostatisation of language occurs most frequently in 'primitive'—i.e., non-Western—societies. See also M. Müller, *Introduction to the Science of Religion: Four Lectures Delivered at the Royal Institution in February and May 1870* (London: Longmans and Green, 1893).

Bragdon continues to speak of the material reality of the fourth dimension in his discussion of the architecture of the skyscraper, *The Frozen Fountain* (1932).³⁵ Hinton was the earliest and most prolific writer in hyperspace philosophy, developing this trend of taking discursive epistemology ‘backwards’ into mythology in an attempt to re-examine the foundations of human perception. He also believes—like his father—that one need not respect the limits of knowledge, if those limits are in fact based on an error in the original shift from mythic to discursive epistemology. Indeed, from the very beginning of his career as a hyperspace philosopher, Hinton seems to be focused on “in what way our feelings and apprehension fall short”.

Returning to ‘What is the Fourth Dimension’, Hinton follows the first line of this romance—with its Kantian implications—with a more ‘anthropological’ observation: ‘We have abandoned the simple and instinctive mode of life of the earlier civilisations for one regulated by the assumptions of our knowledge and supplemented by all devices of intelligence’ (p. 3). Here is the movement from mythical to discursive that Müller and Cassirer describe. Modern life, Hinton argues, though it has branched off from the more archaic ‘simple and instinctive mode of life’, is still shaped by theories and assumptions which have their roots in the past. Nearly a century later, at a symposium attended by French theorists such as Jacques Lacan, Georges Poulet and Jacques Derrida, the historian Charles Morazé makes a similar observation: ‘work itself emerges from the field of the

³⁵ C. Bragdon, *The Frozen Fountain, Being Essays on Architecture and the Art of Design in Space* (New York: A. A. Knopf, 1932). For further discussion of Bragdon and his role in the development of the skyscraper aesthetic in early twentieth-century New York, see T. A. P. van Leeuwen, *The Skyward Trend of Thought: the Metaphysics of the American Skyscraper* (Cambridge, MA: MIT Press, 1988).

possible and it's the exploration of the possible which is important'.³⁶ Hinton's questioning of Western epistemology is, while founded in nineteenth-century scientific culture and Romantic philosophy, a project that anticipates trends in twentieth-century philosophy such as post-Structuralism. The primary concern of his contemporaries, Hinton implies, should be to examine the 'devices of intelligence' that define and limit the 'field of the possible'. The method of inquiry that Hinton proposes in his first romance is to go 'beyond the horizon of actual experience', to question 'whatever seems arbitrary and irrationally limited in the domain of knowledge' (*SR 1*, p. 4). The primary 'arbitrary' limitation on which Hinton chooses to focus is Kant's 'apodictically certain' assumption that space is limited to three dimensions.

Firstly, Hinton asks: 'What is the limitation that we must suppose away?' (p. 5). His answer is the assumption that space has only three dimensions. 'Space as we know it', Hinton claims, 'is subject to a limitation' (p. 6). Hinton highlights the possibility that what philosophers such as Kant, and Euclidean geometers, have assumed is an *a priori* fact about space is actually an illusion, a result of 'faulty' intuition. In such a case, there would be no need to assume that space is limited to three dimensions. In later writings, Hinton attempts to 're-educate' the human intuition, but in the present text, Hinton simply seeks to examine the possibility of a fourth dimension of space through the method of analogy. Here we see Hinton's earliest version of the dimensional analogy, which he revises repeatedly over the course of his career. Hinton asks the reader to observe the pattern of progression from a line to a square, and then to a cube. By following this

³⁶ C. Morazé, 'Literary Invention', in *The Languages of Criticism and the Sciences of Man: The Structuralist Controversy*, ed. by R. Macksey and E. Donato (Baltimore and London: Johns Hopkins Press, 1970), pp. 22-55. This remark is taken from the 'Discussion', p. 35. The symposium from which these proceedings were published was the *Lese Langages Critiques et les Sciences de l'Homme*, at Johns Hopkins Humanities Center, 18-21 October 1966,

progression, Hinton argues, one can extrapolate the geometric properties of a four-dimensional object. He is not attempting to visualise such an object yet; rather, Hinton explains, ‘we must throw aside our realising power and answer in accordance with the analogy to be worked out from the three figures we know’ (p. 15). Hinton makes his project of speculation based on guidelines provided by the methodology of analogical reasoning very clear in this first romance, as Bruce Clarke observes: ‘Hinton’s four-dimensional project is quite specifically a speculative effort of mathematical cosmology, produced by the application of proportional analogy to the interrelation of dimensional spaces’.³⁷ Following the rule of analogy, it is simple to generate a formula from which one can calculate the geometric properties of objects possessing any number of dimensions. ‘Thus’, Hinton continues, ‘just as by handling or looking at it, it is possible to describe a figure in space, and so by going through a process of calculation it is within our power to describe all the properties of a figure in four dimensions’ (*SR 1*, p. 15). The emphasis here is on the process of reasoning, and Hinton has created a system that is at least internally consistent—it is more or less analogous to three-dimensional, Euclidean geometry—whether or not it corresponds to any sort of external reality. The problem is that he is not, as he claims, describing just a figure in space; rather, he is describing a new kind of space.

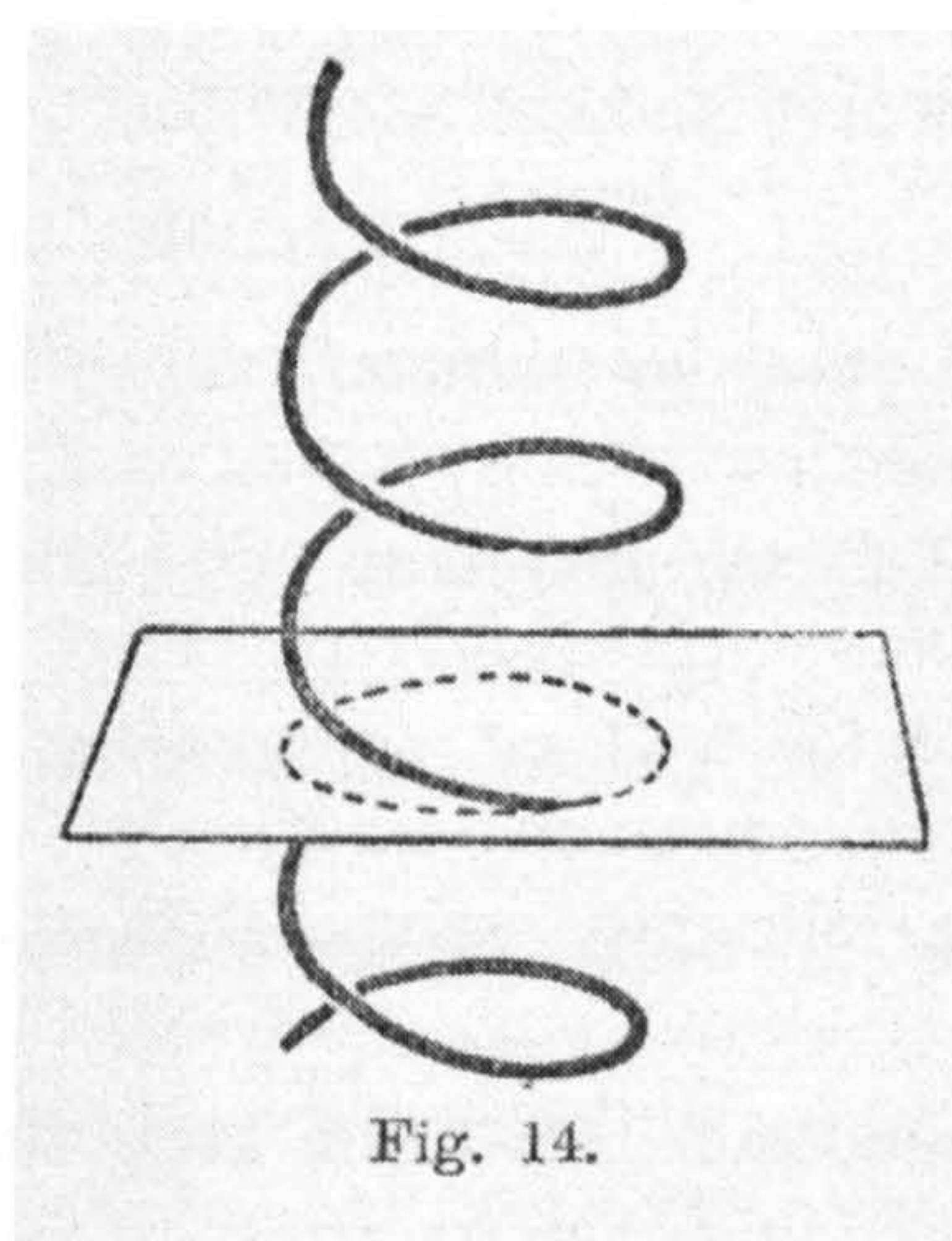
Problematical as well is the fact that pre-existing limitations on perception will cause human beings to view the fourth dimension through the lens of three-dimensional perception: were a four-dimensional object to obtrude into three-dimensional space, Hinton explains, ‘it would seem to us like a cube’ (p. 16). To better assist the imagination of his non-mathematical readers here, Hinton also employs a variation of the

³⁷ B. Clarke, *Energy Forms: Allegory and Science in the Era of Classical Thermodynamics* (Ann Arbor: University of Michigan Press, 2001), p. 179. I will refer to this text as *EF*.

anthropomorphic dimensional analogy. 'To justify this conclusion we have but to think of how a cube would appear to a two-dimensional being. To come within the scope of his faculties at all, it must come into contact with the plane in which he moves' (p. 16). Hinton asks the reader to imagine a two-dimensional being, possessing length and width—but no thickness—whose movements and perceptions are confined to a plane surface.

Apparently moving away from the anthropomorphic element of this analogy, Hinton then asks the reader to imagine a thin, horizontal sheet of wax, and a thread. If the thread is brought down perpendicular to the wax plane and pulled through the wax, it would make a tiny, stationary hole, or a 'point', in the wax. If the wax plane were in a liquid state, 'of such a nature as to close up behind' the thread, and if the thread were positioned 'slantingwise in reference to the [wax] plane and moved downwards [...] what would be observed would be a moving point' (p. 19). By altering the position of the thread, one could cause any number of patterns to appear in the sheet of wax. For example, a framework of threads in the shape of an X would cause the appearance of two moving holes, at first far apart, then converging in the centre and finally separating again (p. 19). If these holes, or 'points' were considered as atoms, Hinton continues, a dynamic system would be encompassed within the sheet of wax, or the plane: 'these moving figures in the plane are but the traces of the shapes of threads as those shapes pass on. These moving figures may be conceived to have a life and consciousness of their own' (p. 22). Thus we are brought back to the anthropomorphic dimensional analogy, with an added element. On one level, the reader is being asked to imagine a two-dimensional space where the wax plane is the two-dimensional being's habitat—'the plane in which he moves'—being penetrated by a three-dimensional object. The thread is the three-dimensional object, and

its movement through the wax plane is supposed to allow one to imagine how a four-dimensional object might appear if it were to penetrate three-dimensional space. Thus Hinton illustrates his contention that, were a four-dimensional object ‘to rest in [three-dimensional] space’, it would appear to human perception as simply a three-dimensional ‘slice’ of the whole object. Hinton improves on this analogy in his later text, *The Fourth Dimension* (1904), by using the drawing of a spiral intersecting a plane.³⁸



There is a subtler implication resulting from this analogy, however. Applying the relationship between the thread and the wax to the relationship between a four-dimensional object and three-dimensional space, one sees that Hinton is also implying that human existence could be viewed—from the fourth dimension—as a set of momentary ‘slices’ of a four-dimensional object’s movement through the three-

dimensional world. If this were the case, contemporary conceptions of time would be an illusion.

To challenge this illusion, or ‘error’ in intuition, Hinton uses a variety of textual strategies throughout his *Scientific Romances*. The shorter texts—such as the essay ‘What is the Fourth Dimension’ discussed above—collected within these two volumes include mathematical and philosophical meditations, short stories and novellas and even instructions for manual exercises involving a set of wooden cubes. In each of these texts—

³⁸ *The Fourth Dimension*, 2nd edn. (London: Allen and Unwin, 1906), p. 25. I will refer to this text as *FD*. Henderson also reproduces this illustration in her discussion, ‘Vibratory Modernism: Boccioni, Kupka, and the Ether of Space’, in *FEI*, pp. 126-149, p. 137.

or ‘romances’, as I refer to them—Hinton seeks to explain his understanding of the fourth dimension to his readers. In his attempts to ‘create’ the conceptual reality of the fourth dimension of space, Hinton’s texts endeavour to provoke a response from the reader that Wolfgang Iser identifies in his theory of aesthetic response:

In literature, where the reader is constantly feeding back reactions as he [sic] obtains new information, there is [...] a continual process of realization, and so reading itself ‘happens’ like an event, in the sense that what we read takes on the character of an open-ended situation, at one and the same time concrete and yet fluid. The concreteness arises out of each new attitude we are forced to adopt toward the text, and the fluidity out of the fact that each new attitude bears the seeds of its own modification. Reading, then, is experienced as something which is happening—and happening is the hallmark of reality.³⁹

The juxtaposition of genre and style in Hinton’s collection of essays, meditations, tales and cube exercises works to create such a feedback loop, thus enabling the reader to construct the ‘reality’ of the fourth dimension of space. These texts provide an early example of the style of ‘deliberate disconnectedness, this art of a thing continually alluding to itself, continually breaking off short’, that Joseph Frank identifies as characteristic of Modernist literature.⁴⁰ The effect of Hinton’s individual texts, once collected together in the *Scientific Romances*, is to engender an overtly ‘open-ended situation’ in which the ‘reality’ of the fourth dimension is allowed to develop within the reader’s mind through a process of analogical construction, deconstruction and revision. In his second romance, a fantasy titled ‘The Persian King, or, The Law of the Valley’, Hinton describes his methodology as ‘the Arabic method of description’, which is, he explains, ‘used for the description of numerical quantities. For instance [...] if we are asked the number of days in the year, we answer first 300, which is a false answer, but

³⁹ W. Iser, *The Act of Reading: A Theory of Aesthetic Response* (London and Henley: Routledge and Kegan Paul, 1978), p. 68. I will refer to this text as *AR*.

⁴⁰ J. Frank, *The Idea of Spatial Form*, revised edn. (New Brunswick and London: Rutgers University Press, 1991), p. 4.

gives the nearest approximation in hundreds. Then we say sixty [...]', and so on.⁴¹ Or, to apply this method more directly to his own prose, Hinton explains:

Firstly a certain statement is made about the subject to be described, and is impressed upon the reader as if it were true. Then when that has been grasped, another statement is made, generally somewhat contradictory, and the first notion formed has to be corrected. But these two statements taken together are given as truth [...] and so on. (pp. 54-55)

Hinton is describing an infinite system of corrections here; thus he supplements his meditation 'What is the Fourth Dimension', with a fictional narrative, 'The Persian King', in which he offers another perspective on multi-dimensionality. The ideas offered in these two texts may seem unrelated or even contradictory, but taken together, they provide a more complete picture of Hinton's project.

'The Persian King, or, The Law of the Valley' (1885)

Hinton's second romance, 'The Persian King', is an allegorical tale about a king who passes from existence on Earth, and his Persian kingdom, to a limbo sort of 'place' located within an isolated valley.⁴² A mysterious old man, Demiourgos, appears in this valley, describing himself as 'the maker of men'. Demiourgos provides the king with a pair of beings, similar to human children, for the king to supervise. The children remain inert until Demiourgos instructs the king on how to control them by manipulating their physical sensations. From these humble beginnings—after an unspecified span of time—

⁴¹ C. H. Hinton, 'The Persian King, or, The Law of the Valley', in *Scientific Romances*, pp. 33-128, p. 54. I will refer to this text as SR 2.

⁴² This is not the only time that Hinton uses an Orientalist conception of 'the East' in his romances; in his 1895 novella, 'Stella' Hinton plays on racist, Western notions of 'Chinese' culture. A servant of the British empire, the 'low-lived, swearing Englishman', Stedman often disparages local culture while he and Stella are stationed in China. Referring to the Chinese as superstitious 'coolies', he is not overly saddened when Stella's dog is killed during a scuffle with a gang of pirates because 'he is in dogs' Walhalla—in that part of it where one dog can say to another, "I left from a bear hunt," or, "I came here from a row with the Chinese." What better thing can any dog or man hope to say?. Stedman speculates that Stella, an invisible woman, might be 'as different also' from him as the 'alien race' of Chinese. Hinton, 'Stella', in *Scientific Romances*, pp. 1-107, pp. 96-98. I will refer to this text as SR 8.

the king manages to raise an entire civilisation within the valley while remaining unknown to its inhabitants. The main focus of this story is the discovery, by a student at one of the colleges in the valley, of the king's role in manipulating all life there. Clarke examines the tale as a moral allegory based on Victorian thermodynamics and provides an informed and insightful reading of the text. Indeed, as we have seen, concerns about entropy derived from the Second Law of Thermodynamics influenced speculations on the fourth dimension in the nineteenth century. Clarke describes Hinton's Demiourgos as representing a 'transcendental, creative power' (*EF*, p. 118), but he is also a limited being: he tells the Persian king that "I make for thee beings *such as I can produce*", and later, "I have worked on them *as far as is within my power*" (*SR 2*, pp. 35, 38, emphasis added). While the Platonic Demiurge is the creator of the world, the notion of a *limited* creator called Demiurge appears in Gnostic philosophy, which describes a dualistic relationship between a Supreme Being—the origin of all things—and Demiurge, the craftsman who fashions the raw materials provided by the Supreme Being.⁴³ Hinton's Demiourgos would appear to be more aligned with this later conception of a limited creator or craftsman. In Hinton's story, the beings that Demiourgos fashions are limited because they are subject to "a law [that] reigns which binds them in sleepfulness and powerlessness" (p. 38). It is because of this limitation that that Demiourgos delegates to the king the task of animating his creations, by giving him the power to control these beings through the regulation of pain and pleasure:

⁴³ See C. G. Herbermann, et al. (ed.), *The Catholic Encyclopedia*, Vol. IV (London: Caxton Publishing, 1908), pp. 707-708. Clarke makes the connection between Hinton's use of Demiourgos and Plato's *Timæus*, in *EF* (p. 178). According to the *OED*, 'Demiourgous', 'Demiurgus' and 'Demiurge' are all variables of the same Greek word, defined as 'a name for the Maker or Creator of the world, in the Platonic Philosophy; in certain later systems, as the Gnostic, conceived as a being subordinated to the Supreme Being and sometimes the author of evil'. See *OED Online* <<http://www.oed.com>> [accessed 21 May 2004]. Literally translated, Demiourgos means 'public worker', and 'was originally used to designate any craftsman plying his craft or trade for the use of the public' (Herbermann, et al., p. 707).

And [Demiourgos] explained to the king how it would be possible to stimulate the children to activity, for he showed him how he could divest anything that was done of part of its pain and render it more pleasurable than painful. 'In this way you canst lead the beings I have given thee to do anything,' said the old man, 'but the condition is that thou must take the painful part that thou sparest them thouself'. (p. 39)

Thus Demiourgos is not omnipotent, but with the supplement of the king's assistance, together they are able to raise the civilisation that exists within the confines of the valley. This combination of the powers of the king with those of Demiourgos is reflective of the texture of Hinton's collected *Scientific Romances* with its constant combinations and corrections to his concept of the fourth dimension.

Demiourgos teaches the king how to stimulate activity in the inhabitants of the valley by bearing a portion of their pain. The king devises a system for directing these valley-dwellers in increasingly complex movements and activities by combining simpler, repetitive actions:

As the type of the fundamental activity, he chose an action and made the being go through it again and again. Thus the being would go through the act A, then act B. When the action AB was complete it would go through an act of the kind A again, then through an act of the kind B. Thus the creature would be engaged in a routine of this kind, AB, AB, AB, and so on. (p. 56)

Here Hinton is relying heavily on a mid-century Associationist view of psychology. According to Alexander Bain, a key Victorian Associationist psychologist, human brains are educated by performing a set of actions in quick succession, so that they eventually become automatically, physiologically linked, such as the kind of coordinated actions one performs when walking, or playing a musical instrument. In his influential 1855 text, *The Senses and the Intellect*, Bain writes:

A stream of conscious energy, no matter how stimulated, causes a muscular contraction, a second stream plays upon another muscle; and the fact that these currents flow together through the brain is

sufficient to make a partial fusion of the two, which in time becomes a total fusion, so that one cannot be commenced without the other commencing also.⁴⁴

Associationist psychology is therefore rooted in physiology: the commands for two separate bodily actions can become ‘fused’ within the brain so that the performance of one action will always trip off the other, like a switch. An assumption that underpins Associationist psychology is the belief that sentient beings are primarily driven by the opposing sensations of pleasure and pain. Bain observes that ‘pain is what we avoid, repel, flee from; pleasure is what we cling to, and labour to increase’.⁴⁵ Similarly, Hinton’s king manipulates the beings of the valley by controlling the amounts of pleasure and pain that they experience. The valley-dwellers are unaware of the king’s presence; feeling only the effects of the king’s manipulations, they construct a somewhat utilitarian philosophy for living: ‘the inhabitants knew that they sought pleasure and avoided pain, and the great object was to make their life more pleasurable’ (*SR 2*, p. 64).

Drawing on this notion, that pleasure and pain form the basis of human action and consciousness, allows Hinton to construct an allegorical tale that is explicitly about another popular scientific subject of the second half of the nineteenth century: thermodynamics.⁴⁶ Hinton uses the familiar opposing sensations of pleasure and pain in ‘The Persian King’, in a way that is analogous to kinetic and potential energy thermodynamics. Because the unseen and undetected king bears a fraction of the pain that accompanies physical exertion for every being in the valley, the scholars in the valley’s metropolis eventually realise that a slight amount of sensation is constantly being irrevocably lost:

⁴⁴ A. Bain, *The Senses and the Intellect* (London: John W. Parker and Son, 1855), p. 325.

⁴⁵ Bain, p. 89. This mechanistic view of human behaviour is also at the root of Jeremy Bentham’s philosophy of Utilitarianism.

⁴⁶ Clarke observes this analogy as well. See *EF*, where Clarke focuses primarily on Hinton’s work in relation to Victorian thermodynamics.

Hence they concluded that the sensation in the valley was gradually running down. Less and less was being felt. After a time, which they calculated with some show of precision, all feeling will have left the inhabitants and gone off in some irrevocable form. All the beings of the valley would sink into apathy. (p. 71)

Misunderstanding the cause of all their actions—and thus their survival—the valley-dwellers fear that when all sensation has been lost they will fall into apathy, which, in their reasoning, inevitably leads to death. Therefore the statement above is clearly reminiscent of the Victorian conception of entropy, with its emphasis on the eventual, but ‘necessary’, cosmic death as a result of the continual loss of heat from the universe. Hinton never explicitly mentions the fourth dimension in ‘The Persian King’; rather, he uses commonly accepted Victorian scientific theories to create an allegory that is actually a subtle critique of the epistemology that shaped those very theories. The ‘correction’ that Hinton applies to the Second Law of Thermodynamics here is his depiction of the sensation-absorbing king as the ‘continual cause of all life’ rather than the interpretation that the metropolitan scholars of the valley give to his actions, as ‘the gradual annihilation of life’ (*SR 2*, p. 71).

The main plot of this tale focuses on a student at ‘the college of applied sensations’ in the valley’s metropolis (p. 75). This student questions one of the fundamental ‘necessary’ truths of the valley, concerning the ‘laws’ of sensations, and is exiled to the outer, rural regions of the civilisation. Here he takes up with the ‘primitives’ of the valley, described in the text as ‘a peaceable race of savages [...] engaged in agriculture’ (p. 77). While the scholars in Hinton’s valley interpret the action of the king as the gradual destruction of all life within the valley, these rural-dwellers subscribe to more traditional, mythological teachings that acknowledge the existence of the king. However, these rural valley-dwellers also misinterpret the king’s role. They understand him to be an omniscient presence that is pained by any pleasure experienced by the inhabitants of the valley: ‘They

thought it pained him when they had pleasure, but not in the way in which was really the case. They thought simply that it was pain to him to see them taking pleasure' (p. 78). After living amongst these rural farmers for some time, the student 'found himself singularly at home with them. Their tastes seemed to agree with his. And he came to the conclusion that he was in reality a savage who by some mistake had been admitted to the college' (p. 77).

The student's 'going native' here evokes a nineteenth-century, progressivist evolutionary assumption, that non-Western peoples are somehow 'behind' in evolutionary development in comparison with the West, with its 'more advanced' industrial and cultural technologies. In this 'scientific' racism, although the Western and Northern European races may be more evolutionarily 'advanced'—culturally, intellectually, and sometimes even physically—they are also ancestrally linked to these 'primitives', and therefore constantly in danger of 'reverting' into 'savagery'.⁴⁷ Therefore, the student, although he possesses a 'scientific'—or Western—education, may be, at heart, a 'savage'. The student's trans-cultural status enables him to combine the science of the scholars and the mythology of the farmers to reveal the true nature of the king. The 'primitive' mythology of the valley is closer to the 'truth' of the king's action, but it is still only a partial—and therefore, incorrect—view of 'reality' in the valley: 'Many curious traditions were handed down amongst them. [...] They thought that there was a power over them, and in this they recognised the king; but how it was that this power prompted them they did not know' (p.

⁴⁷ Given credence by Francis Galton's 'science' of eugenics, anxieties about 'evolutionary degeneration' permeate *fin-de-siècle* texts such as R. L. Stevenson's *The Strange Case of Dr. Jekyll and Mr. Hyde* (1886), M. Nordau's *Entartung* (1892), translated into English as *Degeneration* in 1895, and J. Conrad's *The Heart of Darkness* (1899-1902).

78). The student is able to apply scientific reasoning to the traditional beliefs of the farmers in order to discover the ‘truth’:

Now the student saw clearly some errors, some contradictions in their belief. For instance, he knew that beings only followed pleasure, and directly pleasure was equalled by pain, sank into apathy, and then gradually vanished away. Hence, he knew there need be no apprehension of the power’s acting as they thought. He did not approve the results in their life, for it was in consequence very gloomily framed [...]. But he knew as a scientific fact that there was constant diminution of feeling; and since he also knew that beings in the valley did nothing except it was more pleasant, he concluded that although pleasure and pain might both be disappearing, still pain must be disappearing to a greater extent. Now since the feeling did not become nothing, but passed away out of the perception of the inhabitants, it followed that it must pass away to some being. It did not disappear as feeling, but passed away from the sensation of the inhabitants. Is there a being, then, he asked himself—the power of whom these simple folks tell—who bears the difference of pain, and so makes existence pleasant to us? And is that the meaning of what they say that our pleasure pains him? Is it just the truth read backwards [?] (pp. 78-79)

The application of scientific reasoning and ‘fact’ to ‘primitive’ mythologies is illustrative of the appropriation of Eastern philosophies that was popular amongst Western mystics in the second half of the nineteenth century, as Webb observes.⁴⁸ With regard to the nationality of the king, and the implied Eastern setting of the ‘The Persian King’, Hinton also appears to be subscribing to a mystical ‘othering’ of Eastern philosophies as the ‘primitive’ seat of modern culture and traditions. Observable here is a further implication of Hinton’s desire to move ‘backward’ from discursive thought to its mythological roots. By making the student—who has ‘gone native’—the discoverer of the true action of the king through the combination of science and religious mythology, Hinton also appears to share the desire of Stewart and Tait, to create a more flexible and communicative relationship between the opposing discourses of science and religion.

⁴⁸ See J. Webb, *The Occult Underground*, revised edn. (LaSalle: Open Court, 1988).

The dogmatic and therefore limited nature of both science and religion is a theme that recurs throughout Hinton's *oeuvre*.⁴⁹ Indeed, the very title of his collection of texts, *Scientific Romances*, is significant in its combination of two opposing discourses: science, or realism, which prioritises observation and empirical evidence, and romance, or fantasy, which celebrates intuition and imagination. Hinton frequently challenges dogmatic thinking, as his conception of the fourth dimension was itself a subversion of the argument by logical necessity. The danger of the persistence of intolerance to new ideas is illustrated in 'The Persian King', where Hinton explains that the king no longer attempts to reveal his presence to the valley-dwellers, even to those such as the enlightened student, because:

The inhabitants, as soon as they had communication with him, at once thought they knew his final will. And they were a set most peculiarly stiff in their notions, and with the kind of sanction which communication with him gave them, even the most absurd ideas if once conceived took a very long time to eradicate. (p. 80)

The king, like Hinton, recognises the perils of mistaking a partial perception for an absolute knowledge: it causes the development of limiting and false epistemologies. In the valley, the result of the king's early interactions with the valley-dwellers is that the views of the metropolitan scholars—although now secularised—are stagnant and self-righteous.

The student explains that the error in reasoning that results in such faulty and 'absurd ideas' lies in the failure of the thinker to determine the "two parts in knowledge—one corresponding to reality, one introduced by the action of our minds" (p. 84). This "mode of the mind's action makes it perceive certain qualities as parts of real existence, which do not belong to real existence at all" (p. 84). According to the student, errors in

⁴⁹ In his final text, which was in press at the time of his death, *An Episode of Flatland*, Hinton's autobiographical character, Hugh Farmer, rails against the dogmatism of theology, continuing on to remark that 'the dogmatism of scientific men is stronger than the dogmatism of religion'. *An Episode of Flatland: or How a Plane Folk Discovered the Third Dimension* (London: Swan Sonnenschein, 1907), pp. 73-74.

reasoning arise whenever the thinker mistakes the effects produced by the mind's action for 'true' representations corresponding to the external world. The student offers an evolutionary, progressivist reading of the movement from mythical to discursive epistemology in the valley that is in line with Müller and Cassirer: "in old times these qualities were considered to be qualities of reality instead of introduced there [in the mind]" by the mind's action (SR 2, p. 84).

Mythical epistemology, as described here, calls to mind Ruskin's 'pathetic fallacy', which occurs when the internal feelings or agencies of the subject are displaced onto the object.⁵⁰ It is similarly instructive to refer to Cassirer's concept of 'momentary gods':

When external reality is not merely viewed and contemplated, but overcomes a man in sheer immediacy [...] then the spark jumps somehow across, the tension finds release, as the subjective excitement becomes objectified, and confronts the mind as a god or daemon. (p. 33)

According to Cassirer, any new object that humans encounter and utilise, such as a tool, acquires a subjective status:

As soon as man employs a tool, he views it not as a mere artifact [sic] of which he is the recognized maker, but as a Being in its own right, endowed with powers of its own [...]. Especially the ax [sic] and the hammer seem to have attained such religious significance in the earliest times. (p. 59)

Hinton's student observes a similar fetishising tendency on the part of the valley-dwellers, explaining to a friend that "when we observe any object we always attribute to it a certain

⁵⁰ See J. Ruskin, 'On the Pathetic Fallacy', in *Modern Painters*, Vol. III, in *The Works of John Ruskin*, Library Edition, Vol. V, ed. by E. T. Cook and A. Wedderburn (London: George Allen, 1904), pp. 201-220. There is evidence that Hinton knew Ruskin while the former was a student at Oxford. An entry for 10 December 1874 in Ruskin's diary mentions a 'Hinton'. Although the editors of Ruskin's diaries, J. Evans and J. H. Whitehouse, conclude that this entry probably refers to James Hinton, in his unpublished MA thesis, Marvin H. Ballard speculates that it is more likely that, given the date, this entry refers to Charles Howard Hinton. Of course, as Hinton's father was a founding member of the Metaphysical Society alongside Ruskin, it is likely that Hinton also knew Ruskin through his father. See J. Ruskin, *The Diaries of John Ruskin, 1874-89*, ed. by J. Evans and J. H. Whitehouse (Oxford: Clarendon Press, 1959), p. 830; and Ballard, 'The Life and Thought of Charles Howard Hinton', Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg Virginia, 1980, p. 15, note 44. Ballard also claims that in later life Hinton mentioned Ruskin as an Oxford influence, although I have not been able to verify his source. Another source, the student magazine of the University of Minnesota, *Ariel*, gives a brief biographical sketch of Hinton, 'our new assistant Prof. of Mathematics'. This source names Ruskin as one 'among his teachers and acquaintances'. See Anon., *Ariel* 21 (11 September 1897): 8.

power” (SR 2, pp. 84-85). Although the civilisation of the valley in ‘The Persian King’ has clearly ‘advanced’ into a mode of discursive epistemology where, according to Cassirer, a word ‘is something essentially ideal, a “sign” or symbol, the object of which is not a substantial entity but lies rather in the relations it establishes’, the mythic origin of thought in the valley still limits their ability to perceive the ‘true’ nature of their external world (Cassirer, p. 56). The student states that, in the metropolis of the valley, thinkers have ceased searching for an entity or force such as the king because “we are extending a conception which springs solely from the only way in which we can perceive” (SR 2, p. 85). The problem here is not the disappearance of sensation, but the limited perceptions of the valley-dwellers. Thus Hinton uses the process of reasoning and discovery that the student undertakes in ‘The Persian King’ to allegorise what he sees as a solution to the flawed epistemology that has led mathematicians and philosophers to limit space to three dimensions.

After the student’s discovery of the king, his life follows a Christ-like arc. He returns from his exile to the valley’s metropolis, teaching, healing the sick, befriending the poor and causing political disruption until finally he is betrayed by a friend to the authorities, tried and executed. However, unlike another martyr of earlier times in the valley—a prince with whom the king had had direct contact—the student ‘did not [...] look upon nothingness as the desired end of existence. He felt the presence of the one whom he had discerned through thought, and this seemed more real to him than life or death’ (p. 98). Although equipped with a flawed intuition, the student has been able to discover the presence of the king through careful reasoning. The student’s understanding of the king, who seems ‘more real to him than life or death’, is a sort of *sui generis*

hyperrealism that is difficult to express within the existing language of the valley. The student is unable to communicate his perception of the king adequately to the other inhabitants of the valley. Unlike his predecessor, the prince, the student's discovery of the king does not lead him to develop a negative, nihilistic philosophy; however, he could perhaps be accused of solipsism or madness, based on his inability to communicate the full import of his discovery. As Ruskin observes in his discussion of the pathetic fallacy, 'the language of the highest inspiration becomes broken, obscure, wild in metaphor' (p. 209). The difference between the reactions of the student and the prince to the king appears to be linked to the differences in their methods of discovery.

In the case of the prince, the king sought him out, revealing to him his presence and the extent of his powers. The king made contact with the prince, Hinton explains, because he was lonely: 'Now when the king saw the inhabitants becoming more like human beings he had known, he felt that he was solitary, and he desired to have some intercourse with them' (p. 52). The king sought the companionship of the beings he helped to maintain; however, every time he appeared amongst them, 'they recognized him at once as some one more powerful than themselves and were afraid of him' (p. 52). The king decided to select one man, the 'most perfect in form and in mind' in the entire valley, to be his confidant. This man was also a prince, and therefore similar to the king in that he too was 'destined to reign in his turn over a numerous people' (p. 53). In order to increase the prince's empathy with him, Demiourgos instructed the king to bestow upon the prince a portion of the rays with which he manipulates the actions of the valley-dwellers: 'for then this being [the prince] having these rays and the power of bearing pain for another other than himself, would be like the king, and being like him would understand him' (p. 53).

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However, the king's plan had disastrous results; once in possession of a portion of the king's rays, the prince concluded:

'One thing succeeds another in the valley; pain follows pleasure, and pleasure follows pain. But the cause of all being is in bearing pain. Wherefore,' he cried, 'let us seek an end to this show. Let us pray to be delivered, that at least, pain ceasing, we may pass into nothingness.' (p. 53)

The difference in the reactions of the student and the prince to the discovery of the king's actions can be read as resulting, in part, by the difference in the ways in which they discover the king: the king reveals his powers to the passive prince, while the student must undergo a process of learning, unassisted by the silent and unseen king. Unlike the archetypical prince who acquires the knowledge of the king by a revelation—a 'divine right' of sorts—the student must undergo the necessary process of consciousness-expansion, which prepares him for the discovery of the king and therefore allows him to fully comprehend the king's role in the valley. The student does not conflate the king's action of absorbing pain with the notion of an omnipotent 'first cause'. In his attempts to explain the nature of the king's action to a friend, he observes that

'a cloak has been woven. The nature of [the king] is hidden. His nature has been connected with introspective questions about the origin—of, of all things, the way in which we perceive. All this must be dashed aside. This being is the cause of all our life, and yet he needs your help as you understand help.' (p. 85)

The 'help' that the valley-dwellers can lend the king is to follow a careful process of consciousness-expansion through study, experience and reflection, such as the one undertaken by the student. Thus the inhabitants of the valley must discover the king for themselves, a revelation that the king is unable to instigate without unintended and disastrous effects. Having learned this lesson through his interactions with the prince, the king does not actively intervene in the student's process of his discovery. After conversing with the rural valley-dwellers, reading historical and scientific texts and undergoing the

period of speculation that leads to his conclusion that the farmers have simply read the truth 'backwards', the student goes out walking one night. Unlike the prince, the student does not receive any direct communication from the king:

Now it may be considered surprising that the king did not communicate in some way with the student, for by means of his rays he was in possession of all that had gone on in his mind. But the king had found over and over again that if he manifested himself to any one of the inhabitants of the valley, the effect, though good at the immediate time, was most disastrous for the following time. [...] So when the student went out into the open air he saw nothing except the stars, and heard nothing except the wind. [...] He had not gone far when he saw a kind of luminousness. Is the moon beginning to rise? He thought. But he found he had passed the light and was leaving it behind. He could not have passed the moon thus. He went towards the light, and when he had reached it, it seemed like a slender staff of light. (p. 80)

This 'slender staff of light' is one of the rays by which the king manipulates the sensations of the inhabitants of the valley, as the student quickly discovers through a process of trial and error. The king neither appears nor speaks to the student.

In the direct discourse that follows the narrative portion of 'The Persian King', Hinton warns the reader that 'we should be very careful in attributing the notion of causation' (p. 108). Observing the chain of actions that link pleasure and pain, the prince concludes that bearing pain is 'the cause of all being'. It is this conclusion that makes life itself unbearable for him. However, according to Hinton, the prince is labouring under a faulty process of reasoning and it is his teachings that lead to the flawed epistemology employed by the metropolitan scholars in the 'present day' in which the main action of the narrative is set. Although there are Biblical overtones to the king's revelation to the prince—in that the king speaks directly to the prince, causing him to become a prophet of sorts—and to the student's relationship with the king, his evangelising and subsequent execution, there is also an implicit positioning of the prince and the student as representatives of science, of scientific researchers who sacrifice themselves in their quest

for knowledge.⁵¹ If one interprets the characterisations of the prince and the student in this way, then it would seem that Hinton is positioning the prince as a representative of nineteenth-century science in particular, with its general fixation on the opposing poles of progress and annihilation.

In the second half of the nineteenth century, broad acceptance of the theory of evolution—finally given scientific authority by Darwin’s research—also necessitated the acceptance of irreversible change and loss. Irreversible change, when applied to thermodynamics, results in the concept of entropy. Though often popularly understood as the mechanism behind ‘progressive’ change for the better, evolution by natural selection also has a dark underside. According to Beer, ‘in *The Origin* itself the panglossist tendency of this argument is uneasily phrased in a way that indicates an unresolved trouble in [Darwin’s] mind about the necessity for the concepts of struggle and extinction in the hypothesis’.⁵² The realisation of the amount of suffering that must occur for natural selection to function was one reason why Darwin rejected the idea of a ‘benign orderer’ (p. 62). Writing near the end of his life in his *Autobiography*, Darwin observes: ‘This very old argument from the existence of suffering against the existence of an intelligent first cause seems to me a strong one; [...] the presence of much suffering agrees well with the view’ of natural selection.⁵³ Darwin’s stance against the likelihood of an intelligent, omnipotent creator is reflected in the natural history texts of Hinton’s valley. During the

⁵¹ In his study, *Dying to Know: Scientific Epistemology and Narrative in Victorian England* (Chicago: University of Chicago Press, 2002), George Levine argues that Victorian scientists often consciously or unconsciously romanticised their role as ‘martyr’s to knowledge. Levine discusses *Sartor Resartus* as a model text for this trope. See especially pp. 1-43. I will refer to this text as *DK*.

⁵² Beer, *Darwin’s Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth-Century Fiction*, 2nd edn. (Cambridge: Cambridge University Press, 2000), p. 25. I will refer to this text as *DP*.

⁵³ Darwin, *The Autobiography of Charles Darwin, 1809-1882*, ed. by N. Barlow (New York and London: W. W. Norton, 1969), p. 90. Here Darwin, like Hinton, appears to assume that intelligence is linked with benevolence.

student's researches, he reads in a text on the beliefs of the ancient people of the valley that "the existence of a power shaping the valley for the good of beings in it is clearly disproved. First, by the amount of suffering there is in the valley [...]" (SR 2, p. 79). Although—as the above observation from his *Autobiography* implies—Darwin was not the first person to base his conclusion of the non-existence of a benign creator on the amount of suffering in the world, his conclusions were at the centre of theological and scientific controversy during Hinton's life and it is likely that his contemporaries would have read 'The Persian King' in this context.

However, in Hinton's valley, a benevolent—albeit limited—king exists. The fact that the scholars refuse to accept the student's argument, and even put him to death because of it, seems to be in part a reaction informed by the earlier doctrine propounded by the prince. The notion that a king actually exists, and that he condones the suffering of the inhabitants of the valley—or worse yet, is incapable of preventing it—is possibly more painful than the presumed non-existence of the king. Such is the view of the student's friend, with whom he shares his discovery of the king's action: "This seems to me a very dismal doctrine", he tells the student: "I can imagine some poetry in the idea of a being of infinite power, strong and glorious, but none in the idea of a suffering being" (p. 83). The sublime reaction to the idea of infinite power, the 'poetry' of an omnipotent king, is the pathetic fallacy which lies at the root of the problem of epistemology in the valley, as the student observes:

'Whatever we apprehend, we apprehend as powerful. Now since this quality of powerful comes in with regard to everything, it is probably introduced by the mind, and is rather a part of the mental action in giving an idea of reality than a quality of reality. [...] Of course, if we think of [the king] at all, we must conceive of him as powerful; *the nature of our mental action demands this.*' (p. 85, emphasis added)

Like Cassirer's 'momentary gods', the student recognises that the valley-dwellers unconsciously attribute omnipotence to the king.

The nihilism of the prince also mirrors the pessimism of the second half of the nineteenth century that was given voice in the theory of entropy. The acceptance of evolution by natural selection within the scientific community finally made explicit the fact that change was occurring in the universe and that loss—through extinction—was irreversible. Jacques Monod, a twentieth-century biologist and Nobel laureate, describes the link between evolution and entropy: “evolution in the biosphere is [...] a necessarily irreversible process defining *a direction in time*; a direction which is the *same* as that enjoined by the law of increasing entropy”.⁵⁴ The speculation that there would eventually be a universal heat death brought about as a result of the entropic loss of heat from the universe, as Dale observes, ‘nicely brings out the price the positivist pays for reducing the energy we call consciousness to a physical basis [...] that has originated in the sun’ (p. 229). If all possible life is limited to the material and visible, three-dimensional world, then the extinction of the source of life—heat and light—for that world is irrevocably fatal. Such annihilation by entropic disorder is only possible within a universe where change and loss are necessarily irreversible, where the movement follows not a cyclical pattern, but rather one of linear progression. As Beer observes:

Darwinian theory [...] excludes or suppresses certain orderings of experience. [...] It debars return. It does not countenance [...] pure invariant cycle [...]. Nor, except for the extinction of a particular species—does it allow either interruption or conclusion. (*DP*, p. 8)

The ‘extinction of a particular species’ is expanded to encompass the termination of the entire living, material universe in the nineteenth-century theory of entropy. Energy, or

⁵⁴ J. Monod, quoted in Dale, *In Pursuit of a Scientific Culture: Science, Art, and Society in the Victorian Age* (Madison: University of Wisconsin Press, 1989), p. 231, original emphasis. Dale observes that Monod has brought ‘the entire strain of late nineteenth-century scientific pessimism up to date’, (p. 231).

heat, becomes increasingly inaccessible and chaotic. The eschatological drive of this theory is reflected in the teachings of the prince in 'The Persian King': the prince understands the relationship between pleasure and pain to be a causal chain of events and it is this linear, rather than a more cyclical, interpretation of the movement of the universe that is behind the failure of both science and theology, according to Hinton.

In the discourse following the narrative portion of 'The Persian King', Hinton addresses the application of his allegory to Victorian entropy, explaining that 'we have thought of motion as a thing in itself impaired by the multitudinous obstacles it meets in the world' (*SR* 2, p. 108). The result of interaction between objects is friction; through friction, a small portion of the heat that is generated is released into the universe, never again to be accessible. But rather than stop here, where the science of thermodynamics does, Hinton asserts: 'Let us look on the circumstances more impartially. Let us look on them as something co-equal with motion. *Let us find[,] in that mode whereby all motion comes to an end[,] the originating cause also whereby all motion comes to be*' (p. 108, emphasis added). In Hinton's interpretation, what nineteenth-century physicists perceive to be deadly chaos is actually a positive, creative force. This shift in perception seems to indicate the beginnings of a trend of acceptance and even celebration of disorder and the relativity of perception that has more in common with the aesthetics of the twentieth century rather than the nineteenth century, as Clarke observes: 'this unusual championing of dissipative processes—an appreciation for, rather than denigration of, friction and resistance—is the truly predictive portion of Hinton's text' (*EF*, p. 120).

Clarke claims that Hinton manoeuvres his system to create 'a four-dimensional agency that restores true causation to the cosmos' (p. 120). However, this statement needs

qualification. As I have observed, Hinton is cautious in 'The Persian King' concerning the concept of causation. In his recapitulation of the tale, Hinton writes:

Again in past times people really felt sure about certain things being causes which we now know had a very slight connection with the result. Incantations have been supposed to have an effect on physical phenomena, such as eclipses. [...] To say one external event is the cause of another is to put an absolutely unknown and spiritual relation in the place of impartial observations. [...] To be the antecedent in a chain of movements is the fact which we can observe about any movement in the external world. We cannot strictly say what movements of gases, water, &c. cause this volcano. We can only say what movements of gases, water &c., precede this volcanic eruption analogous to movements which have preceded other volcanoes. (pp. 108-110)

Physical events in the external world do not function as causes in themselves, Hinton argues. When speaking of a 'true' causal relationship, Hinton describes it as a 'spiritual and unknown relation'. 'To cause a motion is the name for the action of our soul upon matter', Hinton continues (p. 110). Hinton here implies that causation involves an act of will: 'We are the cause of actions we will. The notion of cause is derived from our "will" action, and the notion of cause ought to be kept to this connection' (p. 109). Thus, in the case of one using one's arm to lift a stone, one should not describe the flexing of the muscles in the arm as the 'cause' of the stone's movement, Hinton explains. Rather, one should attribute causation to the "'will" action'—the mental command that sets into motion the movement of the muscles in the arm (pp. 108-109). Therefore, when observing a chain of events in the external world, it is impossible to attribute a 'Theory of Mind' to any particular event, labelling it an agent, or a cause.⁵⁵ However, omitting causation 'from the external chain of events' does not necessarily preclude the possibility of any agency in

⁵⁵ By 'Theory of Mind' I refer to a theory of 'mind-reading' informed by cognitive psychology, which, literary theorist Lisa Zunshine explains, 'describe[s] our ability to explain other people's behavior in terms of their thoughts, feelings, beliefs, and desires. Thus we engage in mind-reading when we ascribe to a person a certain mental state on the basis of her observable action [...]. Attributing states of mind is the default way by which we construct and navigate our social environment' (p. 6). See Zunshine, *Why We Read Fiction: Theory of Mind and the Novel* (Columbus: Ohio State University Press, 2006).

the external world, according to Hinton: 'Let us not introduce the notion of causation at haphazard. But if we find in the external world signs of an action like our own will action, let us then say, Here is causation' (pp. 110-111). This is the 'true causation', which, as Clarke observes, is implied—in the context of Hinton's greater project—to be 'a four-dimensional agency'.

However 'true causation', or four-dimensional agency should not be read as necessarily implying a 'first cause'. As observed with other writers on the fourth dimension, there is an avoidance of discussion of origins in Hinton's hyperspace philosophy as well. While Hinton often describes the fourth dimension as if it were *the* transcendent metaspace, throughout his work he simultaneously undermines any attempt to read hyperspace philosophy as an absolutist project. This tension will be foregrounded throughout my study of Hinton's writing, and in 'The Persian King' we can observe indications of the open-endedness of Hinton's project in the relationship between the king and Demiourgos. Although it is through the agency of the king that the beings in the valley are animated to life, he is not the cause of their existence. The king merely sets the beings into motion by following Demiourgos's instructions; Demiourgos has created them, through playing music on his pipe. Demiourgos's powers are similarly limited; as described above, he is unable to animate the beings, and he is unable to create beings that can animate themselves. There is also no explanation of the origin of the tool he uses to create the beings, the pipe. It is significant that literally translated from the original Greek, Demiourgos is a 'workman', a *bricoleur*. Therefore we cannot observe a first cause within this narrative, and it is here that we encounter the limits of the dimensional analogy. A first cause cannot be explained by analogy because nothing corresponds to it. Thus, as

Cassirer observes, Yahweh in the Old Testament can only explain ‘himself’ to Moses as “‘I am that I am’” (Cassirer, p. 77). This is pure tautology; it is possible to extend this self-referential statement into an infinitely repetitive series without ever adding to its meaning. The only way to make such a series cognisable, Hinton claims, is to limit it, usually through the device of personification. Hinton acknowledges his own activity of creating false limitations in ‘The Persian King’, writing that, when using the king as a personification of ‘an ultimate medium’, ‘it must be remembered that this conception of an ultimate medium was *merely a supposition* to enable us to see and roughly map out the relations of the things we were investigating. Where we were really landed was in an infinite series’ (SR 2, p. 120, emphasis added). This ‘ultimate medium’, represented by the Persian king, can be read also as the ‘space’ where all commonplace conceptions of temporality and extension are dissolved:

To this ultimate medium all movements at any distance from each other must be almost equally present at every part. At whatever distance from one another two affections of this ultimate medium be supposed to take place, the effect of the one will travel the place of action of the other instantaneously. (p. 119)

Thus the ‘ultimate medium’ can be read as a transcendental, fourth dimension of space, where all points, or ‘slices’ of three-dimensional space exist simultaneously. The implication here then is that the fourth dimension itself could be a provisional concept, ‘merely a supposition’, which allows one to map out the relations of the universe.

Attempts to actually comprehend this ‘ultimate medium’ result in an infinite series of observations. According to Hinton, an infinite series will often appear as a result of using flawed instruments of measurement or observation. For example, in algebra, Hinton explains, ‘infinite series occur when the object which it is wanted to represent in algebraical terms cannot be grasped by the algebra’ (p. 121). Just as algebra breaks down

when it tries to represent the ‘trigonometrical idea’ of *cosine x*, language, based on the presently limited perceptual capabilities of the human mind, begins to break down when it attempts to encounter the fourth dimension. In algebra, ‘when there is no single term or set [...] which will serve, the object is represented by means of an infinite series’ (p. 121). Thus, in working with a similarly limited instrument, language, in his attempts to represent the fourth dimension Hinton provides the reader with a series—multiple though not infinite—of texts, each of which presents a different perspective on the fourth dimension. Here Hinton’s methodology is similar to Claude Lévi-Strauss’s *bricoleur*, a person described by Derrida as:

Someone who uses ‘the means at hand,’ that is, the instruments he finds at his disposition around him, those which are already there, which had not been especially conceived with an eye to the operation for which they are to be used and to which one tries by trial and error to adapt them, not hesitating to change them whenever it appears necessary, or to try several of them at once.⁵⁶

Like the *bricoleur*, Hinton borrows ideas from many sources. He combines the latest speculations in geometry with popularised Eastern mysticism, Christian mythology, Kantian philosophy and Platonic idealism. Out of these multiple discourses, he creates a ‘new’ one: the fourth dimension of space, or, hyperspace philosophy.

As opposed to the *bricoleur*, there is the myth of the engineer, ‘a subject who’, Derrida writes, ‘would supposedly be the absolute origin of his own discourse and would supposedly construct it “out of nothing”’ (p. 256). The myth of the engineer is the myth of a being who has ‘broken with all forms of *bricolage*’, Derrida continues, noting that ‘the odds are that the engineer is a myth produced by the *bricoleur*’ (p. 256). In ‘The Persian King’, Hinton plays with the myth of the engineer, through positioning the king as the ‘ultimate medium’ being acted upon in the valley, while at the same time undercutting this

⁵⁶ J. Derrida, ‘Structure, Sign, and Play in the Discourse of the Human Sciences’, in *The Languages of Criticism and the Sciences of Man*, pp. 247-265, p. 255.

myth of the king as 'first cause' by making him play the role of *bricoleur* in his relationship with Demiourgos. Like the *bricoleur* of Derrida and Levi-Strauss, the king in 'The Persian King' uses the materials provided him by Demiourgos to raise the civilisation of the valley. The king inadvertently 'creates' the myth of the engineer when he reveals himself to the prince. Similarly, Hinton uses pre-existing narrative devices such as personification in an attempt to undermine the myth of the engineer.

The king animates the valley by a paradoxical act of will-to-passivity; as an 'ultimate medium', he is 'bearing rather than exerting force' (SR 2, p. 127). The force itself does not originate with the king. The king/ultimate medium is therefore an absence, a void that allows sensation/heat to 'pass off'. As the king bears a portion of the painful sensation of the inhabitants of the valley, creating an imbalance in sensation which initiates a prompt to action, so does the disappearance of heat in the three-dimensional universe allow for movement. Hinton explains:

The ultimate transformation of all energy of motion is into the form of heat. [...] This passing of energy into the form of heat must not be regarded as a side circumstance, as less essential to the laws of nature than that law which we call the conservation of energy. (p. 107)

A void in the place of a divine agent or personality is difficult to imagine or explain within the current language. Similarly, Beer observes that 'language is anthropocentric. It places man [sic] at the centre of signification', as does mythic thought, with its spontaneous attribution of humanistic agency to inanimate objects and intangible forces (DP, p. 47). Thus, there are no 'terms' that can grasp such a concept as Hinton's void in the place of a divine agent, just as in 'What is the Fourth Dimension', he struggles to describe the appearance of a four-dimensional object. Derrida identifies this problem of articulation aptly, in his discussion of origin myths and the incest taboo: 'It could perhaps be said that the whole of philosophical conceptualisation [...] is designed to leave in the domain of the

unthinkable the very thing that makes this conceptualisation possible' (p. 254). The fourth dimension itself is 'in the domain of the unthinkable', and it is only through employing various discursive devices that Hinton manages to approach a construction of a means to conceptualise it. However, as I will argue, Hinton's hyperspace philosophy also functions along the same lines of subversion and support that Derrida observes here. In many ways then, Hinton is a model *bricoleur* himself.

As a *bricoleur*, Hinton relies upon varying strands of Christian mythology as a foundation for 'The Persian King'. His popularity among spiritualists and Theosophists also implies that popular interest in hyperspace philosophy such as his was facilitated by the fact that his proposal of successive levels of energy distribution can be read as support for belief in the immortality of the soul. However, Hinton's argument in 'The Persian King' also implicitly challenges much of mythico-religious—and thus humanistic—thought. The methodology of the *bricoleur*, with its avoidance of absolutes, is, as Derrida observes, 'no longer turned toward the origin'. It is, rather, a methodology that 'affirms freeplay and tries to pass beyond man and humanism, the name man being the name of that being who [...] through the history of all his history—has dreamed of full presence, the reassuring foundation, the origin and end of the game' (pp. 264-265). The drive for transcendence here—'to pass beyond man and humanism'—is reflected in Hinton's depiction of the student, who, through discerning the king's action through careful introspection and reasoning, becomes one of those whom Hinton describes as 'true personalities' (pp. 127-128). The valley-dwellers 'had two modes of access to the king, one through their own selves [...], one through the outer world' (p. 128). It is, Hinton

implies, through using both introspection and a process of reasoning based on empirical observation, that a 'truer' understanding of the nature of the universe can be apprehended.

Hinton's phenomenological project, science fiction and Modernism

Clarke also mentions Maxwell's demon in his discussion of Hinton's second romance, writing that Hinton's

intimation here is in line with James Clerk Maxwell's crucial if debateable observation that entropy is not a substance like matter or a dynamism like energy, but an epistemological effect, a product of the limitations of human perception for instance, our inability to manipulate matter at the molecular level. (EF, p. 119)

Here Clarke observes the heart of Hinton's greater project of popularising the fourth dimension: the fourth dimension, for Hinton, is a vehicle of expansion for the possibilities of human perception, a means to offer new and differing perspectives on the world. Like Maxwell's demon, Hinton's fourth dimension is a fiction that illustrates the idea that it is the human mind that formulates reality, and that this version of reality is always open to other formulations. As a science fiction writer wishes to engender 'cognitive estrangement' in his or her readers by constructing a scientifically plausible, but fantastically alternate, reality, Hinton seeks to engender the perception of a fantastically alternate space, through a variety of narrative strategies.⁵⁷ In addition to the two romances I have discussed above, there are three remaining texts within his First Series of *Scientific*

⁵⁷ In using the term 'cognitive estrangement', I am referring to Darko Suvin's seminal discussion of the genre of science fiction. See *Metamorphoses of Science Fiction: on the Poetics and History of a Literary Genre* (New Haven: Yale University Press, 1979). Suvin defines science fiction as 'a literary genre whose necessary and sufficient conditions are the presence and interaction of estrangement and cognition, and whose main formal device is an imaginative framework alternative to the author's empirical environment' (pp. 7-8, original emphasis). However, Suvin excludes Hinton's texts from this genre, perhaps because it violates his claim that science fiction 'does not use imagination as a means of understanding the tendencies latent in reality' (p. 8). Brian Stableford, in his study of the *Scientific Romance in Britain 1890-1950* (London: Fourth Estate, 1985), makes the insightful observation that a 'distinguishing characteristic is not that scientific romances are scientific, but that they pretend to be, and that they pretend to be in order to serve some rhetorical purpose' (p. 8, original emphasis). While Stableford briefly addresses Hinton's work, his main focus is British magazine fiction of the early decades of the twentieth century.

Romances. The third romance of this volume, a meditation titled ‘A Plane World’, employs the dimensional analogy in a manner similar to Abbott’s *Flatland*; however, the structure of this text is not a traditional narrative as is Abbott’s. ‘A Plane World’ is a text that consists of direct exposition, anecdotes, diagrams and even cut-outs of ‘two-dimensional’ beings for the reader to make use of in imagining a plane world. The fourth romance, a text titled ‘A Picture of our Universe’ takes an entirely different approach to the fourth dimension, discussing it in terms of electromagnetism and the ether.⁵⁸ The fifth and final romance of the First Series, ‘Casting out the Self’, a text which I will address in further detail, offers instructions for the reader’s guidance in performing a series of exercises with 27 wooden cubes. What is perhaps most obvious in Hinton’s cube exercises—but discernable throughout his writings—is the phenomenological approach that Hinton takes to engendering the conceptual reality of the fourth dimension of space. Although the individual texts comprising the *Scientific Romances* differ both in genre and discursive approaches to the fourth dimension, they are also connected, most obviously in that they are included in the same volume, but more fundamentally in that they are all grounded in Hinton’s desire to express his understanding of the fourth dimension. The effect of reading all of the texts is an overt manifestation of what Iser describes as happening during the reading of any text:

Whatever we have read sinks into our memory and is foreshortened. It may later be evoked again and set against a different background with the result that the reader is enabled to develop hitherto unforeseeable connections [...]. Thus, the reader, in establishing these interrelations [...] actually causes the text to reveal its potential multiplicity of connections. These connections are the product of

⁵⁸ Clarke examines ‘A Picture of our Universe’ with reference to D. H. Lawrence’s conception of the fourth dimension and Modernist treatments of the ether, see *EF*, pp. 180-192.

the reader's mind working on the raw material of the text, though they are not the text itself—for this consists of just sentences, statements, information, etc.⁵⁹

The effect of conceptualising, or—as is often the proposed result of Hinton's cube exercises—visualising, the fourth dimension, is not then a direct result of Hinton's romances in themselves. It is, however, the effect of reading Hinton's *Scientific Romances* as a complete series of texts, which mimics the process of reading that Iser describes above. The movement of the reader's imagination through the juxtaposed texts contained within the *Scientific Romances* is a dynamic one, highlighting the 'gaps of indeterminacy' in a way that is different from the more traditional nineteenth-century novel, and is more aligned with Iser's description of the act of reading Joyce's *Ulysses*. Discussing the dramatic stylistic variation between chapters in *Ulysses*, Iser writes:

Each chapter prepares the 'horizon' for the next, and it is the process of reading that provides the continual overlapping and interweaving of the views presented by each of the chapters. The reader is stimulated into filling the 'empty spaces' between the chapters in order to group them into a coherent whole.⁶⁰

The reader of Hinton's *Scientific Romances* must overlap and connect the differing perspectives on the fourth dimension presented in each individual romance in order to construct an understanding of the concept. The process of filling in these gaps, according to Iser, is what generates 'the virtual dimension of the text, which endows it with its reality' (*IR*, p. 279). Establishing the reality, or at least the plausibility, of the concept of the fourth dimension is the focus of each of Hinton's texts. The overt gaps in these texts call for strenuous creativity on the part of the reader.

⁵⁹ W. Iser, *The Implied Reader: Patterns of Communication in Prose Fiction from Bunyan to Beckett* (Baltimore and London: Johns Hopkins University Press, 1974), p. 278. I will refer to this text as *IR*.

⁶⁰ 'Indeterminacy and the Reader's Response in Prose Fiction', in *Aspects of Narrative: Selected Papers from the English Institute*, ed. by J. H. Miller (New York and London: Columbia University Press, 1971), pp. 1-45, p. 39.

All fictional literary texts describe specific objects, people and events that have not or cannot have occurred in the world external to the text. Thus, according to Iser, every literary text ‘diverges from the real experiences of the reader in that it offers views and opens up perspectives in which the empirically known world of one’s own personal experience appears changed’ (‘Indeterminacy’, p. 8). However, Iser continues, differences between the world presented within the text and the reader’s external reality are usually counterbalanced by the reader during the reading process, by referring the text to the external world (p. 9). In texts where the world presented within is so radically different from the reader’s own that outside reference is meaningless, the logic of the text begins to compete with the reader’s understanding of the external world. In these cases, Iser claims, ‘the text may tend to function as a criticism of life’ (p. 9). Hinton’s intention in popularising the fourth dimension is to offer a critique of Western epistemology, and as Clarke and others observe, he also viewed the theory of the fourth dimension as possessing deep moral implications.⁶¹ H. G. Wells—as we will see—sought, like Hinton, to create literature that plays a role in critiquing and reforming society, a project which many science fiction writers and theorists have carried into the twenty-first century.⁶² While often addressing different aesthetic and moral concerns, science fiction and Modernist literature are typically viewed as differing from the nineteenth-century realist novel in that they possess more dramatic ‘gaps of indeterminacy’, making them place more strenuous

⁶¹ See Clarke, *EF*, p. 112. I will also address Hinton’s ethics later in this discussion.

⁶² For example, Donna Haraway writes that ‘SF—science fiction, speculative futures, science fantasy, speculative fiction—is an especially apt sign under which to conduct an inquiry into the artifactual as a reproductive technology that might issue in something other than the sacred image of the same, something inappropriate, unfitting, and so, maybe, inappropriated’. See ‘The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others’, in *The Haraway Reader* (New York: Routledge, 2004), pp. 63-124, p. 70. Haraway is, in part, referring to her own famous ‘feminist science fiction’ figure, the cyborg. See also ‘A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s’, pp. 7-45.

demands on the reader's own creativity and judgement.⁶³ The high factor of indeterminacy in many science fiction narratives is addressed by Edgar V. McKnight, Jr, who argues for the importance of Iser's theory in examining science fiction:

The gaps in a science-fictional text can exist not just on the level of plot and character, but in the setting itself. In a contemporary realistic text the reader must fill the gaps between specific plot points, or perhaps in the psychological motivations of the fictional characters, but the fictional world itself often has no such gaps—or, more accurately, it is often left as one vast gap to be filled by the reader's own world, or generic or 'everyday' background to be ignored. In a science-fictional text, on the other hand, the contextual gaps in the setting must be filled by the reader as much as the narrative gaps in characterization and plot.⁶⁴

Hinton's *Scientific Romances* directly assault the everyday background of three-dimensional space and irreversible, successive notions of time. This is a radical form of cognitive estrangement; the reader who can visualise the fourth dimension can literally visualise—according to hyperspace philosophers—all angles and perspectives of the three-dimensional world simultaneously.⁶⁵ These radical 'contextual gaps' also challenge the reader to seek out new perspectives in the continuation of a constant critique of his or her time and place in the world.

At the level of the language that he employs, Hinton's romances foreground their speculative nature, and these gaps of indeterminacy, which exist in the place of certainty. Consider the sheer density of the subjunctive words and phrasing in the following section from the recapitulation in 'The Persian King', where Hinton, in his discussion of the infinite series, attempts to negotiate the complicated concept of causation:

⁶³ Iser, 'IRR', pp. 9-12. Aside from science fiction and Modernist literature, fiction that is encountered in serial form, especially popular during the nineteenth century, also results in a reading process that is different from traditional, complete 'book-form' novels. For a discussion of serial fiction in this context, see 'Indeterminacy', particularly, pp. 14-17.

⁶⁴ E. V. McKnight, Jr, 'Reader-Response Theory and Science Fiction', *The SFRA Review* 247 (July-August 2000) <<http://www2.ac.edu/faculty/emcknight/Reader.htm>> [accessed 6 November 2005], paras. 1-30, para. 26.

⁶⁵ See especially Henderson, *FDNG*, who discusses the influence of this idea on the aesthetics of cubism.

The *assumption by which we are led* to this endless series of transmissions must be clearly apprehended. *We take the law*—that the motion of masses only takes place when some of the motion passes off into the motion of the finer particles of matter, *and we assume that it holds always*. In a lever there is a fixed point, the fulcrum, which supports it, and the power raises the weight; but the weight *may be fixed* and then the fulcrum *can be lifted* by the power. *So we obtained this law* from the consideration of material relations; *and now we supposed* this law to be the fixed point, *and shift our notions* of material relations. Thus we are landed on an endless series. *Before proceeding, however, to inquire* what the significance of this endless series may be, *let us assume* an end to it. *Let us assume* that we come at last to a final transmission. *Let us assume* that the energy is transmitted to the ultimate particles of matter. Or, *if* we have gone beyond matter, *let us suppose* an ultimate medium which by its modifications builds up matter, and which is the last and ultimate substance. *Let us suppose* this ultimate medium absolutely to receive some of the energy. *Let it* absolutely receive and absorb some of the energy, and thereby give rise to the difference of level, to give the ultimate permission which sets all things going. What are the properties of this medium? (p. 118, emphasis added)

Hinton asks the reader to join him in the performance of a thought-experiment here. The ‘let us assume’ is a direction to the reader to take part in the construction of a ‘convenient fiction’ for the purposes of speculation. The continual reminders of the hypothetical nature of Hinton’s proposal of an ‘ultimate medium’, or ‘permission’, here clashes with the absolutist nature of what he is proposing: ‘*Let us assume* that we come at last to a final transmission. [...] *Let us suppose* this ultimate medium [...]. *Let it* absolutely receive [...]’. I have repeated my emphasis here on the subjunctive aspects of this passage, while underscoring the opposing, absolutist vocabulary, in order to emphasise the conflicting impulses in Hinton’s writing. The tension of this passage ends in a question directed to the reader: ‘What are the properties of this medium?’. This ‘ultimate medium’, as I have discussed above, is interchangeable with the king and with the conception of the fourth dimension of space suggested by the model provided in *Unseen Universe*. This model of the fourth dimension can be read—although he never uses the word in ‘The Persian King’—as the ether as well.

Drawing on the work of Clarke, Ian F. A. Bell discusses the role of the ether in early Anglo-American Modernist literature. Playing on the multiplicity of meanings entailed in Eliot's use of the word 'etherized' in 'The Love Song of J. Alfred Prufrock', Bell notes a similar provisoriness in Maxwell's allegories of the ether. Recalling Clarke's claim that 'Maxwell understood that "any given analogical vehicle was dispensable, in that many others could be devised to convey the same meanings"', Bell continues, observing:

It is in this special sense that the 'fiction' of the ether is productive: artisanal means of getting about which refuses any privileging of itself against other, alternative fictions, save by its capacity for efficiency and figurability at any given, inevitably transitional, moment.⁶⁶

The 'artisanal means of getting about' that Bell notes here is the same methodology of the *bricoleur*. Like Maxwell, Hinton and the non-Euclidean geometers, ether theorists and hyperspace philosophers emphasise the experimental, tentative nature of their hypotheses; these are, at times, self-consciously fictional, *constructed* assumptions, which can easily be discarded, replaced or modified whenever necessary.

Above I described Hinton's speculative methodology as being grounded, in part, in analogical reasoning. Analogy works constructively, and in addition to challenging nineteenth-century positivist epistemology, Hinton also attempts to construct a paradigm for a 'new' point of view that will allow the reader to approach an intuition of the fourth dimension of space. In his first romance, 'What is the Fourth Dimension', Hinton concludes that such speculations on the fourth dimension 'supply us [...] with scaffolding, which the mind can make use of in building up its conceptions' (p. 31). In the discourse of the fourth dimension, it is often the dimensional analogy that provides such mental scaffolding. Hinton recognises the importance of analogy within his own writings, observing that 'many philosophical ideas and doctrines are almost unintelligible because

⁶⁶ Bell, 'The Real and the Ethereal: Modernist Energies in Eliot and Pound', in *FEI*, pp. 114-125, p. 123.

there is no physical illustration which will serve to express them' (p. 31). Thus analogy is a tool with which one can render hypotheses intelligible. Bell notes that, in 1927, Arthur Eddington expressed concerns similar to those articulated by both supporters and critics of hyperspace philosophy, regarding what they viewed to be a fundamental flaw in Western epistemology with its roots in mythological thinking:

'We are always relapsing and mixing with the symbols incongruous conceptions taken from the world of consciousness. Untaught by long experience we stretch a hand to grasp the shadow, instead of accepting its shadowy nature. Indeed, unless we confine ourselves altogether to mathematical symbolism it is hard to avoid dressing our symbols in deceitful clothing'⁶⁷

As I have observed, Hinton is particularly concerned with the way in which Western epistemology, long-influenced by the symbols used to think and communicate, may circumscribe human intuition. There is a Romantic drive here, to get behind the 'deceitful clothing' with which culture has dressed nature. However, reliance on analogical reasoning also underscores the tentative quality of speculations concerning the existence of an underlying 'reality' in nature. Bell aptly describes such speculations as 'the sciences of the ineffable': 'these are explorations into those forms of the "real" that may be but conjectured and suggested rather than affirmed, "formulated," within the fictions of decisive measurement and tangible objects' (p. 115). Hinton's phenomenological concerns, and his awareness of the role of the subjective agent in the construction of 'reality', places his hyperspace philosophy within the 'joint negotiations of the ineffable' that, according to Bell, are undertaken by both Modernism and science (p. 122). However, the tensions in Hinton's writing, the subjunctive lying alongside the absolute, and the language of science and Romanticism inhabiting the same text, mark the highly transitional nature of Hinton's discourse, which is perhaps most appropriately described as 'protomodern'.

⁶⁷ A. Eddington, quoted in Bell, p. 120. Bell takes this passage from Eddington's 1927 Gifford Lectures, published as *The Nature of the Physical World* (Cambridge: Cambridge University Press, 1928).

‘Victorian’ hyperspace philosophy

Although Hinton’s hyperspace philosophy anticipates many of the trends in philosophy, science and aesthetics that are often identified with twentieth-century Modernism, Hinton’s writing, while challenging mechanistic, positivist Victorian science, is still very much bound up in the very discourse it is attempting to reconfigure. To illustrate this point, I will begin by jumping forward in time, to examine a twentieth-century retrospective on hyperspace philosophy. The text is a short story, ‘Mimsy Were the Borogoves’, published in 1943 by Lewis Padgett, and it offers an unique insight into the ways that the fourth dimension of hyperspace philosophy, as opposed to the fourth dimension of space-time made popular by Einstein’s Relativity Theory, had been reconfigured—by the middle of the twentieth century—as quaint and outdated. Composed during the Second World War, and set in 1942—the year that also saw the beginning of the Manhattan Project—this tale takes a nostalgic, whimsical look backward at the ‘Victorian’ fourth dimension. Padgett’s tale, which borrows its title from a line in the Lewis Carroll poem, ‘Jabberwocky’, is also a playful reinterpretation of the *Alice* books.⁶⁸ Although ‘Mimsy Were the Borogoves’ is just one of many Carroll-inspired fictions, it provides an instructive reconstruction of the ‘Victorian’ aspects of hyperspace philosophy such as Hinton’s.⁶⁹ According to Henderson, the discourse of the *spatial* fourth dimension had been nearly occluded by the 1940s, replaced by or conflated with popularised

⁶⁸ Lewis Padgett is the pseudonym for the husband and wife writing team, Henry Kuttner and C. L. Moore. Lewis Carroll, of course, is also a pseudonym for the mathematics instructor at Christ Church College, Oxford, Charles L. Dodgson. For the sake of convenience, I will refer to these writers by their pseudonyms.

⁶⁹ More recently, Alan Moore has taken a similar approach to hyperspace philosophy, treating it as specifically ‘Victorian’ discourse. See A. Moore and E. Campbell, *From Hell: A Melodrama in Sixteen Parts*, with P. Mullins, and A. Moore and K. O’Neill, *The League of Extraordinary Gentlemen*, Vol. I.

accounts of Einstein's Relativity Theory.⁷⁰ Padgett's reference to the specifically *spatial* fourth dimension, such as the one described by Hinton, is a subtle detail in a story that pays homage both to Carroll and to the context in which many late nineteenth-century adult readers of the *Alice* books would have approached these stories.

I am not implying that Carroll was himself a hyperspace philosopher. It is highly unlikely that Carroll supported n dimensional and non-Euclidean geometries, as evinced by the conservative stance he takes in his 1873 text, *Euclid and His Modern Rivals*. The title of this text is somewhat misleading: Carroll does not even discuss the recent developments in geometry here. Rather, he attacks contemporary attempts to update—with its original axioms intact—Euclid's *Elements* as a standard geometry textbook. Henderson similarly observes of Carroll, that his 'exploration of mirror images and symmetry in *Through the Looking Glass* of 1872, with their four-dimensional implications, stands as comment on contemporary English fascination with higher dimensions rather than a sign of his own belief in the idea' (*FDNG*, p. 22). Using Padgett's text as a starting point, I will consider Carroll's *Alice* books in light of the 'contemporary English fascination' with the fourth dimension, and the changing meaning of hyperspace philosophy over time. In my discussion of Hinton and Cassirer, I highlighted the emphasis that both writers placed on the hypostatisation of language that occurs in mythical epistemology. The fantastic spaces of Wonderland and Looking-Glass Land, like the fourth dimension of space, are simulacra, and they all owe their origin to

⁷⁰ See L. D. Henderson, 'Four-Dimensional Space or Space-Time?: The Emergence of the Cubism-Relativity Myth in New York in the 1940s', in *The Visual Mind II*, ed. by M. Emmer (Cambridge, MA: MIT Press, 2005), pp. 349-357.

what many Carroll scholars describe as ‘word play’.⁷¹ In 1943, American mathematician R. S. Underwood disgustedly describes such word play as ‘the prostitution of words’.⁷² While in the preceding pages of this study I have examined discourse from the transitional beginnings of hyperspace philosophy, here I will explore texts from the opposing transitional period—the middle of the twentieth century, when hyperspace philosophy was rapidly becoming outdated and discarded into either oblivion or ridicule—to offer a more complete view of the context of hyperspace philosophy. My concern here will be to examine some of the ways in which the fourth dimension of space can be configured as a particularly ‘Victorian’ fantastic space.

In his essay, which is aggressive in tone, Underwood ridicules the few who, in 1943, still believe in the fourth dimension as a ‘transcendental space’ rather than as an independent variable of measurement, usually given as time. Underwood argues that this hyperspatial treatment of the fourth dimension results from a misuse of language. This slippage of terms is the shared mechanism behind the reification of analytical algebraic symbols such as 2^4 , and it is also the process foregrounded in the construction of the fantastic spaces and situations of Carroll’s texts. In both cases, the amenability of these constructed spaces to multiple, and at times contradictory, interpretations contributes to their broad appeal in the nineteenth century, and to a growing sense of anxiety about the arbitrary, constructed nature of ‘reality’. Padgett foregrounds this anxiety in ‘Mimsy Were the Borogoves’, directly linking hyperspace philosophy to the *Alice* books: in this story,

⁷¹ See G. Deleuze, who also addresses Carroll’s writing in relation to the simulacrum in *The Logic of Sense*, trans. by M. Lester with C. Stivale (London: Athlone Press, 2001). I will refer to this text as *LS*. See also A. Lopez, ‘Deleuze with Carroll: Schizophrenia and Simulacrum and the Philosophy of Lewis Carroll’s Nonsense’, in *Angelaki: Journal of the Theoretical Humanities* 9.3 (December 2004): 101-120. Particularly relevant to my reading here is Lopez’s observation of ‘the complex negotiations between the madness of nonsense and the epistemic and ontological doubt grounded in the simulacrum’ (102).

⁷² R. S. Underwood, ‘Mysticism in Science’, in *The Scientific Monthly* 56.2 (February 1943): 168-172, 170.

the language of 'Jabberwocky' is actually a secret code that, once mastered by the child-protagonists, causes them to 'disappear' from the playroom of their parents' home, into an unseen fourth dimension of space.

'Mimsy Were the Borogoves' begins millions of years into the future, as a scientist, Unthahorsten, is trying to build a time machine. He makes two machines, filling both with his adult son's childhood toys, which are to serve as dating devices upon the return of the machines. Unthahorsten sends both machines off into the distant past, and neither return; he soon loses interest in the outcome of his experimentation. The story then shifts to the present day, 1942, where an American child, Scott Paradine, finds one of the machines. It is a lazy spring day, and Scott is playing on the banks of a creek near his parents' house when he stumbles onto what he describes as 'a box of toys'. Scott takes the box and its contents home with him that evening, and he and his two-year-old sister, Emma, begin playing with the toys.

These toys are not like twentieth-century toys: one is a wire framework with beads, resembling an abacus, which is described in the text as being shaped like a 'tesseract'.⁷³ Denoting the four-dimensional equivalent of a cube, the term tesseract was coined by Hinton in his 1888 text, *A New Era of Thought*.⁷⁴ The tesseract abacus of 'Mimsy Were the Borogoves' is actually an educational, training device: by pushing the beads along the wire framework, the Paradine children learn to perceive movement in the direction of the fourth dimension of space. Whenever they move the beads in the 'wrong' direction, the

⁷³ L. Padgett, 'Mimsy were the Borogoves', in *The Best of Henry Kuttner* (Garden City: Doubleday, 1975), pp. 1-30, p. 7.

⁷⁴ See C. H. Hinton, *A New Era of Thought* (London: Swan Sonnenschein, 1888), p. 118. I will refer to this text as *NET*.

framework emits a harmless but painful electric shock; whenever the children move the beads in the 'right' direction, the bead seems to 'disappear' from three-dimensional space.

The Paradine parents soon discover their children playing with these strange toys, and become increasingly alarmed as their behaviour begins to change. Scott and Emma start communicating with each other in a secret language, with the infant Emma appearing to instruct her older brother. The parents call in an eminent child psychologist, Rex Holloway, to examine the children and the toys. Holloway explains the differences between Euclidean and non-Euclidean geometries to the parents, linking the toys to the latter. By playing with the toys, it seems, the children have begun to condition their minds to a four-dimensional, as opposed to three-dimensional, logic. The parents are horrified by this prospect, and confiscate the toys. However the 'damage' has already been committed, and the father, Dennis Paradine, enters his children's playroom one afternoon to find that, like the beads on the abacus, Scott and Emma too have 'disappeared' into the fourth dimension of space.

However, immediately before the disappearance of the children from the Paradine household and the text, the narrative makes another abrupt temporal leap, this time backwards. Leaving twentieth-century America for the moment, the narrator informs us:

In the later half of the nineteenth century an Englishman sat on a grassy bank near a stream. A very small girl lay near him, staring up at the sky. She had discarded a curious toy with which she had been playing, and now was murmuring a wordless little song, to which the man listened with half an ear. (p. 27)

It is implied that the little girl is, of course, Alice Liddell, the man is Lewis Carroll, and the 'wordless little song' is 'Jabberwocky'.⁷⁵ Unthahorsten's second time machine has

⁷⁵ The text never directly refers to the little girl as Alice, and therefore Padgett could be referring to one of Carroll's other numerous child-friends. It seems highly likely that Padgett intended her to be Alice, however, even though there is a biographical inconsistency here. When 'Uncle Charles' asks the little girl about the toys,

fallen into Alice's hands, and although 'Uncle Charles' is far too old to understand the meaning of Alice's song, he transcribes one stanza of it—totally unaltered—into 'Jabberwocky'. Alice recognises that this song is 'about the way out', but—as the narrator ends the nineteenth-century segment of the narrative by informing us—'she was already too old. She never found the way' (pp. 27-28). Scott, like Alice in *Through the Looking-Glass*, is seven years and six months old, and he also struggles with deciphering the meaning of the poem. It is the youngest child in the tale, Emma, who is able to find 'the way out' to the fourth dimension, taking Scott with her.

Padgett implies that it is the first stanza of 'Jabberwocky'—the most semantically nonsensical section of what is considered a masterpiece of nonsense verse—that actually contains the coordinates of passage to the fourth dimension of space. The toys are merely training devices for the children, enabling them to decode the 'wordless' poem. After watching helplessly as the children vanish 'in fragments, like thick smoke in a wind, or like movement in a distorting mirror', Dennis finds a leaf from *Through the Looking-Glass*, bearing the poem 'Jabberwocky', on the floor of the playroom (p. 29). The children have heavily underlined and annotated the first stanza of the poem, making comments in their own 'four-dimensional' language.

The space into which the children 'disappear' is the fourth dimension of nineteenth-century hyperspace philosophy. As I have noted, writers such as Sylvester followed a 'rather circuitous' path of reasoning from the 2^4 of analytical algebra to what Hinton would later call the tesseract of descriptive geometry (Richards, p. 56). Sylvester's

she replies: "Mama bought them for me. She's dead. Papa doesn't care." (p. 27). The narrator continues, explaining, 'She lied. She had found the toys in a box one day, as she played by the Thames' (p. 27). Although the little girl may be lying about the origin of the toys, it is not implied here that she is also lying about her mother being dead. Alice Liddell's mother was alive and well throughout Alice's childhood, a fact of which Carroll was very much aware.

claim that he accepts the reality of ‘transcendental space’, not on his own experience, but rather on a faith informed by the reasoning of other prominent mathematicians, is illustrative of the kind of circular logic that Carroll calls ‘*Perpetum Mobile*’ in a letter to the *St. James Gazette* in 1882. In this letter, Carroll mocks the formalities of parliamentary procedure: “That is to say, Mr. Pyke will first introduce Mr. Pluck, and then Mr. Pluck, being regularly introduced, will be qualified to introduce Mr. Pyke...”⁷⁶ Here we have an infinite series of referentiality, an oscillation that obfuscates the absence of origin in line with Baudrillard’s theory of the hyperreal. In ‘Precession of the Simulacra’, Baudrillard argues that

it is the generation by models of a real without origin or reality: a hyperreal. The territory no longer precedes the map, nor survives it. Henceforth, it is the map that precedes the territory—
PRECESSION OF THE SIMULACRA—it is the map that engenders the territory.⁷⁷

Like the dimensional analogy, the ‘perpetual motion’ of introductions in Carroll’s parody is an example of form preceding, and indeed, creating, ‘reality’. It is highly probable that Carroll was familiar with the dimensional analogy: Taylor makes a case for Carroll’s introduction to Fechner’s writing, through his friend and colleague at Oxford, Müller:

It was in any case probable that Dodgson-Carroll would hear of Fechner-Mises, but the presence of Max Müller at Christ Church made this inevitable. Professor Müller had been at school (1836-41) and University (1841-4) in Leipzig before coming to Oxford by way of Berlin, Paris and London. [Müller] probably corresponded with Fechner and there were books by Fechner in his library. (p. 89)

Although it was published after the original composition of both *Alice* books, Carroll also owned a first edition copy of Abbott’s *Flatland*.⁷⁸

⁷⁶ L. Carroll, *The Diaries of Lewis Carroll*, ed. by R. L. Green (London: Cassell and Company, 1953), p. 405.

⁷⁷ J. Baudrillard, *Simulations*, trans. by P. Foss, et al. (Cambridge, MA: MIT Press, 1983), p. 2.

⁷⁸ See C. Lovett, *Lewis Carroll Among his Books: A Descriptive Catalogue of the Private Library of Charles L. Dodgson* (Jefferson: McFarland, 2005), p. 19. I am thankful to Mark Burstein for directing me to this source.

In his discussion of *Flatland* and the fictional aesthetic of Henry James, Mark McGurl observes an aspect of the two-dimensional flatlander that is particularly relevant to my discussion of Carroll's work:

The inhabitants of *Flatland* exist as 'characters' in two senses of that term, both as represented beings and as conventional symbols, somewhat as though the type beneath our eyes has detached itself from the pulp upon which it is pressed and come to life. It is a bizarre form of life, lived laterally, confined to the two-dimensional plane of the page.⁷⁹

Taken literally, the flatlander of the dimensional analogy is reified ink, symbolic, or linguistic, notation brought to life through hypostatisation. With hypostatisation, we observe a figure of speech—literally in the case of the flatlander—given concrete existence. Much of the comedy in Carroll's writing occurs as a result of such hypostatisation, as Jean-Jacques Lecercle notes: 'one of the constant comic devices of [nonsense] is the literalisation of abstractions, set phrases or metaphors'.⁸⁰ In his study of 'Logic and Humour in Lewis Carroll', Peter Alexander provides an example of hypostatisation to comic effect in *Through the Looking-Glass*: in 'The Lion and the Unicorn' chapter, when looking down an empty road, Alice claims she sees 'nobody' approaching. The White King takes her literally, exclaiming: "I only wish *I* had such

⁷⁹ M. McGurl, *The Novel Art: Elevations of American Fiction after Henry James* (Princeton and Oxford: Princeton University Press, 2001), p. 57.

⁸⁰ J.-J. Lecercle, *Philosophy of Nonsense: The Intuitions of Victorian Nonsense Literature* (London and New York: Routledge, 1994), p. 208. I do not agree, however, with Jacqueline Flescher's claim that 'Carroll's humor is [...] sheer, unadulterated fun'. Flescher undermines her own argument when she continues, claiming that Carroll's humour 'is intimately linked to the world of fantasy'. While I agree with this latter observation, as will become clear throughout my discussion of Carroll's writing, lurking beneath much of the humour of his writing are deep anxieties. The realm of fantasy is often one of pleasure *and* terror. See Flescher, 'The Language of Nonsense in Alice' in *Yale French Studies* 43 (1969): 128-144, 144. I am more inclined to agree with Lopez's observation that 'the *Alice* books could be said to literalize that epistemological and ontological terror that Kant and Descartes could *only* philosophize about' (115, original emphasis).

eyes, [...] to be able to see Nobody! And at that distance, too”⁸¹ The White King’s literal interpretation of Alice’s ‘nobody’ hypostatizes this figure of speech into a proper noun—‘Nobody’—or a ‘real’ person. The crossing over here from an abstract figure of speech to concrete reality parallels the hyperspace philosophers’ addition of a fourth dimension to space by the shifting of terms from analytical algebra to the descriptive language of geometry. Thus, as Hinton explains in ‘What is the Fourth Dimension’, 2^3 in algebra represents a cube in geometry, 2^4 translates into a tesseract. Of this kind of ‘translation’, Underwood complains: ‘intoxicated with his verbiage [the hyperspace philosopher] begins to see Alice-in-Wonderland “four-space” on the horizon; and soon he putters around “*n*-space” as casually as a child with a pile of blocks’ (171). In this tirade, Underwood unwittingly identifies the common genesis of both the fantastic spaces of the *Alice* books—Wonderland and Looking-Glass Land—and the fourth dimension of space: they are alternate worlds that arise out of the subversion of the building blocks of ‘reality’, language and reason. While the analogical methodology of Hinton and other hyperspace philosophers functions by relying on the relational aspects of analytical and descriptive scientific discourses, the movement here from the analytical to the descriptive is opposite to the movement which Bell links with Modernism, and opposite to the ‘progressive’ movement from mythical to discursive epistemologies, which Cassirer and Müller

⁸¹ P. Alexander, ‘Logic and Humour in Lewis Carroll’, in *Proceedings of the Leeds Philosophical and Literary Society*, Literary and Historical Section 6.2 (1948-1952): 551-566, 563. In her discussion of Carroll’s nonsense writing, Gabriele Schwab attempts to make a similar observation. Recalling Alice’s speculations, while she is falling down the rabbit hole, that she may fall through the earth and come out on the other side where people walk on their heads, Schwab writes: ‘This fantasy of a world turned upside down is at one level, of course, nothing but the literalization of an idiomatic image extrapolated from the logic of her own perspective. At another level, however, the same image playfully evokes an ironic concretization of a non-Euclidean space’. While I agree with the first half of Schwab’s statement, it is not clear how the ‘upside down’ eastern hemisphere of the globe can be configured as a non-Euclidean space. See ‘Nonsense and Metacommunication: Reflections on Lewis Carroll’, in *The Play of the Self*, ed. by R. Bogue and M. I. Spariosu (Albany: State University of New York Press, 1994), pp. 157-179, p. 161.

described a century earlier. In his review of Hinton's 1904 text, *The Fourth Dimension*, Bertrand Russell also notes this tendency to cross and conflate the analytical and the descriptive: "Our three-dimensional world is superficial" [Hinton] exclaims, blending the common and the mathematical meaning of this adjective'.⁸² Like many of Carroll's fantastic creatures such as the Mock Turtle, the flatlander—and the fourth dimension he analogically represents—is the product of such 'blending', of the linguistic slippage between analytical and descriptive discourse.

Underwood asserts that the concept of the fourth dimension as a transcendental, material space is the result of 'straining for weird and meaningless conclusions which spring from the accidental implications of unfortunate technical terms' (171). Stated in this way, the interpretive activity of hyperspace philosophers such as Hinton corresponds to the speech and interpretive patterns of the creatures in the *Alice* books. Returning to the example of the White King and 'Nobody', we can also observe an allusion to another example of hypostatisation in mathematics that occurs in cases where the number zero, or the null class, is treated as a 'real' number, instead of a symbol denoting the absence of quantity.⁸³ Peter Heath, in *The Philosopher's Alice*, also observes the tendency of Carroll's characters toward reification and hypostatisation, commenting on Alice's conversation with the Mad Hatter concerning time: 'Alice is being seduced into the fallacy of reification—a common ailment of philosophers', by allowing herself to participate in a discussion about 'Time' as if it were a person who could be 'beaten', 'murdered', or made

⁸² B. Russell, 'Review of *The Fourth Dimension*, by C. H. Hinton', in *Mind* (October 1904): 573-574, 573.

⁸³ See M. Gardner (ed.), *Alice's Adventures in Wonderland and Through the Looking-Glass and What Alice Found There, The Annotated Alice: The Definitive Edition*, by C. L. Dodgson (London and New York: Penguin, 2001), p. 223. I will refer to this text as *AA*.

angry.⁸⁴ Heath attempts to distinguish this sort of literalisation from the genre of nonsense writing, claiming that it should be classified under ‘absurdity’, which he opposes to nonsense: ‘the difference between the two is that whereas [nonsense] neglects or defies the ordinary conventions of logic, linguistic usage, motive, and behavior [absurdity] makes all too much of them’ (p. 4).⁸⁵ However, it seems contradictory to claim that it is possible to ‘make all too much’ of the ‘ordinary conventions’ of language and logic, as such a strict adherence to literal interpretation removes one from the realm of the ordinary and conventional. I am more inclined to agree with Lecercle’s reading of Victorian nonsense—particularly Carroll’s nonsense writing—which claims a ‘dialectics of subversion and support [...] lies at the heart’ of this genre (p. 134). The literal interpretation of a figure of speech, such as metaphor, implies an insistence on the precise use of language as a tool for communication, ‘to say what one means’. However, the Wonderland and Looking-Glass Land creatures’ tendency toward literal interpretation is what causes most of the breakdowns in communication between themselves and Alice, as Schwab notes, writing that ‘due to the nonsense-characters’ fanatic insistence on literality, Alice increasingly loses the rhetorical securities of her own symbolic order’ (p. 163). Heath is thus correct in observing that the trend of the *Alice* books is for adherence to the rules of language and logic ‘long after it has ceased to be sensible to do so, and regardless of the extravagances

⁸⁴ P. Heath, *The Philosopher’s Alice: Alice’s Adventures in Wonderland & Through the Looking-Glass* (New York: St Martin’s Press, 1974), p. 69, note 7. See also Lopez, 119, note 11.

⁸⁵ Heath’s definition of the absurd appears to be in contradiction to Deleuze’s description of it. In his discussion of Carroll and nonsense, Deleuze claims that, ‘for the philosophy of the absurd, nonsense is what is opposed to sense in a simple relation with it, so that the absurd is always defined by a deficiency of sense and a lack (there is not enough of it...)’. See *LS*, p. 71.

which thereby result'; however, his division between the genres of nonsense and absurdity seems to be a false and unnecessary one (p. 4).⁸⁶

Lecerle offers an example of nonsense's dialectical support and subversion of logic and language by citing the case of the Duchess in *Wonderland*. It is the Duchess who tells Alice: "Take care of the sense and the sounds will take care of themselves" (*AA*, p. 92). Here, the Duchess appears to support a common-sense approach to language, where the speaker's intended meaning is determined before the speech act. However, as Lecerle observes, the Duchess's own behaviour also subverts this proverb. She is not consistent: her other proverbs appear to be completely arbitrary in the context of the conversation she is having with Alice, and therefore without any pre-intended meaning. Also, and more importantly, Lecerle notes:

Her 'moral' is a parody of a proverb, 'Take care of the pence and the pounds will take care of themselves.' But in this case at least, it is not possible to say, as she does, that meaning is the origin of saying, for the origin of her idiosyncratic, falsely proverbial meaning is to be found in the saying of the original, conventional proverb. (pp. 123-124)

Therefore, while explicitly supporting the function of language as a logical activity which serves in the communication of meaning, the Duchess's own practice implies the exact opposite: articulation—written or spoken language—can and sometimes does precede intentional meaning.⁸⁷ In such cases, the meaning is unfixed and thus open to multiple interpretations. 'This', Lecerle writes, 'is where radical nonsense emerges. Instead of meaning as the origin of saying, as in the superficial reading of the Duchess's proverb, we

⁸⁶ If a distinction must be made between 'nonsense' and 'the absurd', Flescher provides what seems to be a more applicable model: 'If a character is simply caught up in a series of connected events which he [sic] cannot understand or control, or if he himself performs a series of actions of which one can determine neither the cause, purpose, nor inner relationship, we enter the realm of the Absurd' (129). In contrast, Flescher argues, 'the backbone of nonsense must be a consciously regulated pattern' implying 'a knowledge of the normal sequence of events' (128). It is nonsense's link to the 'normal' paradigm that works to expose the arbitrariness of the norm.

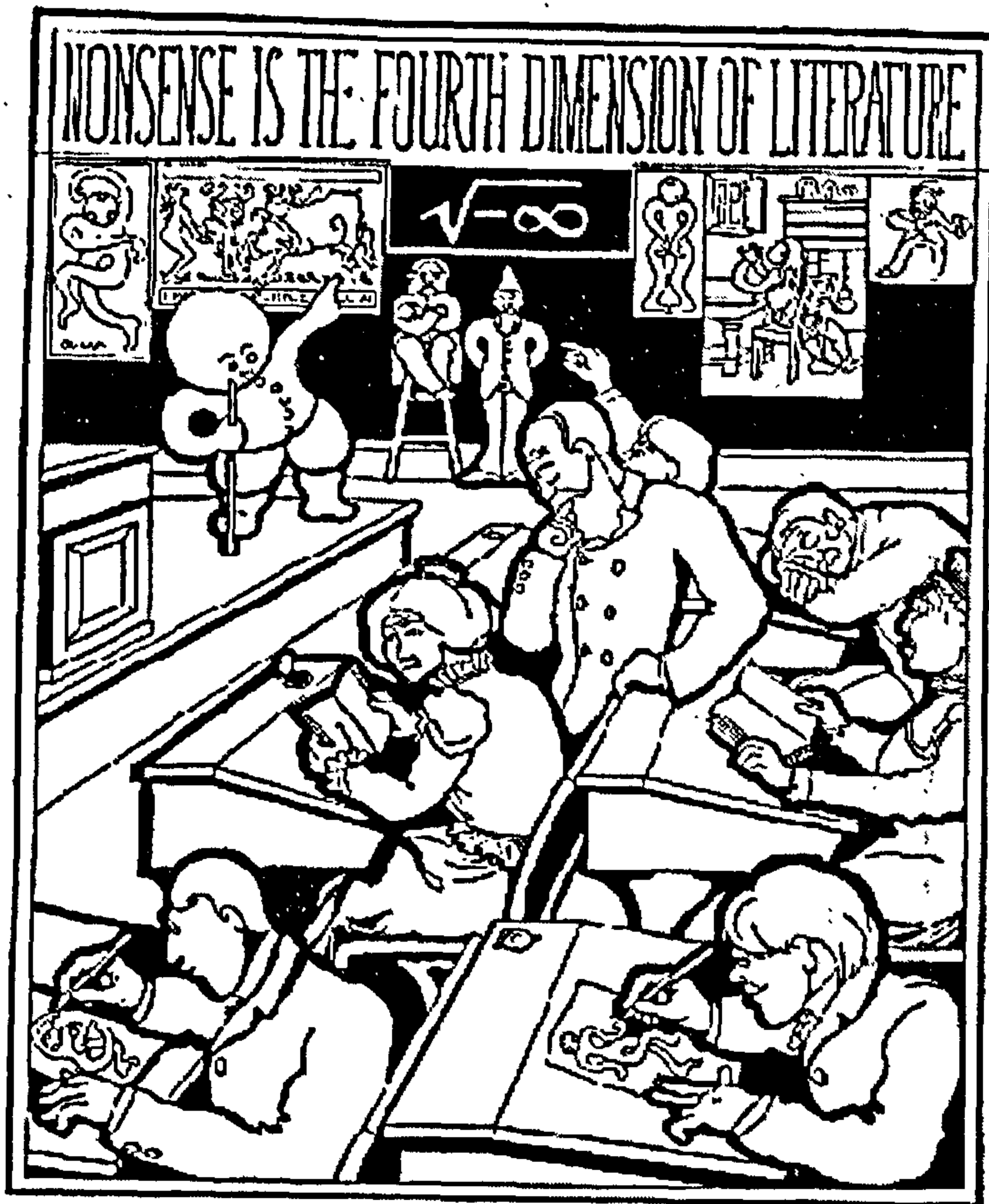
⁸⁷ Schwab makes a similar observation concerning the Duchess's proverb; see p. 164.

now have saying as the source of proliferation of potential meaning' (p. 130). Here is the reversal of the sense/sounds 'moral', where 'sound' precedes 'sense', and as a result, the 'sense' is unfixed and open to multiple interpretations. Like the 'I am that I am' of Yahweh, 'the name saying its own sense can only be *nonsense*' (*LS*, p. 67, original emphasis). Thus, as Deleuze explains, 'nonsense does not have any particular sense, but it is opposed to the absence of sense rather than to the sense that it produces in excess' (p. 71).⁸⁸ Nonsense, like the fourth dimension, functions as a site for the 'proliferation of meaning'.

The spatial conception of the fourth dimension also arises from confusion of intention and articulation, or of sense and sound, and it is similarly open to multiple interpretations. American nonsense writer and journalist Gelett Burgess makes explicit the connection between hyperspace philosophy and nonsense literature in this 1901 graphic:⁸⁹

⁸⁸ Schwab makes a similar observation, writing that 'Carroll's texts show that any dream of totalized mimesis, that is, a dream that attempts to efface the difference between map and territory or signifier and signified, will in fact produce nonsense' (p. 163). Schwab continues, connecting this trend toward hyperrealism in Humpty Dumpty's 'request that a name mimetically represent the shape of a person' (p. 163).

⁸⁹ Frontispiece to *The Burgess Nonsense Book* (New York: Frederick A. Stokes, 1901).



THE NONSENSE SCHOOL

The heading of this cartoon, 'Nonsense is the Fourth Dimension of Literature' makes an important observation concerning the shared mechanism behind the origin of these two offshoots of nineteenth-century literature and geometry. The cartoon depicts a schoolroom scene, where a mathematical symbol has been written on the chalkboard, apparently representing 'the square-root of negative infinity'. The instructor is motioning to this symbol, and the students are reacting in various ways. Two students are, it appears, trying to draw an anthropomorphic representation of this symbol. Two others are reading texts. Another is sleeping, and one appears to be attempting to question the instructor. Here is another 'meaningless' analytical algebraic expression: there is no 'natural', descriptive number that corresponds to this figure; it is an abstract symbol, with no 'sense' preceding it. It is not coincidence that the creator of this cartoon, Burgess, was Hinton's friend and

editor in the United States.⁹⁰ The titular question of Hinton's first romance 'What is the Fourth Dimension[?]', directs him to the algebraic symbol 2^4 , which in terms of descriptive geometry, makes no sense because it is a 'sound'—or a symbol—with no meaning to support it. Being a 'nonsense' symbol, 2^4 is therefore open to a multiplicity of interpretations—graphic, textual, interactive and literary—as we see throughout the discourse of hyperspace philosophy, and particularly within Hinton's *Scientific Romances*.

Here we also see the reason for Hinton's desire to challenge the 'apodictic certainty' of Kant's claim that space is limited to three dimensions. For Hinton and other hyperspace philosophers, the ability to *conceive* of an extra dimension to space is important for two reasons. Firstly, as he writes in *A New Era of Thought*:

When the faculty is acquired—or rather when it is brought into consciousness, for it exists in every one in imperfect form—a new horizon opens. The mind acquires a development of power, and in this use of ampler space as a mode of thought, a path is opened by using that very truth which, when first stated by Kant, seemed to close the mind within such fast limits. (pp. 6-7)

On one level, Hinton's project of conceptualising the fourth dimension of space is about consciousness-expansion. However, on another level, in asserting the ability of the human mind to conceive of higher spatial dimensions, Hinton is—according to a rather self-reflexive process of reasoning—validating the reality of the fourth dimension. This process of reasoning, which plays on Kant's 'apodictic certainty', can be linked to William Whewell's 1844 address to the Cambridge Philosophical Society, in which he describes

⁹⁰*The Gelett Burgess Papers*, BANC MSS C-H 52, housed at the Bancroft Library, University California-Berkeley contains fifteen letters from Hinton to Burgess, dating from 1903-1907. Throughout this correspondence, Hinton refers to Burgess as his editor, even addressing his as 'My dear editor' (22 August 1906). This collection also contains a substantial number of Hinton's notes and drafts for what appears to have been intended as a third volume of *Scientific Romances*. There is a typed manuscript for a completed novella, 'Travels of an Idea', which was certainly written in the later years of Hinton's life, after he had moved to the United States. This manuscript, while an important discovery for Hinton scholarship, is beyond the scope of the present study.

mathematics as a science of 'necessary truth'.⁹¹ A necessary truth is, according to Whewell, self-evident because it is impossible to even conceive of its contradiction (*MV*, pp. 28-29). Thus, for many hyperspace philosophers and other supporters of the fourth dimension, the ability to imagine an extra dimension of space provides a contradiction to the 'necessity' of the argument that limits space to three dimensions.

This extra dimension of space, which is thus created by reification of analytical mathematical language into the descriptive realm, functions as a site of 'proliferation of potential meaning'. The imagined possibilities opened up by this new space altered according to the particular agenda of each hyperspace philosopher. Some spiritualists, perhaps encouraged by performances such as those given by Slade, believed that the fourth dimension was where spirits resided.⁹² While Bragdon sought a four-dimensional theory of architecture, he and other Theosophists also speculated that clairvoyants and X-ray machines had 'four-dimensional vision', and several other writers combined hyperspace philosophy with Christianity.⁹³ Hinton believed that comprehension of the fourth dimension by the masses would result in 'a new era of thought', in which humanity would discard individualistic notions of 'self-love', and create a more altruistic and peaceful society.⁹⁴ Like Carroll's fictional writing, the spatial fourth dimension has taken

⁹¹ The address, 'On the Fundamental Antithesis of Philosophy', was read on 5 February 1844 (*MV*, p. 28, note 22).

⁹² Oscar Wilde humorously refers to the fourth dimension in a similar context in his 1891 story, 'The Canterville Ghost'. See *The Works of Oscar Wilde*, Vol. IV (New York: Lamb Publishing, 1909). Hinton's first romance originally carried the subtitle 'Ghosts Explained'; however, Hinton never addresses the subject of ghosts in this or any of his other writings.

⁹³ See Bragdon, *FDV*. Bragdon actually links the fourth dimension with *Through the Looking-Glass* in this text; see p. 16. Bragdon and Burgess were friends; it was Burgess who first introduced Bragdon to Hinton in 1907. Using his cubes, Hinton 'demonstrated' the fourth dimension to Bragdon in New York City. See the letter dated 24 February 1907, from Bragdon to his mother, May Bragdon, in the *Bragdon Family Papers*, University of Rochester, New York, Box 7, A.B81, 7:7. For examples of hyperspace philosophy with a Christian bias, see *UU*; Bragdon, *Man the Square: A Higher Space Parable* and A. T. Schofield, *Another World; or The Fourth Dimension*. Carroll owned a copy of Schofield's book (Lovett, p. 272).

⁹⁴ I will address the more utopian socialist elements of Hinton's hyperspace philosophy later in this study.

on a variety of meaning, depending on the needs of each particular interpreter. While Carroll often reacted with amusement to freedoms taken in interpreting his fictional writing,⁹⁵ he did not deal as kindly with those who played fast and loose with mathematical principles. While hyperspace philosophy was still popular in the early years of the twentieth century, at least one writer recognised the relationship between hyperspace philosophy and Carroll's *Alice* books: Henderson notes that Samuel M. Barton, in a 1913 issue of *The Popular Science Monthly*, remarks that in *Through the Looking-Glass*, "Mr. Dodgson, himself a mathematician of no mean note, is poking fun at the fourth dimension students" (*FDNG*, p. 22). Whatever Carroll's opinion of hyperspace philosophy, the hypostatisation of abstract language is a major theme of the *Alice* books, and it is this same logic of articulation preceding meaning—'sounds' *before* 'sense'—that lies at the foundation of the fourth dimension of hyperspace philosophy.⁹⁶

Because of its genesis in the reification of analytical terminology, and the multiplicity of possible interpretations of the fourth dimension, hyperspace philosophy shares an affinity with nonsense texts in general, which, Lecerle observes:

In their very being [...] subvert the dominant conception of language as an instrument of expression and communication, i.e., in our terms, of saying as the result of a speech act governed by meaning-as-intention. [...] There are too many linguistic traps for Alice to fall into, and the Duchess's proverb [of sense before sounds] deconstructs itself. (p. 134)

Language, in nonsense texts, often precedes intention, or meaning. However, the dialectics of subversion and support come into play again, as Lecerle notes, writing that the

⁹⁵ See, for example, Carroll's preface to *The Hunting of the Snark. An Agony, in Eight Fits*, illus. by H. Holiday (London: Macmillan, 1876).

⁹⁶ Of course, issues concerning mirror-asymmetry are closely tied to four-dimensional concepts as well. Hinton addresses mirror-asymmetry in his romance, 'A Picture of Our Universe', in *Scientific Romances*, pp. 161-204. See also M. Gardner, *The Ambidextrous Universe: Mirror Asymmetry and Time-Reversed Worlds*, 2nd edn. (New York: Charles Scribner's Sons, 1979), particularly pp. 138-153. Carroll's friend, George MacDonald, also wrote a novel that featured a mirror as a portal to another world. In *Lilith* (1895), MacDonald is explicit about the four-dimensional and Christian implications of his text.

'language speaks' linguistic pole is presented here as being dangerous. There is an element of anxiety in the *Alice* texts, about loss of control over one's self and one's ability to use language as a tool of communication: Alice's inability to recite the 'right' words of many popular educational proverbs and poems is one example, another is to be found at the beginning of *Through the Looking-Glass*, when Alice physically manipulates the White King, forcing him to write other than he intends.⁹⁷ On another level, Alice's manipulation of the White King can be read as analogous to her own manipulation at the hands of Carroll, as a character within his text. Her frustration and fear at her sense of loss of control is similar to the discomfort that the student inspires in the government officials in 'The Persian King': "He made me feel like a puppet", one of them complains (p. 93). This anxiety surrounding the loss of control informs nonsense literature, which, Lecercle observes, enacts 'a constant effort towards mastery, towards blocking the emergence of the radically unmeant, the true or radical nonsense of possession or delirium' (p. 134). In order to understand how these contradictory drives can be contained within the same form of writing, it is instructive to examine the common elements of play and anxiety within the writings of Padgett, Carroll and Hinton.

Game-playing and anxiety

While Barton claims that Carroll was 'a mathematician of no mean note', he was in fact at best a mediocre mathematician, as Evelyn Fox Keller observes: 'His mathematical work was dull, pedantic, and notably lacking in the qualities we have come to identify

⁹⁷ Flescher similarly notes that 'only when words betray [Alice] is the safety of her nonsense world threatened' (135).

with all creative activity, including mathematical creativity'.⁹⁸ Keller suggests that Carroll's lack of creativity in mathematics is due in part to his obsession with puzzles, writing: 'The fact that so much of Carroll's mathematical energy was invested in puzzles is in itself of interest, for the construction and solution of puzzles represent only one dimension of mathematical activity' (135-136). At the heart of this interest in puzzles, Keller argues, lies a deep anxiety about loss of self-control, and radical disorder.⁹⁹ The puzzles such as those included in Carroll's *Pillow Problems Thought Out During Sleepless Nights*, 'promised not only mastery and control, but also defense against the perennial dangers and disorder that threatened from within and without' (p. 147). The title of this text itself implies an avoidance of the kind of lapse in consciousness that might allow for the free-play of the subconscious.¹⁰⁰ While it is not my purpose here to psychoanalyse Carroll, there is a striking resemblance between not only his own anxieties and those which underlie Hinton's hyperspace writings, but also the discomfort and anger that hyperspace philosophy sometimes inspired in others.

Underwood's outrage at hyperspace philosophers such as Hinton has a model in Alice's frequent exasperation at the nonsensical utterances of the Wonderland and Looking-Glass Land creatures. When speaking of the fourth dimension, 'the loophole for sanity, as is often the case', Underwood claims, 'lies in recognising' the misuse of language (170). Whether such misuse is unconscious or intentional, it is often interpreted

⁹⁸ 'Lewis Carroll: A Study of Mathematical Inhibition', in *Journal of the American Psychoanalytic Association* 28.1 (1980): 133-160, 134. See also Heath, p. 3. However, Helena M. Pycior argues against what she calls 'the popular misconception that the author of the *Alices* knew nothing of the advanced mathematics of his period'. Pycior is careful to highlight Carroll's familiarity with recent developments in symbolical algebra. See 'At the Intersection of Mathematics and Humor: Lewis Carroll's *Alices* and Symbolical Algebra', in *Victorian Studies* 23 (Autumn 1984): 151-170, 151-152.

⁹⁹ See also P. Greenacre, who also discusses Carroll's apparent anxieties surrounding self-control and disorder, in *Swift and Carroll: A Psychoanalytic Study of Two Lives* (New York: International Universities Press, 1955).

¹⁰⁰ See also Keller, 137, who addresses this aspect of *Pillow Problems* as well.

as a sign of deviance and—as we have seen in the work of Müller and Cassirer—couched in the terms of childishness and mental illness.¹⁰¹ In ‘Mimsy Were the Borogoves’, psychologist Rex Holloway describes the four-dimensional reasoning of the Paradine children as “madness” (p. 16). Underwood similarly links the ‘insanity’ of hyperspace philosophy with childishness: ‘the really *adult* members of society will not, for the most part, be fooled by this particular brand of mysticism’ (169, emphasis added). Turning to the more ‘mature’, scientifically valid, use of hyper-dimensional terminology in discussions of the Theory of Relativity, Underwood pleads: ‘as adults, let us examine this idea’ (171). There is a sense of anxiety here over a loss of control of the language of ‘scientific’ discourse, a fear of slippage back into the ‘childish’ mysticism of nineteenth-century hyperspace philosophy. However, in the writings of Hinton, Carroll and Padgett we see a celebration of the child. It is the younger of the Paradine children, the two-year-old Emma, who is able to decipher the code of ‘Jabberwocky’; Scott, at the ripe age of seven years and six months, is already too old and conditioned by Euclidean geometry to

¹⁰¹ Interestingly, in a 1932 essay in which he praises Carroll, Edmund Wilson also links the language of nonsense with childishness and the ‘primitive’: ‘It is surely the psychological truth of [the *Alice*] books that lays its hold on us all. Lewis Carroll is in touch with the real mind of childhood and hence with the more primitive elements of the mind of maturity’. See E. Wilson, ‘C. L. Dodgson: the Poet Logician’, in *The Shores of Light: A Literary Chronicle of the Twenties and Thirties* (New York: Farrar, Straus and Young, 1952), pp. 540-550, pp. 544-545. Unlike Padgett, however, Wilson does not view the *Alice* books as characteristically ‘Victorian’. In fact, according to Wilson, while other Carroll texts such as *Sylvie and Bruno* were ‘mawkishly Victorian to the point of unintentional parody’, the longevity of the *Alice* books is guaranteed because they are *not* ‘Victorian’: ‘in the *Alice* books he got quite away from the upholstery and the gloomy institutions of the nineteenth-century world’ (p. 545). Wilson appears to be taking an ‘anti-Victorian’ stance here, as illustrated when he continues his argument, writing that the *Alice* books ‘are likely to survive when a good deal of the more monumental work of that world—the productions of the Carlyles and the Ruskins, the Spencers and the George Eliots—shall have sunk with the middle-class ideals of which they were champions as well as the critics. Charles Dodgson who, [...] was professedly [...] more conventional than any of these, had over them the curious advantage of working at once with the abstract materials of mathematical and logical conceptions and with the irrationalities of dreams. His art has a purity that is almost unique in a period so cluttered and cumbered’ (p. 545). However, as my argument indicates, the *Alice* books are very much linked to their cultural context, as are the ‘abstract materials of mathematics’. As part of his ‘modernising’ of the *Alice* books, Wilson is also careful to distance Carroll from ‘non-Euclidean geometry’—and its nineteenth-century associations—while in the same paragraph implying that there is ‘a touch of Einstein’ in parts of *Through the Looking-Glass* (p. 543).

understand. According to Hinton, there are two factors behind the difficulty that adult humans have in perceiving the fourth dimension of space. In 'A Picture of Our Universe', he claims that 'we are separated from such a view [of the fourth dimension of space] by our bodily conditions, but we are not prevented from taking it with our minds' (*SR 4*, p. 195). In Hinton's view, the adult human body—and its sensory equipment, which as Associationist psychology argues, directly imprints the structures of the brain—is currently confined to a three-dimensional perception of space, because institutionalised education is similarly limited. Thus, even though, as adults, 'we are not prevented from taking it with our minds', the consciousness must be carefully and rigorously trained to be able to conceptualise the fourth dimension. Not surprisingly then, Hinton concludes that 'the work of real discernment [of the fourth dimension] belongs to those who will from childhood be brought up to the conception of higher space' (p. 195). Children, Hinton argues, are particularly adept at perceiving the fourth dimension because, not only are they relatively 'unspoiled' by institutionalised education—which is founded on three-dimensional reasoning—but they are also less habituated to embodiment within the third dimension. This view is dramatised in Padgett's text, and it has roots in Romantic idealisations of childhood as a prelapsarian state of innocence and irrationality that—provided the 'correct' process of education—will evolve into a rational adult being, capable of self-determination.¹⁰²

¹⁰² I use the term 'evolve' here quite intentionally: this emphasis on education, which is influenced by 'first generation' Romantics such as William Godwin and Mary Wollstonecraft, is—later in the nineteenth century—heavily informed by speculations in the field of evolutionary biology, such as the recapitulation theory. See S. Honeyman, 'Mutiny by Mutation: Uses of Neoteny in Science Fiction', in *Children's Literature in Education* 35.4 (December 2004): 347-366. Honeyman is one of a small number of critics to directly address 'Mimsy Were the Borogoves'.

Similarly, Carroll's depiction of childhood in the *Alice* books can be read as being dually informed by a romanticised view of childhood and developmental psychology. In his study of Carroll's fictional writing, William A. Madden observes the high Romanticism of the poems that frame the *Alice* books:

The prefatory poem to *Wonderland*, for example, with its localized setting, feelings originating in a specific event, and a presupposed listener, has affinities with a poem like *Tintern Abbey* and, in its evocation of a dream mood, with the Coleridgean 'mystery' poem, whereby 'the spellbound reader sees visions and hears music which floats in from a magic realm'.¹⁰³

In the safe stasis of this dreamy realm, Alice is frozen in time: 'while the real Alice Liddell has grown up, the poet rescues and fixes *his* "Alice"' (370, original emphasis). The dream-like mood of the framing poems of the *Alice* books is tempered by the aggression, violence and frightening irrationality of the characters in the prose narrative within.¹⁰⁴ The childish 'nature' of the creatures to be found here is 'red in tooth and claw', and—as Kathleen Blake observes—with her preoccupation with Victorian decorum and rules in game-playing, Alice fulfils the role of the 'adult' in most of her encounters with the inhabitants of Wonderland and Looking-Glass Land. 'Already too old', she alternately finds the 'childish' disregard for order in these fantastic spaces either irritating or threatening.¹⁰⁵ The inhabitants of these alternate worlds are all mad, as the Cheshire Cat explains. It even defines madness for Alice's benefit—using itself as a case study—and, as Schwab observes, 'the cat's attempt to logically prove its own insanity [...] turns out to be a classical parody of logic' (p. 172). The 'logical proof' proposed by the Cheshire Cat could read:

¹⁰³ W. A. Madden, 'Framing the *Alices*', in *PMLA* 101 (May 1986): 362-373, 362. Madden quotes G. M. Harper's essay, 'Coleridge's Conversation Poems', in *English Romantic Poets*, ed. by M. H. Abrams (New York: Oxford University Press, 1960), pp. 144-157, p. 145.

¹⁰⁴ Madden makes a similar observation, 371.

¹⁰⁵ K. Blake, *Play, Games and Sport: the Literary Works of Lewis Carroll* (Ithaca: Cornell University Press, 1974), p. 80.

Dogs are not mad.

Dogs wag their tails when they are pleased; they growl when angry.

Cats growl when they are pleased; they wag their tails when angry.

Therefore, cats are mad.

The Cheshire Cat defines madness as an inversion of actions that are generally agreed to be sane. Similarly, in 'Mimsy Were the Borogoves', after describing the four-dimensional logic of the Paradine children as "madness", Holloway defines madness: "I use the word 'madness' purely as a convenient symbol for the variation from the known human norm. The arbitrary standard of sanity" (p. 19). Here is a startling admission: the standards for order and sanity are arbitrarily set. Within the fantastic spaces of Carroll's texts, as well as within the fourth dimension of hyperspace philosophy, the 'truth'—in the words of Hinton's student in 'The Persian King'—is 'read backwards'.

The anxiety surrounding the structure and rules of play in the *Alice* books—whether that play involves a chessboard, hedgehogs-as-croquet-balls or words—is similar to that which Keller observes in Carroll's obsessive puzzle-working and in the Paradine parents' attempts to restrain their children's play with the four-dimensional toys.¹⁰⁶ Loss of control is foregrounded throughout the *Alice* books, and Alice is constantly struggling to maintain order within games and conversations where the rules are constantly changing. In her discussion of 'The Status of the Real' in the *Alice* books, Linda M. Shires notes that, 'more than the inability to communicate, Alice finds truly disturbing the potential confusion about identity which a loss of language ability necessarily entails'.¹⁰⁷ For example, Alice is upset to the point of tears in *Through the Looking-Glass*, when the

¹⁰⁶ Sewell similarly speculates that nonsense-writing is 'an attempt at reorganizing language, not according to the rules of prose or poetry in the first place but according to the rules of play', observing that 'each game of this type is an enclosed whole, with its own rigid laws which cannot be questioned within the game itself' (p. 25).

¹⁰⁷ L. M. Shires, 'Fantasy, Nonsense, Parody, and the Status of the Real: The Example of Carroll', *Victorian Poetry* 26.3 (1988): 267-283, 273.

Tweedle brothers attempt to argue away her very existence by claiming that she is simply a 'thing' in the Red King's dream.¹⁰⁸ Not only is her 'normal' world order—based on a self-centred agent—being disrupted here, it is also being aggressively rewritten and recentred. The seemingly inexplicable liberties taken with language and meaning in both the *Alice* books and hyperspace philosophy—particularly Hinton's cube exercises—are themselves anxious plays for power. Like Keller, Blake identifies the correlation between Carroll's writing and the desire to exert order and control—in this case with particular reference to the external world—which she describes as an ego-centred model of play, 'characterized by a fundamental urge to mastery through incorporation of experience to the ego' (p. 18). This is not 'freeplay', as described by Derrida, Barthes and others, but rather an anxious assimilation of the external world into a defined, internalised system of rules.

We see a famous example of this ego-centred model of play in Carroll's characterisation of Humpty Dumpty. Although not necessarily a mouthpiece for Carroll's personal opinions, Humpty Dumpty in *Through the Looking-Glass*, with his talk of being 'master' over language, provides an oft-cited example of the 'fundamental urge to mastery through incorporation' of language to the ego that parallels Keller's observations on Carroll's puzzle-working. Humpty Dumpty's relationship with language is not a static one, however. Lecercle observes the master/slave dialectic of Humpty Dumpty's 'mastery' over words, drawing on a Nietzschean metaphor of language:

Articulated language, like a bee, constructs a liveable world for the speaker, giving her an impression of control over the world of phenomena through her own control over language. It also, like a spider,

¹⁰⁸ This episode, which refers to the philosophical debate between Bishop Berkeley and Samuel Johnson, is frequently addressed by Carroll scholars. See *AA*, pp. 198-199, note 10.

captures and imprisons her in a network of constraints, thus enslaving her, dictating her vision of the world to her. (p. 154)

Articulated language—a nursery rhyme—brought to life, Humpty Dumpty is in a precarious position in Carroll’s text. Although he may be ‘master’ over the words he ‘employs’, the course of his own life is pre-determined by words that have their origin outside of the text of *Through the Looking-Glass*. Indeed, the originator of the Humpty Dumpty nursery rhyme—‘Mother Goose’—is unknown. Thus, Humpty Dumpty’s ‘liveable world’ is constructed, determined and eventually annihilated by the very language he boasts of controlling.

We are reminded of the precariousness of Humpty Dumpty’s situation at the beginning of his encounter with Alice. Alice realises that the egg-shape she espies sitting on a wall is in fact, Humpty Dumpty: “‘It can’t be any body else!’” she said to herself. “‘I’m as certain of it, as if his name were written all over his face!’” (p. 218). Indeed, Humpty Dumpty’s name, and thus his fate, is inscribed on his ‘person’; his name is descriptive of the unusual shape of his ‘body’. The narrator informs us that his name ‘might have been written a hundred times, easily, on that enormous face’ (p. 218). After her identification of Humpty Dumpty, Alice holds out her hands to catch him, ‘for she was every moment expecting him to fall’ (p. 218). Provoked by this reminder of his own mortality—the actual argument concerns whether or not he is in fact an ‘egg’, or just ‘egg-shaped’, and if being compared to an egg is an insult or a compliment—Humpty Dumpty, addressing a nearby tree, insults Alice. ‘Alice’, the narrator informs us, ‘didn’t know what to say to this: it wasn’t at all like a conversation’ (p. 219). Humpty Dumpty is violating what Alice perceives to be the ‘rules’ of polite conversation, and in an attempt to regain control, she begins chanting—‘softly to herself’—from Humpty Dumpty’s *ur*-text:

'Humpty Dumpty sat on a wall:

Humpty Dumpty had a great fall.

All the King's horses and all the King's men

Couldn't put Humpty Dumpty in his place again.' (p. 219, original emphasis)¹⁰⁹

It is important to observe here not only Alice's aggressive play for control over the 'game' of conversation between herself and Humpty Dumpty, but also her recourse to the safety provided by the structure of the nursery rhyme; her nervous chanting of the nursery rhyme allows her to assert control over herself also. 'His heretofore given identity as "real" brought into question as perhaps nothing more than a rehearsed nursery rhyme',¹¹⁰ Humpty Dumpty returns fire: "Don't stand chattering to yourself like that," Humpty Dumpty said, looking at her for the first time, "but tell me your name and your business" (p. 219). Humpty Dumpty attacks Alice here by demanding that she state her name and her purpose, and thereby constrain herself within the game of language as well.

Quite literally, Humpty Dumpty is 'on the fence' between nominalism and realism: he is a strained metaphor taken too far, and in the end, he breaks down spectacularly. Citing Humpty Dumpty's dismissal of Alice's name as meaningless,¹¹¹ Alexander highlights the contradictory nature of his approach to language: 'Proper names, apparently, have to mean something [...]. On the other hand, our ways with common names are not cavalier enough for Humpty-Dumpty' (558, original emphasis). Humpty Dumpty's own name is descriptive of his egg-shaped body which in turn implies his fate: he will be broken. Manipulated by this adjective turned proper noun, he thus takes an aggressive and

¹⁰⁹ Lopez also notes the 'narratological overdetermination' of Humpty Dumpty, citing a moment later in the conversation when Alice finishes Humpty Dumpty's sentence: "*The King has promised me... The king has promised me—with his very own mouth—to—to...*" "To send all his horses and all his men," Alice interrupted, rather unwisely'. When Humpty Dumpty accuses Alice of "listening at doors", Alice explains, 'very gently, "It's in a book"' (112, original emphasis).

¹¹⁰ Lopez, 112.

¹¹¹ "It's a stupid name enough! [...] My name means the shape I am [...]. With a name like yours, you might be any shape, almost", he tells Alice (p. 219, original emphasis).

shades off into two different directions. At one extreme Humpty Dumpty stands guilty of a secret arbitrariness in his use of words. [...] He deserves the fall that is in store for him. But in the other direction [...] Humpty Dumpty resembles his creator [Carroll].¹¹³

Hancher manages to absolve Humpty Dumpty from the charge of arbitrariness, while avoiding identifying him as a mouthpiece for Carroll. Like Lecercle, Hancher observes in *Through the Looking-Glass* the inversion of what he calls 'stipulative definition', the rule of language that designates the order of 'sense' before 'sounds' (49). Humpty Dumpty defines his terms only after he articulates them to Alice:

'There's glory for you!'

'I don't know what you mean by "glory",' Alice said.

Humpty Dumpty smiled contemptuously. 'Of course you don't—till I tell you. I meant "there's a nice knock-down argument for you!"' (p. 224)

This inversion of 'sense and sounds' can be viewed as logical, Hancher argues, because Humpty Dumpty is—in Carroll's interpretation of him—a Looking-Glass Land creature.¹¹⁴ However, Humpty Dumpty's aggressive manipulation of language is not entirely the result of a simple mirror-image inversion of Hancher's stipulative definition. Predetermined by the text of a nursery rhyme of ambiguous origin, and by the proper noun which denotes his name and his frame, Humpty Dumpty is a *bricoleur* of words, anxiously masquerading as an engineer.

Hinton faces a similar concern with language in the construction of his analogies for the fourth dimension. While, as Bell notes, some anti-positivist, nineteenth-century

¹¹³ M. Hancher, 'Humpty Dumpty and Verbal Meaning', in *Journal of Aesthetics and Art Criticism* 40 (Fall 1981): 49-58, 49. However, Hancher's statement here also needs qualification: Humpty Dumpty's creator is, technically speaking, *not* Carroll. As I have observed, the Humpty Dumpty nursery rhyme is of unknown origin, making him the perfect candidate to address the anxieties I am identifying here.

¹¹⁴ Lopez goes one step further than Hancher here; although he observes that part of Humpty Dumpty's insecurity stems from his shaky ontological status, Lopez also notes that 'the curious way in which Alice consequently finds herself interpellated as both reader *and* signer of' the Humpty Dumpty narrative almost suggests, 'in some strange way, that Lewis Carroll actually *precedes* the famous nursery rhyme' (112, original emphasis). While I agree that Carroll's text complicates the concept of precedence here—appropriately enough, considering that Humpty Dumpty's shape is indicative of the famous 'chicken v. egg' paradox—I would not suggest that Carroll presents a resolution to the question. Lopez's observation is supportive of the argument that sense and sounds are inverted in Looking-Glass Land.

scientists such as Ernst Mach managed to apply analogical reasoning in a way that ‘foreground[ed] its self-consciousness as an instrument, as a means of critical inquiry by virtue of this distance, this confessed removal into another lexical register’, the movement from the language of analytical algebra to descriptive geometry at the heart of Hinton’s hyperspace philosophy must remain precariously in the background (p. 121). Although Hinton often foregrounds his reliance on analogical reasoning throughout his *oeuvre*, beneath this insistence on the similarity between the hyperspace of the fourth dimension and the observable space of three-dimensionality lurks the absence of any direct connection between the fourth and third dimensions. While Hinton’s hyperspace philosophy seeks to address the ways in which pre-existing conceptions of space and language might limit the human mind in constructing and encountering ‘reality’, at its heart lies a similar anxiety concerning the fictional nature of its own origin. The question that Hinton avoids asking constantly haunts the boundaries of his texts: is hyperspace philosophy in control of its own discourse, or is it being manipulated by the very language and concepts with which it expresses itself? The anxiety that underpins this question is identified by Shires, who, drawing on Bakhtin, notes that ‘in its questioning of the real’, the Victorian novel often ‘works not only to expose the limits of the real, but by exposure, to reassert them’ (271). Here again we see the dialectics of subversion and support, which, in Hinton’s case, led to a personal crisis of ontological doubt.

We can observe Hinton, like Alice with the Tweedle brothers, on the verge of becoming entangled in his own thought experiment in ‘What is the Fourth Dimension’:

If we are in three dimensions only, while there are really four dimensions, then we must be relatively to those beings who exist in four dimensions, as lines and planes are in relation to us. That is we must be mere abstractions. In this case we must exist only in the mind of the being that conceives us, and our experiences must be merely the thoughts of his mind. (*SR 1*, pp. 30-31)

His own subjectivity thrown into question, Hinton recovers by giving another turn to the screw of the 'necessary truth' argument of Whewill, commenting that 'it is somewhat curious to notice that we can thus conceive of an existence relative to which that which we enjoy must exist as a mere abstraction' (p. 31). If it is conceivable, then it must be possible, is the underlying reasoning here, and—as Hinton would conclude in his later writings—if it is conceivable that human beings are actually four-dimensional beings, then that is a possibility as well. In fact, Hinton and most hyperspace philosophers pushed the argument by necessary truth one step further. A 'proof' for the existence of four-dimensional space, according to the necessary truth argument, might look like this:

Euclidean geometry, which limits space to three dimensions, is necessarily true.

A necessary truth is self-evident because it is impossible to conceive of its contradiction.

That it is possible to conceive of a fourth dimension of space contradicts the necessary truth of the limitation of space to three dimensions.

That space is limited to three dimensions is *not* a necessary truth.

If one follows the same logic, one can easily argue in favour of the possibility that human beings are four-dimensional beings. However, again, there is no empirical proof here for the necessity of either four-dimensional space, or the four-dimensionality of human beings. Hinton appears to be drawing on the mechanistic methodology of much nineteenth-century science, with its assumption that, in a chain of events, one step *must* follow another. Therefore, although he argues against the rigidity of such reasoning in the recapitulation of 'The Persian King', the concept of the fourth dimension of space—the subject of his life's work—originates in the same 'faulty' process of reasoning.

Thus, while Hinton seeks to carry on his father's work of 'lawbreaking' in subverting the apodictic certainty that space is limited to three dimensions, he also needs the structure of nineteenth-century logic. His concern that mythological thinking—the

tendency toward pathetic fallacy—has crippled Western epistemology, is expressed through his own myth-making activity, by his hypostatisation of 2^4 into the tesseract. In this way, Hinton's project looks both forwards and backwards. It is a project that is truly transitional in nature, seeking to redefine the limits of the very language that shapes it. Using the tools of nineteenth-century scientific discourse, Hinton—as Clarke observes in his treatment of the Second Law of thermodynamics—overcomes rules by yielding to them completely (*EF*, p. 119). Unlike the 'mad' Cheshire Cat, which avoids being beheaded by the Red Queen by reducing itself to a disembodied head, Hinton never achieves a comfortable balance between his desire for subversion of nineteenth-century mechanistic, scientific discourse, and his discomfort with the prospect of the disintegration of the subject that is created and defined by that discourse. In this sense, his reaction against the 'order' and structure of the necessary truth argument is in constant tension with his own reliance on this very structure.

I began my examination of Hinton's complex relationship with nineteenth-century culture by taking a 'retrospective' look at hyperspace philosophy from the viewpoint of Padgett's twentieth-century tale. Padgett carefully reconstructs the context of Carroll's *Alice* books; in addition to the resuscitation of the 'contemporary English fascination' of Carroll's time for non-Euclidean geometry and hyperspace philosophy, there are also several subtle details in 'Mimsy Were the Borogoves' that would likely have appealed to Carroll. Like Carroll's narrator in the *Alice* books, Padgett's narrator, though occasionally taking an amused and condescending tone in relation to the child-protagonists, is ultimately more sympathetic with the Paradine children than the adults. In Padgett's story, the adult Paradines are obtuse and banal middle-class suburbanites, and they are constantly

depicted as reacting with horror at the prospect of their children's above-average intelligence. They are—as their name implies—representatives of the paradigmatic, authoritative Euclidean logic. The scientist Holloway reacts similarly, confiscating the four-dimensional toys and experimenting on them, with inconclusive results: 'No adult could work the abacus, for example', the narrator informs us, 'and Holloway thoughtfully refrained from letting a child play with the thing' (p. 23). In fact, the only sympathetic adult in the tale is 'Uncle Charles', who admires the strange verses he hears Alice chanting, and even acts as a conduit between the nineteenth-century Alice and the twentieth-century Paradine children.

It also seems likely that Carroll would have appreciated the importance of play in 'Mimsy Were the Borogoves'; in fact, aside from the first stanza of 'Jabberwocky', all the other information concerning the fourth dimension is transmitted to the Paradine children through their play with the four-dimensional toys. The setting of Padgett's story is also reminiscent of the *Alice* books, in the parallels between Scott's recreation by the creek and the origin narratives of the Carroll books: both the traditional story of the July boating expedition depicted by Carroll in the *Wonderland* framing poem, and the alternative that is proposed by Padgett.¹¹⁵ In these cases, Carroll and Padgett favour a Romantic model of education, of outdoors, experiential learning over schoolroom tutorials and rote memorisation. Indeed, when Scott discovers the time machine, he is actually truant from school, as the narrator informs us:

Scott Paradine found [the time machine] while he was playing hooky from the Glendale Grammar School. There was a geography test that day, and Scott saw no sense in memorizing place names—which, in the nineteen-forties, was a fairly sensible theory. Besides, it was the sort of warm spring

¹¹⁵ Carroll claimed that the Alice stories originated on 4 July 1862, on a boating trip with the Liddell sisters. See Gardner, *AA*, pp. 7-10, note 1.

day, with a touch of coolness in the breeze, which invited a boy to lie down in a field and stare at the occasional clouds till he fell asleep. Nuts to geography! Scott dozed. (p. 2)

Here we can observe, in the narrator's aside, a confirmation of Scott's opinion that rote-learning is pointless. The free indirect discourse near the end of this passage also highlights the narrator's sympathy with the child-protagonist. Scott's preference for daydreaming and playing outdoors is a modern version of the model provided by William Blake in his poem, 'The School Boy', where the child complains that 'to go to school in a summer morn,/Oh! it drives all joy away'.¹¹⁶ The sort of freeplay being championed by William Blake here, which is reflected in sections of the texts by Padgett and Carroll, is opposed to Kathleen Blake's model of ego-centred play. The freeplay of Scott and the schoolboy is more in line with Kathleen Blake's description of 'educational play', which functions through openness to experiential learning. Educational play is, according to Kathleen Blake, about fostering 'adjustment or accommodation of the ego to experience', as opposed to the manipulation of experience to fit pre-established paradigms within the ego (p. 18). While in Carroll, we can observe—in his framing poems, and in the continual parodying of pedagogical, 'moral' verses within the prose narrative of the *Alice* books—support for unstructured learning, by contrast, his obsession with rules and games throughout the *Alice* books and his other writings implies a deep need for order and control.¹¹⁷

¹¹⁶ W. Blake, 'The Schoolboy', from *Songs of Innocence*, in *Songs of Innocence and Experience*, ed. by R. Willmott (Oxford: Oxford University Press, 1990), pp.12-13, p. 12: 5.

¹¹⁷ Edmund Wilson also notes how in the *Alice* books, 'the bottoms dismayingly drop out of the didactic little poems by Dr. Watts and Jane Taylor which Victorian children were made to learn, and their simple and trite images are replaced by grotesque and silly ones, which have rushed in like goblins to take possession' (p. 541). Here Wilson identifies the tension that I have been attempting to highlight between Carroll's resistance to contemporary epistemological paradigms and his anxiety at the possibility of the dissolution of those paradigms. The rushing in of 'goblins to take possession' of the ordered subject both allows the giddy sense of subversion in the nonsense of the *Alice* books, as well as the ontological terror that inspires the text to cling to pre-existing 'sense' for support.

There is a similar tension in Hinton's cube exercise manuals. Within the First Series of his *Scientific Romances*—in his fifth romance, 'Casting out the Self'—as well as in three later texts, Hinton provides the reader with manuals of highly-involved instructions for the manipulation of numerous wooden cubes, in the pursuit of visualising four-dimensional objects.¹¹⁸ Like Carroll, Hinton had grown up within the Victorian public school culture of games and sport, and like Carroll, game-playing was also important in Hinton's adult life.¹¹⁹ In addition to his cube exercises, in a romance from his Second Series of *Scientific Romances*, 'On the Education of the Imagination', Hinton describes several games of his own design, including a variation on chess, which he calls 'cubical chess'.¹²⁰ Hinton also invented the first baseball pitching machine while he was a mathematics professor at Princeton, and was apparently an ardent supporter of the University baseball team.¹²¹ Hinton claims that his cube exercises and games are designed to foster educational play; like the toys in Padgett's story, they are intended to instruct the player in four-dimensional logic. However, Hinton's games are not about adjusting the player's mind to any 'real-world' experience, which is traditionally defined as three-dimensional. Hinton's games are, rather, designed to assist the player in constructing an alternate paradigm for encountering external reality. Thus, this is an extreme form of ego-

¹¹⁸ See also *NET*, and *FD*. The second, 1906, edition of *FD* (1904) includes a pamphlet, 'A Language of Space', which Hinton had originally published separately in 1906. This pamphlet also contains instructions, based on his cube exercises, for the manipulation of monosyllabic utterances in the place of cubes.

¹¹⁹ As with Carroll, Hinton attended Rugby public school before enrolling at Oxford University in 1871. See Ballard, p. 14.

¹²⁰ This text, though originally published in the Second Series (1896), was written several years earlier, when Hinton was in England. A note at the end of the essay implies that it was written before the First Series (ca 1884-1886).

¹²¹ See C. H. Hinton, 'On the Education of the Imagination', in *Scientific Romances*, pp. 3-22. I will refer to this text as *SR 6*. There are multiple archival accounts of Hinton's enthusiasm for baseball, all of which are also included in Ballard. Hinton also published the mechanical specifications for his pitching machine in 1897. See 'The Mechanical Pitcher', in *Harper's Weekly Magazine* (20 March 1897): 301-302.

centred play, where the subject assimilates the external world to a learned, four-dimensional 'structure' of perception.

In his discussion of Hinton's cube exercise texts, Clarke observes that 'there is an arduous playfulness here: one might also speculate that in these documents an obsessive-compulsive manipulation of childhood objects defends against a paranoid cognition of being psychically manipulated from another source of control' (*EF*, p. 185). Like Alice, who nervously chants the nursery rhyme when confronted by Humpty Dumpty and whose only recourse to the implication that she may simply be a 'thing' in the mind of the dreaming Red King is to keep playing the game by moving forward one square on the 'chessboard' that structures her movement through Looking-Glass Land, Hinton's anxious and repetitive play with the cubes is an attempt to maintain a sense of personal agency. The manipulation of the cubes in Hinton's manuals becomes understandable in light of the manipulation of the rules of language and logic that I have observed at the heart of the construction of both the spatial fourth dimension and Carroll's nonsense writing.¹²² In the final pages of this section of my study, I will turn to examine Hinton's first published cube exercise manual, in his fifth romance, 'Casting out the Self'.

'Casting out the Self' (1886)

The final text in Hinton's First Series of *Scientific Romances* offers up another example of the oppositional forces within his hyperspace philosophy. The stated purpose of the exercise explained in 'Casting out the Self' is to strip the thinking subject of its subjectivity, to break down the boundary between self and other. To accomplish such a

¹²² According to Burgess, 'Hinton took issue point blank with the mathematicians in his belief that a correct conception of space could be attained only by physical manipulation rather than by means of symbols', ('The Late Charles Howard Hinton', n. p.). Here again we see the paradoxical nature of Hinton's hyperspace philosophy.

task would involve total self-annihilation, as Levine observes.¹²³ What Hinton actually seems to be striving toward here is an expulsion of the *three-dimensional* self, what he perceives to be the false limitations that have been imposed upon the intuition over thousands of years. What is left over would be, presumably, the ‘truer’ self, which is able to encounter the fourth dimension of space. However, as I have observed, at the heart of Hinton’s project is the awareness of the ‘illegitimate’ origin of the concept of the fourth dimension of space. In ‘Casting out the Self’ Hinton proposes a radical deconstruction of the self, while at the same time anxiously guarding against such dissolution through the maintenance of agency by manipulating physical objects.¹²⁴ What Hinton views to be an extractive, deconstructive activity in this text actually becomes a creative process. In the reading of ‘Casting out the Self’ that follows, I will expand my discussion through the analogy of game-playing. By further drawing on the reader response theory of Iser, as well as Barthes’s discussion of the Text, I examine the activity of manipulating the cubes in Hinton’s text as analogous to the reading process that is engendered by the unique structure of the *Scientific Romances*, and particularly suited to conceptualising the spatial fourth dimension.

Previously, I cited Bell’s observation that analogy functions in a way that is ‘speculatively exploratory’ (p. 121). Bell continues, relating this exploratory process to Eliot’s ‘Prufrock’: ‘to be creative, then, is to explore, to question; and it is not accidental

¹²³ Levine describes this epistemological approach as the ‘suicidal narrative of knowledge’ (DK, p. 5).

¹²⁴ Hiram Barton, responding to the ‘Mathematical Games’ column in an 1966 issue of the *Scientific American*, writes that ‘a shudder ran down my spine when I read your reference to Hinton’s cubes. I nearly got hooked on them myself in the nineteen-twenties. Please believe me when I say that they are completely mind-destroying. [...] In 1929 [...] I realized the dangers of setting up an autonomous process in one’s own brain. [...] I wouldn’t recommend anyone to play around with the cubes at all’. See *Mathematical Carnival* (Harmondsworth: Penguin, 1982), pp. 52-53. Barton also notes that ‘the only person I ever met who had worked with them seriously was Francis Sedlak, a Czech neo-Hegelian philosopher [...] who lived in an Oneida-like community near Stroud, in Gloucestershire’ (p. 52). Sedlak, as I noted earlier, reviewed Hinton’s second edition of *The Fourth Dimension* for *The Theosophical Review* in 1906.

that the poem miming Prufrock's journey is constructed largely through the interrogative mode' (p. 121). While I have observed similar subjunctive and interrogative modes in Hinton's writing, the drive in Hinton's hyperspace philosophy seems to be simultaneously to question and guard against the unexpected, or accidental. Questioning, Bell notes, 'is always a liminal activity where the self is poised for change at the edge or boundary of things' (p. 121). By stripping away the three-dimensional self, Hinton seeks to leave a four-dimensional subject that is pure perception, an entity that necessarily exists 'at the boundary of things'. Like Bell, Barthes observes the transgressive capabilities of analogy, writing that 'its constitutive movement is that of cutting across'.¹²⁵ The relational nature of analogous reasoning is also the essential feature that identifies the *Scientific Romances*: holding it together as a larger text is the concept of the spatial fourth dimension itself. Hyperspace philosophy also functions as a site where two very different worldviews—'science' and 'romance'—are linked. As a Text—in Barthes's sense of the word—Hinton's discourse of the fourth dimension disrupts the separation between objectivity and subjectivity, placing these two perceptual modes in tension with each other.¹²⁶ Hinton's conception of the fourth dimension of space is intrinsically idealist; however, he often argues in support of it along materialist lines. Nowhere is this contradiction more observable than in 'Casting out the Self', where he attempts to find an empirical means of

¹²⁵ R. Barthes, 'From Work to Text', in *Modern Literary Theory: A Reader*, 3rd edn., ed. by P. Rice and P. Waugh (London: Arnold Press, 1996), pp. 191-197, p. 193.

¹²⁶ Barthes defines the 'Text' in opposition to the 'work', writing that 'the difference is this: the work is a fragment of substance, occupying a part of the space of books (in a library for example), the Text is a methodological field' (p.193). I am aligning objectivity with scientific discourse, particularly with the late-nineteenth-century scientific discourse that informs the context of Hinton's writing. Conversely, I have situated subjectivity with 'romance'. I am informed here by a Karen Armstrong's discussion of *mythos* and *logos* as opposing worldviews. See *The Battle for God: Fundamentalism in Judaism, Christianity and Islam* (London: HarperCollins, 2001). I also have in mind Cassirer's distinction between what he calls 'discursive thought' and the myth-making activity of the mind, with its tendency toward pathetic fallacy.

approaching the fourth dimension.¹²⁷ The way such a conflicted project can survive its own construction is through its functioning as a Text with a significant amount of ‘play’.

Here I use ‘play’ in the sense of Barthes, who writes:

‘Playing’ must be understood here in all its polysemy—the text itself *plays* (like a door, like a machine with ‘play’) and the reader plays twice over, playing the Text as one plays a game. [...] The Text [...] asks of the reader a practical collaboration. (p. 196, original emphasis)

Previously, I have examined some ways in which the overall structure of the *Scientific Romances* requires the reader to work with Hinton in the construction of the fourth dimension. Here I will focus more closely on the ways in which Hinton explicitly calls upon the reader for ‘practical collaboration’, in playing his text as if it were a game, and the—perhaps, for Hinton, unintended—‘play’ that such activity necessarily entails.

In ‘Casting out the Self’, by instructing the reader through a number of exercises with a set of wooden blocks, Hinton strives to change the reader’s intuition of space from an unconscious activity to a conscious one. To achieve this, it is necessary first to become self-conscious, and then to ‘cast out’ all elements of the self. At work here is what Levine seeks to identify through the metaphor of ‘dying to know’: ‘a view [that is] built into the idea that the senses that are the gateway to all knowledge must be disciplined and checked in order to provide that knowledge’ (p. 2). Hinton calls on the reader to undergo a process, the function of which is to deny the subject’s normal, three-dimensional sensory perceptions in order to uncover what he claims to be a more direct, unmediated encounter with ‘true’ knowledge: knowledge of the fourth dimension of space. Hinton’s desire to ‘cast out the self’ seems to have grown out of a personal crisis of knowledge. As he

¹²⁷ Hinton and his published, William Sonnenschein apparently referred to his cube exercises as ‘approaches’. See Letter from Sonnenschein to Hinton, 7 July 1897, in *Records of George Allen & Unwin, Ltd.*, MSS 382, Book 28, p. 307, Archive and Manuscript Division, Special Collections, University of Reading.

explains: 'The beginning of it was this. I gradually came to find that I had no knowledge worth calling by that name, and that I had never thoroughly understood anything which I had heard' (*SR* 5, p. 205). Hinton's description of his inability to understand '*anything which I had heard*' is indicative of the distrust of sensory input that Levine identifies as constitutive of the paradoxical narrative that 'the self gains its power by annihilating itself', which he claims is 'apparently underlying the whole project of Western epistemology' (pp. 2, 5).

Hinton's crisis of knowledge seems to be linked to a fear of self-dissolution, and to a growing sense of mortality. The timing of this crisis is telling; Hinton describes it as occurring shortly after the conclusion of his formal education at Oxford. Originally published in 1886, the year that he received his MA, Hinton was already living away from Oxford, working at Uppingham College as a mathematics instructor (Ballard, p. 29). It was also the year that he confessed to, and was tried and sentenced for, bigamy. However, '*Casting out the Self*' was composed before these events, and so, while the strain leading up to these various upheavals was no doubt building, the period of crisis he refers to is more likely to have occurred in the previous decade, when another series of major life events occurred: in 1875, Hinton's father died; in 1876, Hinton completed his undergraduate work at Oxford; within the year he had taken a post at Cheltenham Ladies' College as a mathematics instructor, and in 1880 he married his first and legal wife, Mary Ellen Boole. Of the timing of this existential crisis, Hinton writes:

I will not go into the matter further; simply this was what I found [that he knew nothing], and at a time when I had finished the years set apart from acquiring knowledge, and was far removed from contact with learned men. I could not take up my education again, but although I regretted my lost opportunities I determined to know something. [...] And I would earnestly urge all students to make haste in acquiring real knowledge while they are in the way with those that can impart it; and not rush

on too quickly, thinking that they can get knowledge afterwards. For out in the world knowledge is hard to find. (SR 5, p. 206)

The sentiments expressed here are not atypical. Lacking, for the first time in his life, the structure provided by an institution of formal education, Hinton appears to be struggling against a sense of self-dissolution, figured here as the sudden dissipation of the illusion of knowledge. By undermining both his previously acquired knowledge, and his ability to obtain knowledge in the future, the Cartesian model of the thinking subject is thrown into radical doubt. Hinton is also anxious about facing the challenge of unstructured learning here: ‘out in the world knowledge is hard to find’.

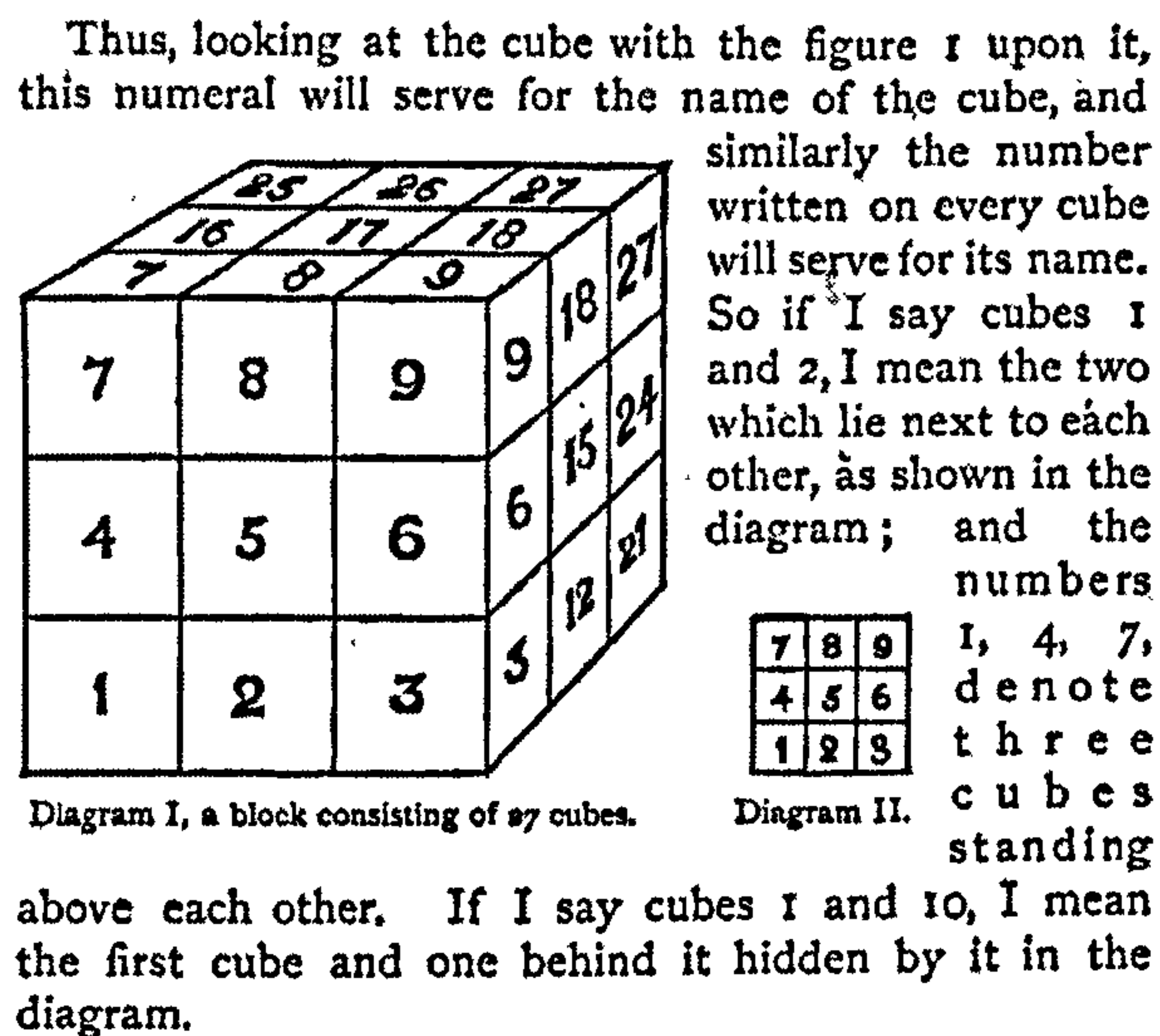
Like Alice, who, as Shires observes, ‘manages to keep her composure most of the time’ by ‘depend[ing] on what she has learned from authorities (adults, schoolbooks, and her own internalized adult logic)’, Hinton comforts himself by creating another, highly structured, process of learning to undertake (272). The bizarre form of self-affirmation through self-abnegation that Hinton constructs results in his cube exercises: he begins by memorising the relative positions of 216 wooden cubes that he arranges in such a way as to compose one larger cube. For practical reasons, Hinton reduces the number of cubes needed to perform this exercise to 27, arranged in a 3 x 3 unit, in ‘Casting out the Self’. ‘Now’, Hinton writes,

this is the bit of knowledge on which I propose to demonstrate the process of casting out the self. It is not a high form of knowledge, but it is a bit of knowledge with as little ignorance in it as we can have; and just as it is permitted a worm or reptile to live and breathe, so on this rudimentary form of knowledge may we be able to demonstrate the functions of the mind. (p. 208)

Hinton could just as easily write that ‘this is the bit of knowledge’ on which he is able to demonstrate the existence of his subjectivity. By enabling himself to ‘demonstrate the functions’ of the mind, Hinton is confirming the existence and the functioning of *his* mind. He represents knowledge—‘rudimentary’ though it may be—as being indicative of a

functioning mind, which he compares to the basic activities that are necessary to life in evolutionarily 'lower' species. This 'bit of knowledge', according to Hinton, is the knowledge of space relations. The manipulation of the wooden cubes allows the subject to demonstrate its knowledge of the relations of the blocks to each other, while simultaneously attempting to avoid any reference to the subject's position to the block of cubes as an external reference point, as an agent.

For example, Hinton explains, 'if I say cubes 1 and 2, I mean the two which lie next to each other', as he illustrates in the following diagram:¹²⁸



The relation between these two cubes is the common side between them. Hinton memorises the relations between all 27 of the cubes, and then begins the process of 'casting out the self'. 'First of all', he explains, 'when I had learnt the cubes, I found that I invariably associated some with the idea of being above others. When two names were said, I had the idea of a direction of up and down' (pp. 208-209). The idea of up and down are what Hinton calls 'self elements', or, impressions made on the mind by the body: 'I only conceive of an up and down in virtue of being on the earth's surface, and because of

¹²⁸ SR 5, p. 208.

the frequent experience of weight' (p. 209). Hinton is describing the experience of embodiment, which he describes as a 'condition affecting myself' (p. 209). The language here assumes a Cartesian dualism of mind and body, where Hinton is trying to access a psychical, four-dimensional self that has been incorrectly fused with a three-dimensional body. While underlying Hinton's view is the assumption of a transcendent, absolute reality, there is also space here for the radical enumeration of perspectives: the medium of the three-dimensional body causes the human mind to misapprehend one level of dimensionality to be an exclusively singular reality. There is an awareness here that human perception of reality is not absolute; perception is affected by physical factors ranging from simple differences, such as variations in eye-placement across species to the intricacies of neurological structure.¹²⁹ With this in mind, N. Katherine Hayles explains:

Our so-called observables are permeated at every level by assumptions located specifically in how humans process information from their environments [...] it becomes clear that observables really mean observations made by humans [...]. In short, we are always already within the theater of representation.¹³⁰

Hinton appears to regard his cube exercises as a means of stepping outside of this 'theater of representation', a problematic project, as this theatre—physical embodiment—is also the framework that enables the human subject to exist. Hinton is not consciously seeking self-annihilation in the form of physical death; he does not seem to make this

¹²⁹ I am only addressing physiological factors at present. In the second section of this study I will examine the ways in which Hinton explores the impact of social structures on human perception.

¹³⁰ N. K. Hayles, 'Constrained Constructivism: Locating Scientific Inquiry in the Theater of Representation', in *Realism and Representation: Essays on the Problem of Realism in Relation to Science, Literature, and Culture*, ed. by G. Levine (Madison: Wisconsin University Press, 1993), pp. 27-43, p. 28.

connection.¹³¹ In his view it is only by stepping out of the theatre of three-dimensional embodiment that one can access the fourth dimension through the imagination. William J. Scheick notes that Cubists—or at least their followers—similarly sought to encounter the fourth dimension by privileging thought over sensory perception, writing that contemporary art critic Maurice Raynal ‘concluded that Cubist artists conveyed this [fourth] dimension by “painting objects as they *thought* them” rather than how their senses perceived them’ (p. 22, original emphasis).

In order to fully escape the ‘theater of representation’ constructed within the mind under the limitations of the body and access the realm of pure abstraction, Hinton decides that one must eliminate the effects of gravity and of ‘handedness’, perceptions of up and down, and left and right.¹³² The only way to remove these self-elements from one’s knowledge of the block of cubes, Hinton claims, is to turn the block upside down, and then to invert it, relearning the blocks in each new position:

It was, I found, quite necessary to learn them all over again, for, if not, I found that I simply went over them mentally the way first learnt, and then about any particular one made the alteration required, by a rule. Unless they were learnt all over again the new knowledge of them was a mere external and simulated affair, and the up and down would be cast out in name, but not in reality. It would be a curious kind of knowing, indeed, if one had to reflect what one knew and then, to get the facts, say the opposite. (p. 209)

¹³¹ However, in a later romance, ‘An Unfinished Communication’ (1895), Hinton does make his protagonist’s access to ‘higher consciousness’ contingent upon his physical, bodily death. I will discuss this romance in the final section of this study. It is a grim coincidence that Hinton’s own sudden death occurred immediately following his delivery of a speech to the Washington Philosophical Society titled ‘Psychic Entrance into the Fourth Dimension or Heaven or any Other Place’. See M. B. Hinton, Letter to William James, 2 December 1907, in W. James, 1842-1910, *Letters from Various Correspondents*, bMS Am 1092, Houghton Library, Harvard University, and Anon., ‘Scientist Drops Dead’, in *Washington Post* (1 May 1907): n. p.

¹³² ‘Handedness’ was, for Kant, and for many present-day philosophers, a contentious issue concerning the opposition of absolutist and relationist concepts of space. See R. Le Poidevin, *Travels in Four Dimensions: The Enigmas of Space and Time* (Oxford: Oxford University Press, 2003), pp. 64-66.

Here Hinton appears to be arguing in favour of experiential learning, through direct contact with an object, rather than through a memorised system of rules. However, his system for manipulating the cubes is carefully circumscribed within its own set of rules.

Following the ‘correct’ procedure for his cube ‘games’ requires, in Hinton’s words, ‘considerable mental effort’, and time. However, it is—according to him—the only way to approach a way of knowing and seeing that is not limited by three-dimensionality (p. 210). The reward, Hinton implies, is a radically new way of encountering reality. This new spatial awareness is a deconstruction of the ‘I-thou’ opposition: there is no up or down, left or right in the cube exercises, and thus, it is implied, there is no physical subject. In order to achieve this dissolution of the self, Hinton reminds the reader, the exercises must be physically done: the reader must actually handle the blocks, not just conceive of them mentally. Thus, ‘Casting out the Self’ is a text that resists mere consumption. As a Text, this romance requires that the reader ‘*set it going*’ (Barthes, p. 197, original emphasis). Once this textual game-playing has begun, Iser explains:

[The] author and reader are able to share the game of the imagination, and, indeed, the game will not work if the text sets out to be anything more than a set of governing rules. The reader’s enjoyment begins when he himself [sic] becomes productive, i.e., when the text allows him to bring his own faculties into play. (AR, p. 108)

While Hinton certainly invites his readers to share in this ‘game of the imagination’ that is visualising the fourth dimension, this creative impulse sits somewhat uneasily with the stated purpose of ‘Casting out the Self’, which is in fact to remove most of the reader’s faculties from play. The very ineffability of the spatial fourth dimension makes Hinton’s project a highly creative and unstable one: no matter how carefully Hinton lays out ‘rules’ and guidelines for the mental construction of the fourth dimension, this act of construction

is necessarily the responsibility of the reader. Thus, there are as many fourth dimensions as there are readers of, or participants in, Hinton's texts.

The maintenance of this unstable unity is built into the structure of the *Scientific Romances*: the individual romances in this collection play off of the others, mimicking Hinton's hypothesis that the fourth dimension can only be perceived from the three-dimensional perspective as a series of 'slices'. Moving from one 'slice'—the perspective engendered by the 'instructions' contained within each individual romance—to another, the reader experiences what Iser describes as the 'concrete fluidity' of the text, where the reader is constantly feeding back reactions' as they encounter 'new information' (*AR*, p. 68). In a manner echoing Hinton's 'Arabic method of description', each succeeding viewpoint of the fourth dimension offered to the reader within the *Scientific Romances* builds upon the previous ones, at the same time illustrating that, in Iser's words, 'the whole text can never be perceived at any one time' (p. 108). Although Hinton often speaks of the fourth dimension as a transcendental metaspace, the dynamism of his *Scientific Romances*—the insistence on obtaining knowledge through relations and movement of consciousness—resists an absolutist, monological model of reality. The game can only be played—the Text can only instruct the reader on conceptualising the fourth dimension of space—by offering itself 'to a diffraction of meanings' (Barthes, p. 195). Thus we observe the paradoxical nature of Hinton's hyperspace, which he insists is a transcendent, yet material, realm that the unified, embodied subject can only encounter through diffracted, multiple 'approaches'. In the second section of this study, I will turn to Hinton's Second Series, where he expands his experimentation on the self by examining, through fictional

narratives, the ways in which physical embodiment, socio-cultural status and epistemology are intertwined.

Section Two: *Scientific Romances*, the Second Series (I)

In this section of my study, I will turn to examine two narratives of radical and experimental deconstructions of the self. The first of these, a novella by Hinton titled 'Stella' (1895), sets the tone for the other, H. G. Wells's *The Invisible Man* (1897). I will approach these texts chronologically, examining 'Stella' first. A significant technological discovery, of X-ray imaging in December of 1895 is also important to my discussion here, and I will address it in a chronological manner as well. As the first reports of X-ray photography were not published until after the composition and publication of Hinton's text, I will discuss the relevance of this discovery after my initial examination of 'Stella'.

My examination of 'Stella' will continue to develop the ideas I introduced in the first section of this study, extending my discussion of Hinton's complex treatment of the self, and his experiments that aimed at 'casting out' the subject. A continuing theme of this discussion is the paradoxical nature of Hinton's project, as exemplified by the title of his *Scientific Romances*. Here I will add another dimension to my discussion, by examining the ways in which Hinton deals with the scientific imagination, and the opposition of science with fantasy. It is my contention that a close reading of Hinton's forgotten text, 'Stella', will expose prescient concerns about the ways in which the socially- and scientifically-constructed subject in turn imagines and thus shapes the world it inhabits. Read within its historical context, 'Stella' grapples with proto-feminist and proto-socialist discourses in a way that often appears reactive against Victorian middle-class values.

'Stella': the invisible woman

'All great men like Dante and Rafaele [sic], who have had a great and glorious idea, have tried to represent in some woman's form, like the Madonna or Beatrice. And Michael has done so too. They only made their image in a picture or a poem. But Michael has made me like I am, being real; that is the difference between science and imagination'. (SR 8, p. 35)

I have begun my discussion of 'Stella' with a quotation because I will be continually referring to the idea, as the eponymous character expresses here, of a 'difference between science and imagination'. Ludmilla Jordanova, Gillian Beer and others have highlighted the ways in which these two epistemologies are linked, and I will build upon their work to examine the ways in which Hinton explores their effect on the female subject in 'Stella'.¹³³ My discussion will draw particularly upon feminist theory, and is influenced by what Elizabeth Grosz describes as the 'sexual difference' perspective, in which 'the body is crucial to understanding woman's psychical and social existence, but the body is no longer understood as an ahistorical, biologically given, acultural object', rather, it is 'constitutive of systems of meaning, signification, and representation'.¹³⁴ I have chosen this approach to examining 'Stella' because within this text Hinton chooses to address a specifically female subject. As in 'Casting out the Self', within 'Stella', Hinton experiments with stripping away layers of subjectivity; unlike this earlier romance, however, in 'Stella' he addresses the ways in which culture may affect the embodied self. Just as in Grosz's 'sexual difference perspective', the body becomes a locus for the interplay of various cultural and scientific modes of thought and perception, in Hinton's 'Stella'—and in his greater hyperspace philosophy—we can see how, even in the nineteenth century, these various epistemological modes were being deconstructed and questioned.

Although Hinton was not primarily concerned with gender, his treatment of the invisible heroine of 'Stella' indicates his awareness that such issues are somehow linked to

¹³³ See especially L. Jordanova, *Sexual Visions: Images of Gender in Science and Medicine between the Eighteenth and Twentieth Centuries* (Hertfordshire: Harvester Wheatsheaf, 1989), and Beer, 'Helmholtz, Tyndall, Gerard Manley Hopkins: Leaps of the Prepared Imagination, in *OF*, pp. 242-272.

¹³⁴ E. Grosz, *Volatile Bodies: Toward a Corporeal Feminism* (Bloomington: Indiana University Press, 1994), pp. 17-18.

his hyperspace philosophy: both discourses are concerned with challenging the givenness of nineteenth-century conceptions of 'natural' and social order. At the heart of Hinton's project lies a concern with the manufacture of what is taken to be 'reality', and the ways in which various discourses attempt this construction. In the following discussion of 'Stella', I approach Hinton's project as an artefact of transition—between the nineteenth and twentieth centuries, and between the discourses of science and the imagination—which provides fresh insight into ontological and epistemological debates at the turn of the century. Hinton's hyperspace philosophy is particularly amenable to my examination here because it seeks to remove the embedded, thinking subject from the discursive, epistemological framework that is necessary to its very existence and identity. However, because this text is virtually unexamined in literary criticism, I will give a brief synopsis of the main narrative of 'Stella' before I turn to my analysis of this text.¹³⁵ ..

'Stella' is the story of a young woman who is made invisible by an older man, a scientist and proto-socialist philosopher called Michael Graham.¹³⁶ Graham is a wealthy bachelor, living in a secluded house in the Yorkshire countryside, and after his death, Stella is left alone in his house with the servants. The main narrator of the story, Hugh Stedman Churton, arrives at Graham's house to settle his estate as a favour to Graham's nephew, who is Stedman's friend. It is Stedman who discovers Stella's presence in the house, a fact which was hitherto unknown to Graham's surviving relatives. Stedman first

¹³⁵ At present, the only extended critical treatment of 'Stella' in print is my own. My discussion here draws heavily from my essay, "'The difference between science and imagination'? (Un)framing the woman in Charles Howard Hinton's *Stella*", in *Phoebe: Journal of Gender & Cultural Critiques* 18.1 (Spring 2006): 75-98.

¹³⁶ Graham's philosophy, as expressed in 'Stella', is a forerunner of the socialism of the Fellowship of New Life, a group that started in 1883, of which Havelock Ellis was a founding member. This group later splintered into the Fabian Socialists. See J. Weeks, *Making Sexual History* (Cambridge: Polity Press, 2000). According to Weeks, the constitution of the Fellowship, which Ellis assisted in writing, states that 'the Fellowship was to be based on the "subordination of material things to the spiritual"' (p. 21).

mistakes Stella for a ghost, and after he realises that she is a living, invisible girl of seventeen, he immediately calls for his friend's mother—Graham's sister—to come and collect her. Before this can happen, a fraudulent spiritualist kidnaps Stella and tricks her into performing at his séances. Stedman tracks down Stella and 'rescues' her, marries her, and they travel to China. While in China, Stedman feels increasingly dissatisfied with Stella's invisibility, and upon learning that her strange optical status is not permanent, but rather maintained by regular consumption of a chemical compound, he becomes obsessed with convincing her to return to visibility. In the end he triumphs: Stella becomes visible, and they return to England and have a son. It is at this point that Stedman is reacquainted with another, unnamed friend, who relays Stedman's narration of this story.

In my discussion of this novella, Hinton's biographical details again become relevant, and so I will also briefly contextualise this discussion by touching upon Hinton's personal life. Like his hyperspace philosophy that straddles the boundary between science and fantasy, Hinton's own life oscillated between middle-class respectability and scandal. As I mentioned previously, both Hinton and his father damaged their reputations through what was perceived to be their revolutionary sexual politics and behaviour. James Hinton's followers, usually female, were called 'Hintonians', and were rumoured to be practitioners of polygamy. There was also posthumous controversy surrounding James Hinton's death, which occurred after years of mental instability, from haemorrhaging of the brain. Many of his critics, Karl Pearson being one of the most vocal, speculated that James Hinton had died of undiagnosed syphilis (Grosskurth, p. 53). However, just as James Hinton had posthumous critics, he also gained a posthumous disciple in Havelock Ellis. Ellis became a familiar of the Hinton household only after James's Hinton's death,

and Ellis's journals and his correspondence with Olive Schreiner reveal that James Hinton's writings were a major influence on his own decision to study human sexuality.¹³⁷ Ellis and Schreiner were also acquainted with the more sordid affairs of both James Hinton and his son, with Schreiner giving accounts of Hinton's bigamy trial.¹³⁸ After his conviction, Hinton and his first wife left Britain, living in Japan for around five years, finally settling in the United States. This scandal, and the relocations caused by it, seems to have permanently stunted what appears to have been a promising career for Hinton. He had just received his MA from Oxford in 1886, and he had recently submitted a draft of his first book-length philosophical treatise, *A New Era of Thought*.¹³⁹ His other works already in print, the First Series of *Scientific Romances*, and a textbook, *Science Note-Book*, had been favourably reviewed in journals such as *Nature* and *Mind*.¹⁴⁰ He had also recently given a paper at the Physical Society in London.¹⁴¹ The public disgrace of his bigamy conviction made it impossible for Hinton to find academic work in Britain, and even after he got his first academic post in the United States at Princeton University, Hinton appears to have kept a low profile, perhaps wishing to avoid the possibility of the news of his scandal travelling across the Atlantic.¹⁴²

¹³⁷ See the *The Papers of Havelock Ellis*, and "*My Other Self*": *The Letters of Olive Schreiner and Havelock Ellis, 1884-1920*, ed. by Y. C. Draznin (New York: Peter Lang, 1992). See also H. Ellis, *My Life* (London: Spearman, 1967), particularly pp. 130-131.

¹³⁸ Schreiner corresponded with both Pearson and Ellis about the affair. See "*My Other Self*", and *Olive Schreiner Letters, Vol. I: 1871-1899*, ed. by R. Rive (Oxford: Oxford University Press, 1988), pp. 106-114.

¹³⁹ This text was not actually published until after Hinton had left Britain. The preface to *NET*, signed by Alicia Boole and H. John Falk notes that 'the MSS. which formed the basis of this book were committed to us by the author, on his leaving England for a distant foreign appointment' (p. v).

¹⁴⁰ See 'Scientific Romances', in *Nature* (12 March 1885): 431; 'New Books', in *Mind* 10.39 (July 1885): 467 and *Mind* 10.40 (October 1885): 613. The *Science Note-Book* was apparently published in 1884 by the John Hadden Press in London, but it is not catalogued anywhere at present. See also Ballard, p. 29, note 92.

¹⁴¹ *Nature*, February 5, 1885, notes that on 24 January, 'Mr. C. H. Hinton read a paper on the "Poigraph"' at the Physical Society, 329.

¹⁴² See Ballard, p. 59, and a letter dated 30 October 1896, from Hinton to William James, in W. James, 1842-1910, *Letters from Various Correspondents*, BMS Am 1092, Houghton Library, Harvard University.

Although Hinton and his father were infamous for their treatment of women, they were also public supporters of greater liberation for women. As I mentioned earlier, James Hinton's ideas are reflected not only in Hinton's lifestyle, but also in his hyperspace philosophy. Nowhere is the connection more apparent than in the text of 'Stella', where Hinton appears to be grappling with some of the more problematic aspects of his relationship with his father and his father's philosophy. In a posthumous James Hinton text which Hinton himself had edited, *Chapters on the Art of Thinking*, James Hinton remarked that the foundation of his philosophy is the idea 'that our sufferings are really a giving to others and serving others' (p. 213). Indeed, James Hinton wrote extensively on the need to sacrifice the physical wants of the self in order to please others. This altruistic concept is not unique to James Hinton, but according to Ellis:

The conception by which [James] Hinton sought to supplement it may be described, [...] in a single word, [...] as *service*. By sacrifice he had meant the willing acceptance of pain, all thought of self being cast out; by service [...] he meant the acceptance of pleasure also.¹⁴³

James Hinton saw his project as one that necessitated 'casting out the self'. It is not surprising that his 'altruistic' justification for pleasure was popular amongst his contemporaries who were feeling the strain of Victorian asceticism. Ellis himself was drawn to James Hinton's ethical outlook, which allows a space for pleasure and treats morality as 'a relation which must be fluent, which cannot be rigid', as well as 'permit[ting] that tendency to impulse and the free play of passion' (395). This allowance for 'the free play of passion' influenced Ellis himself to become, as Jeffrey Weeks describes him, one 'of the first of the "yeah-sayers"' of sexual reform at the turn of the century (p. 17). However, there is also a darker side to James Hinton's philosophy.

¹⁴³ H. Ellis, 'Hinton's Later Thought', *Mind* (July 1884): 384-405, 394, original emphasis.

Ellis's papers contain a disturbing reference to James Hinton's belief in the 'free play' of passion supported by self-abnegation. After the publication of praise for James Hinton's philosophy in the *Mind* article quoted above, Ellis received a letter from Emma F. Brooke on 5 August 1885, warning him of the dangers of the propagation of James Hinton's ideas. Brooke mentions an encounter with James Hinton when both were thrown into close contact over a period of days. According to Brooke, James Hinton made repeated, and unwanted, sexual advances upon her. Brooke writes:

At last things came to such a pass that I was obliged to tell him I loathed him and I coupled this with some caustic remarks as to the unmanliness of his conduct. He then told me that he was aware I disliked his attentions and he had thereby the hypocrisy to add that he wished to teach me that duty and loveliness of yielding myself to 'others' needs' and wishes, and of over-coming all 'self-regarding impulses'.¹⁴⁴

Brooke continues, warning Ellis that nothing could be 'more injurious to the liberty of woman' than James Hinton's tenets enacted. Furthermore, she adds that 'the worst of it is that my experience as regards [James] Hinton by no means stands alone; he was in the habit of persecuting young girls' (p. 40). James Hinton's 'habit of persecuting young girls' may have spilled over into his own family as well. Ellis's papers and Schreiner's letters also contain references to what appears to be possible incidents of sexual abuse and incest in the James Hinton household.¹⁴⁵ Hinton's explanation of his decision to surrender himself as a bigamist, and indeed, his given reasons for committing bigamy, appear to

¹⁴⁴ *The Papers of Havelock Ellis*, pp. 38-39. It appears that Brooke was originally put into contact with Ellis through Schreiner. See "*My Other Self*", pp. 53-56. Brooke apparently wrote to Pearson about the incident as well. See Porter, pp. 136-137. According to Porter, Brooke was 'one of the first woman students at Cambridge and an early Fabian' (p. 136).

¹⁴⁵ Schreiner writes of two separate instances of James Hinton undressing and handling his daughters, once with Hinton present as well. See "*My Other Self*", pp. 116-117 and 402-403. Ellis's papers also relay an incident, witnessed by a Mrs Barnes, who claims to have seen one of Hinton's lovers, 'Daisy', 'running about naked in the room where [James] Hinton and his son were' (p. 41).

derive directly from his father philosophy of 'service'.¹⁴⁶ It is therefore not surprising that Hinton's own ideas on 'casting out the self' are contradictory and fraught with the anxiety of self-dissolution. It is also possible to detect a sense of dissatisfaction with James Hinton's philosophy in 'Stella'. Thus, I will begin my discussion of this text by examining the invisible Stella as a product of Michael Graham, a man whose ideas are presented as being very similar to those of James Hinton.

After Stedman's discovery of Stella and his realisation that she is not a ghost, Stella explains the cause of her invisibility. Through his experiments 'in the border land between chemistry and physics', Graham had discovered a way to render the body transparent, which is possible "if the coefficient of refraction were unity, that is, if light didn't bend at all in entering the material of which the body is composed" (SR 8, pp. 14, 34-35). Light is usually bent upon encountering the body, Stedman observes, because the body "is made of a multitude of parts, each turning the light as it enters it" (p. 34). However, Stella explains, Graham "found out how to alter the coefficient of refraction of the body. He made my coefficient equal to one" (p. 35). Stella, as an invisible woman, is Graham's creation, by means of his somehow changing the angle at which light encounters the human body. In addition to these references to the fields of chemistry and physics, Stedman notes the existence of optical instruments in Graham's workshop. Such discussions of rendering the body invisible are reprised and updated in Wells's *The Invisible Man*, as I will discuss below. However, while Wells's protagonist makes himself invisible for purpose of personal aggrandisement and liberation from social responsibility,

¹⁴⁶ 'Police Report', in the *Times* (London), October 15, 1886, 3; and October 16, 1886, 4. See also R. First and A. Scott, *Olive Schreiner* (London: Andre Deutsch, 1980), pp. 163-164.

Hinton's Graham causes Stella's invisibility in order to liberate her from subjectivity, and to achieve perfect compliance with his Hintonian proto-socialist ideology.¹⁴⁷

Stella's explanation to Stedman of Graham's reasons for making her invisible is reminiscent of James Hinton's philosophy: "Don't you see [...] being is being for others. [Graham] used to say that true life begins with giving up" (p. 35). Stella is thus an emblem for Graham's philosophy of self-sacrifice, taking her place alongside other female bodies that, as Jordanova explains, have 'been extensively represented in public places; statues, monuments and decorative friezes all teem with women, who are, as often as not, standing for something else' (p. 134). Stella is quite happy to 'appear' in public, as an invisible woman, in order to evangelise Graham's philosophy. It is Stedman who insists on her hiding her invisible condition. Stella quite explicitly confirms her emblematic status when she compares herself as Graham's product to Madonna and Beatrice in the quotation given at the beginning of this section. Stella's opposition of science to imagination in this quotation is also an interesting one: she acknowledges that Graham's decision to experiment upon a specifically female subject is the result of his own imagination, which is framed, as Jordanova illustrates, by discursive and mythopoetic epistemologies that assume that the female is naturally constructed in relation to the male subject. By opposing science to imagination in this statement, Hinton is also implicitly drawing our attention to another process that was well underway at the turn of the century: the rendering of cultural assumptions about femininity into scientific 'fact' through the developing discourse of sexology.¹⁴⁸

¹⁴⁷ It is significant that in her admonition of James Hinton to Ellis, Brooke requests that he print her letter 'in any of the socialist papers' (p. 40).

¹⁴⁸ Hinton also includes a 'four-dimensional' interpretation of the 'sexual inversion' theory of homosexuality put forward separately by Krafft-Ebing and Ellis. In his third romance, 'A Plane World', Hinton proposes a

The 'zoological facts' of gender

Ellis's 1894 publication, *Man and Woman: A Study of Human Secondary Sexual Characteristics*, offers further insight into the text of 'Stella', and into Hinton's concern with the crossing-over of mythology into science. Like Hinton and his father, Ellis considered himself an advocate for the rights of women, and throughout his writings he strives to abolish ignorance and prejudice about 'the woman question' by subjecting it to scientific inquiry.¹⁴⁹ His writing, although open and explicit for its time, is also dated by his scientific methodology, with its interpretational bias. According to Kathy Ferguson, a more balanced and 'honest' approach to examining gender combines both interpretive and genealogical strategies. Both approaches 'need' one another, Ferguson claims, because 'the interpretivist holds up for us a powerful vision of how things should be, while the genealogist more cautiously reminds us that things could be other than they are' (p. 24). In

two-dimensional world of upright, right-angled, triangle-shaped inhabitants. The 'feet' of each being are located at the 'bottom', or horizontal, cathetus of the triangle. The 'face', or 'sensitive edge' is located on the vertical cathetus, and the 'hard edge' of the being is located along the hypotenuse: 'on the sensitive edge is the face and all the means of expression of feeling. The other edge is covered with a horny thickening of the skin, which at the sharp point becomes very dense and as hard as iron' (SR 3, p. 145). The 'female' triangles are mirror images of the 'male' triangles. Hinton provides paper cut-outs for the reader to utilise in imagining these beings: 'it must be remembered that the figures cannot leave the plane on which they are put. They must not be turned over' (p. 145). The 'shape' of the triangles thus determines their sex, and their relations with one another, which are necessarily heterosexual: 'it is evident that the sharp point of one man is always running into another man's sensitive or soft edge. [...] It will be evident, on moving the figures about that no two men could naturally come face to face with each other. In this land no such thing as friendship or familiar intercourse between man and man is possible' (p. 145). However, Hinton reveals, 'in the annals of this race which I have by me I find a curious history' (p. 146). A male triangle, Vir, and female triangle, Mulier, who had been 'living in a state of utmost perfect happiness' are disturbed one day, when, 'owing to certain abstruse studies of the Mulier, she was suddenly, in all outward respects, turned irremediably into a man' (p. 146). This bizarre transformation is the result, according to Hinton, of Mulier somehow gaining access to the third dimension of space. She eventually manages to reverse the effects of her experiment, but in the interim, she and her partner continue their relationship in a fashion that can only be read as crudely 'homosexual': 'Vir recognized her as the same true Mulier. But she occupied the same position with regard to him which any other man would. It was only by standing on his head that he could, with his sensitive edge, approach her sensitive edge' (p. 146). Wells describes a similar physiological inversion, without the sexual implications, in 'The Plattner Story' (1896).

¹⁴⁹ I have in mind Kathy Ferguson's interpretation of 'the woman question', which 'particularly as elaborated in nineteenth- and twentieth-century socialism', is a way that 'women are problematized and fitted into' a world order established by men and based on male understanding and experiences. See K. Ferguson, *The Man Question: Visions of Subjectivity in Feminist Theory* (Berkeley and Los Angeles: University of California Press, 1993), p. 1.

Man and Woman, Ellis unconsciously accepts the framework that posits a dichotomy between masculine and feminine, which Jordanova describes as linking the male with culture and the female with nature.¹⁵⁰ Ellis writes:

While women have been largely absorbed in that sphere of sexuality which is Nature's, men have roamed the earth, sharpening their aptitudes in perpetual conflict with Nature. It has thus come about that the subjugation of Nature by Man has often practically involved the subjugation, physical and mental, of women by men.¹⁵¹

Ellis reinterprets this dichotomy, positioning women as the victims of men and therefore morally superior; however, he still accepts the original opposition that equates women with nature, and ties them to their passive bodies that are rendered as space that must be colonised by men, figured here as 'progress', or time. The result is also a separation of the male experience from embodiment, and projection of that experience onto a feminine Other.

Sociologically speaking, for proto-feminist writers such as Ellis, these essentialised differences between the sexes actually highlight inherent female superiority in the area of ethics and political governance. Females, according to this line of reasoning, are more closely aligned with nature and therefore exhibit 'organic conservatism'. In applying these 'zoological facts' to politics, Ellis finds that 'organic conservatism may often involve political revolution' (p. 370). In an important connection for my analysis of 'Stella', Ellis then links female 'nature' to socialism: 'Socialism and nihilism are not, I believe, usually regarded by politicians as conservative movements, but from the organic point of view of the race they may be truly conservative, and as is well known, *these movements have*

¹⁵⁰ Using the opposing categories of 'women' and 'men', Jordanova writes: '*Women*: superstition and custom, learning from kin, unlearned, daily care. *Men*: Philosophic Knowledge, learning by observation and experience, scientific, direction, superintendence, and management' (p. 31, original emphasis).

¹⁵¹ H. Ellis, *Man and Woman: A Study of Human Secondary Sexual Characteristics* (London: Walter Scott, 1894), p. 395.

powerfully appealed to women' (p. 370, my emphasis). While being inherently socialist or nihilist may be interpreted as either a positive or a negative attribute, Ellis makes his own position clear by concluding:

The wisdom of Man, working through a few centuries in one corner of the earth, by no means necessarily corresponds to the wisdom of Nature, and may be in flat opposition to it. Taking a broad view of the matter, it seems difficult to avoid the conclusion that it is safer to trust to the conservatism of Nature than to the conservatism of Man. (p. 397)

This 'wisdom of Man' is gender-specific for Ellis, and it is directly opposed to 'Nature', or 'the nature of woman'; earlier he writes that 'woman is more in harmony with Nature than man, [...] and she brings man into harmony with Nature. This organically primitive nature of woman, in form and function and instinct, is always restful to man' (p. 371).

Ellis's argument, that the female is more attuned to natural processes and is thus able to act as a moral touchstone for the male, is a scientific refiguring of Ruskin's idealisation of womanhood as expressed in 'Of Queens' Gardens'. Here, Ruskin writes of the male and female: 'Now their separate characters are briefly these. The man's power is active, progressive [...] his energy [is] for adventure, for war, and for conquest'.¹⁵² Ruskin also genders time in this statement, by figuring masculine 'energy' in terms of progress and action. Conversely, Ruskin spatialises the female: the woman's place lies in the home, where 'her great function is Praise'. The 'true nature' of that feminine space, the home, is 'the place of Peace', where the male can seek refuge, but only if his wife has been educated to nurture her supposedly inherent ability to be 'enduringly, incorruptibly good; instinctively infallibly wise—wise, not for self-development, but for self-renunciation' (pp. 77-78). Thus the peace and safety of the home, the nation, and even the entire species, relies on the careful and successful cultivation of woman's predisposition toward

¹⁵² 'Of Queens' Gardens', in *Sesame and Lilies and Unto this Last* (London: Blackie and Sons, n. d.), p. 76.

sympathy with the natural world. Ellis's approach to re-examining femininity is continued in twentieth-century feminist projects such as the Greenham Common Women's Peace Camp, which protested nuclear military technology while seeking to establish an alternative, positive female identity through exploring what Jordanova describes as 'other values in nature with which women could more aptly be associated, such as nurturance or healing powers' (p. 15). Monique Wittig, among others, challenges this interpretative feminist strategy, highlighting its essentialist foundations, and warning that 'by doing this, by admitting that there is a "natural" division between women and men, we naturalize history, we assume that "men" and "women" have always existed and will always exist'.¹⁵³ In addition to begging the question of biological determinism, these interpretivist approaches often position the woman as the saviour of *mankind*, a persistent idea that appears in genealogical feminist strategies as well. Annie Potts cites such an example in her study, *The Science/Fiction of Sex*, noting how Deleuze and Guattari's theory of sexual liberation through 'becoming-woman' is flawed because, as she explains, it 'involves the necessity for women to "become-woman" *first* so that man may also be transformed'.¹⁵⁴ The problem with imposing responsibility for male salvation upon the female in this way is that, as Potts explains, it 'maintains woman's position as "other", and renders woman primarily responsible for change' (p. 253).

¹⁵³ M. Wittig, 'One is Not Born a Woman', in *The Straight Mind and Other Essays* (New York and London: Harvester Wheatsheaf, 1992), pp. 9-20, pp. 10-11. See also D. J. Fuss, 'Essentially Speaking: Luce Irigaray's Language of Essence', in *Revaluing French Feminism: Critical Essays on Difference, Agency, & Culture*, ed. by N. Fraser and S. L. Bartky (Bloomington: Indiana University Press, 1992), pp. 94-112, who discusses what she calls 'Irigaray's strategic use of essentialism', highlighting how this differs from other forms of essentialism (p. 95).

¹⁵⁴ A. Potts, *The Science/Fiction of Sex: Feminist Deconstruction and the Vocabularies of Heterosex* (London and New York: Routledge, 2002), p. 253, original emphasis.

The acceptance of this essentialising dichotomy between male and female also underpins Graham's decision to make a female, rather than a male, subject invisible, as Stedman explains:

Michael Graham had resolved to try practically what direction the activities of the soul took when the *self-regarding impulses* were denied the opportunity of existence. A boy cares about eating and drinking and getting things. You could not deprive him of these self-centred activities of his, without [killing him] [...]. Instead of a boy he experimented on a girl, for a girl's self-love is concerned with being looked at—it is in producing an effect on others that her self-love is gratified. By taking away visible corporeality from Stella, he took away the means of living for herself.¹⁵⁵

Graham's desire to obtain experimental validation for his proto-socialist ideas is combined with his unquestioning acceptance of the traditional linking of male with externalised temporal activity, and the female with the spatialised object, or Other. Thus Graham decides that by removing the female's capacity for attaining status as Other, he will deprive her of a sense of self and be able to remedy any moral imperfections stemming from 'self-regarding impulses'. Stedman similarly accepts this dichotomy without question; however, his interpretation of gender relations is clearly more 'capitalistic' than Graham's. For Stedman, Stella is primarily a body, a surface upon which to reflect and define himself only. Ironically, Stedman's insistence that Stella's visible corporeality is her only 'means of living for herself' reduces her to living for another: the male subject. While Graham would have the invisible Stella exist for all others as a shining example of 'service', Stedman demands that she be 'privatised' and live solely for him.

Reversing the values of the traditional dichotomy between male and female can function as a critique of the political and social establishment that is founded on 'Man's wisdom'. This interpretivist strategy does not problematise the original dichotomy, but

¹⁵⁵ SR 8, pp. 48-49, emphasis added. Note the exact reiteration of the phrase 'self-regarding impulses' that Brooke places in quotation marks in her letter to Ellis in reference to James Hinton's justification for his unwanted sexual advances.

rather it seeks to challenge the ways in which each side of that dichotomy is evaluated. Ellis, although a champion of 'social readjustment' that would allow for what he describes as 'the development in equal freedom of both the masculine and feminine elements in life', is offering scientific legitimacy to this dichotomy that always defines woman as Other. Simply reversing the values of this dichotomy is, according to Ferguson, indicative of early feminist responses to 'the woman question', which Grosz describes as 'egalitarian feminism'.¹⁵⁶ It is here that the limits of the interpretivist approach are exposed as it neglects to acknowledge that it is functioning within a metatheory. The question being ignored is one of framing: Stella, whether she remains invisible or gives into Stedman's wishes for her to become visible again, continues to have her corporeality defined by male desire.

In referring to 'framing' here, I have Irigaray's work in mind. The female, Irigaray writes, is framed by the male subject as Other. Figured in this way, she is unable to acknowledge her own subjectivity because 'no space-time is available for experiencing it. Traditionally spacing is created, or occupied by man, child, housework, cooking [...]. When she is placed as an object by and for man, love of self is arrested in its development'.¹⁵⁷ The development of this 'love of self' is not as stark an opposition to the James Hinton/Michael Graham concept of self-sacrifice for others as it may seem at first. James Hinton uses the term self in a very specific, and confusing, manner. According to James Hinton, the sense of self that a subject feels is in fact a sense of negation.¹⁵⁸ This

¹⁵⁶ Grosz, *Volatile Bodies*, p. 14. Ferguson similarly identifies this response, calling it the 'Me too!' approach to feminism (p. 1).

¹⁵⁷ L. Irigaray, *An Ethics of Sexual Difference*, trans. by C. Burke and G. C. Gill (Ithaca: Cornell University Press, 1993), p. 70.

¹⁵⁸ See J. Hinton, *Man and His Dwelling Place: An Essay Towards the Interpretation of Nature* (London: John W. Parker and Son, 1859), especially pp. 187-196.

self is physical, and for James Hinton, the “physical is but the way in which the non-perception of the spiritual is expressed”.¹⁵⁹ For Irigaray, Cixous and other critics of Freudian psychoanalysis, female sexuality is misconceived as a *lack*, as the absence of the male sex organ. James Hinton’s desire to drive out what he calls the self—the physical—is one drastic way of getting around this sense of negation. Stella’s invisibility could thus be understood as a way of releasing her from being defined as a lacking Other within the framework constructed by the male subject. In a ‘specular’ economy of sexuality, Stella’s invisibility would free her from being a mere object of transaction because, as Irigaray observes, ‘vision is effectively a sense that can totalise, enclose, in its own way. More than the other sense, it is likely to construct a landscape, a horizon’ (p. 175). Within this context, the experiment of creating an invisible woman, is thus a means of removing the self from the framework of Western epistemology. Hinton implies that removing Stella from this framework is not so straightforward, however; her invisible status is the product of Graham’s imagination that is in turn shaped by a discourse in which, as Irigaray observes, ‘the entire speaking body of the subject is in some way archaeologically structured’ (p. 176). As Grosz notes, Irigaray is not seeking to create ‘a new language’ here, but rather ‘to overburden existing forms of language and dominant discourses with their own ambiguities’.¹⁶⁰ Similarly, throughout his hyperspace philosophy and particularly in ‘Stella’, Hinton draws attention to this kind of enframement, and by offering multiple frames for ‘Stella’, he challenges the primacy of the existing discursive framework for epistemological and ontological questions.

¹⁵⁹ Shadworth H. Hodgson, ‘The Larger Life: Studies in Hinton’s Ethics’, in *Mind* (April 1886): 257-262, 260.

¹⁶⁰ E. Grosz, *Sexual Subversions: Three French Feminists* (Sydney: Allen and Unwin, 1989), p. 127.

Hinton's project of popularising the fourth dimension is indicative of his concern with destabilising the ways in which such framing devices construct what is commonly accepted to be possible and natural. Ferguson writes:

The questions we can ask about the world are enabled, and other questions disabled, by the frame that orders the questions. When we are busy arguing about the questions that appear within a certain frame, the frame itself becomes invisible; we become *enframed* within it. (p. 7, original emphasis)

How, through Hinton's narrative of an invisible woman, does Hinton work to render this kind of enframing visible? His *Scientific Romances* appear, in form and content, to be particularly suited to such a task, by encouraging the reader to continually frame and reframe their reading and understanding of the fourth dimension. Discussing the Victorian heroine, Helena Michie writes that 'framing, unframing, and reframing become part of the act of reading, of inhabiting the fictive world of the novel; cameos of women's bodies appear and disappear'.¹⁶¹ In this sense, Stella is very much a Victorian heroine: her body literally disappears and reappears within the text; she has been (un)framed by Graham, and in order to be reframed according to Stedman's desires, she must become visible again. Stedman even addresses this issue of framing when speaking of his battle with the legacy of Graham's philosophy for control over Stella's optical status: early in the narrative, when he discovers the seemingly unused 'feminine' quarters of Graham's house, he observes that 'Michael Graham might have found a real Egeria to inspire him [...]—perhaps he made that *fitting frame* for loveliness, brooding in his solitary life on what might have been' (p. 17, emphasis added). Contained within this explicit reference to framing is also an allusion to the framing device of myth. Structurally speaking, this text is itself framed by the voice of the unnamed narrator as well. Perhaps the best way to

¹⁶¹ H. Michie, *The Flesh Made Word: Female Figures and Women's Bodies* (New York and Oxford: Oxford University Press, 1987), p. 109.

generate answers to this question of making the frame visible is to first examine the ways in which Hinton frames this text.

Stella as victim of Graham; Stedman as liberator

This first reading considers Stella enframed as a victim of abuse at the hands of an older, corrupt man, Michael Graham. Her invisibility can be read as a physiological, or possibly psychological, symptom of this abuse. Reading Stella as a Victorian heroine, considering the ways in which her invisibility can be interpreted as a specifically female disorder provides another means of reading this text. Michie identifies the various ways that the Victorian female body is coded, many of which can be applied to Stella. Beginning with a discussion of anorexia, Michie highlights cultural examples of an obsessive linking of food with sexuality in nineteenth-century literature. In novels of this period, Michie observes, depictions of Victorian heroines eating are ‘conspicuously absent’ from a culture where ‘the dinner table is an important locus of interaction’ (p. 12). The issue of eating arises very early in ‘Stella’, when Stedman unwittingly deprives Stella of her morning meal. When he first arrives at Graham’s estate, Stedman is offended to find that the servant has set two places at the breakfast table: “‘Does the man intend to sit down with me?’” he wonders (p. 16). He orders the servant to remove the extra setting, which is actually Stella’s. After breakfast he hears sobbing in the garden; later, he realises that this was Stella. When he inquires about the episode, she explains: “‘It was very hard not to have any breakfast’” (p. 38). Eating as a public activity, seems to be permissible only for men. In giving an example of a nineteenth-century medical text that perpetuates the gender dichotomy of male as active subject and female as passive Other, Jordanova illustrates how in even presumably ‘scientific’ texts, women are not depicted as having any

relationship with food. Referring to a French medical text by Jules Michelet, *L'Amour* (1858), which was widely read in French and English in the nineteenth century, Jordanova explains: 'In *L'Amour*, Michelet stated that men and women have different characteristic illnesses, women from emotions, men from digestion' (p. 78). Like those heroines whose appearance at the dinner table is prohibited or circumscribed, Stella is also conspicuously 'absent' from the story that bears her own name. Stella's invisible body, like the anorectic's, can be read as a literal translation of such cultural attitudes.

Michie and Susan Bordo both note that women typically begin presenting symptoms of anorexia at the onset of, or during, puberty.¹⁶² This is not surprising, considering the link between eating and sexuality that Michie highlights. Stella's invisibility also occurs at this time; she tells Stedman that Graham made her invisible when she was fourteen years old (*SR* 8, p. 27). One cannot help but recall James Hinton's 'habit of persecuting young girls', and there is an intimation of sexual abuse in Stella's case as well. Stedman repeatedly expresses disgust and revulsion at what Graham has done to Stella, describing his house as 'black and lowering—a fitting abode for one who had deprived an innocent girl of all that could make life worth having' (p. 39). Stella seems to be 'damaged goods'; the implication, here, that Stella has been 'deprived' of her 'innocence' is clearly tied to sexuality. Coded in terms of lost virginal 'innocence' Graham has apparently taken Stella's one bartering chip as a young, middle-class female Victorian. At the announcement of Stella's marriage to Stedman, her aunt begs him: "I am so afraid for her, please let her stop here with me. I will try to undo *the great wrong* my brother has done" (p. 75, emphasis added). Like James Hinton, whose free-love

¹⁶² See Michie, and S. R. Bordo, 'The Body and Reproduction of Femininity: A Feminist Appropriation of Foucault', in *Gender/Body/Knowledge: Feminist Reconstructions of Being and Knowing*, ed. by A. M. Jagger and S. Bordo (New Brunswick: Rutgers University Press, 1992), pp. 13-33.

philosophy apparently supported and perpetuated his abuse of women, Stedman muses that 'perhaps Michael Graham, having made her transparent in his dogmatic stage, and being unable to undo his work, consoled himself with the thought that she was an emblem'.¹⁶³ In this reading, Stella has been abused by Graham, her invisible body rendered a space, or a blank surface upon which he has reflected himself and his own ideals.¹⁶⁴ This reading of Stella's body also assumes an original state of 'purity', a *tabula rasa* of virginity; enframed in this manner, Stedman's anger at Graham is justified, as the older man has inflicted damage on Stedman's property before he can even possess it.¹⁶⁵ In this interpretation of 'Stella', Stedman—as the man who is willing to marry the figuratively deflowered Stella, and as the one who pushes her to reclaim her status as a visible woman—is his wife's champion. He helps Stella to reclaim herself as a *self*. The effect of visibility on Stella in this case is not a superficial one: the appearance of surfaces, according to Grosz, also

¹⁶³ *SR* 8, p. 52. My comparison of Graham with James Hinton is supported by various autobiographical details in this story. Aside from the similarities between the philosophies of Graham and James Hinton, Stedman's relationship to Graham appears to be at least in part influenced by Hinton's relationship with his father: Stedman/Hinton must edit Graham/James Hinton's unpublished papers; both Stedman and Hinton are athletic men who appear to be, at times, physically aggressive; both are exiled to travel in the Far East. Also, in 'Stella', Stella is the daughter of another woman named Stella, to whom Graham had had a romantic attachment. This woman had disappointed Graham and married another man, but after her death—and, apparently, her husband's—Graham was appointed guardianship of their daughter, Stella. Matters were similarly convoluted in the James Hinton household. In Ellis's papers, he notes that 'according to [Mrs Barnes] Mrs Boole really was [James Hinton's] mistress' (p. 41). The 'Mrs Boole' in question is Mary Boole, the widow of mathematician George Boole. Mary Boole was the confidant and follower of James Hinton, one of the foremost 'Hintonians'. Charles Howard Hinton married Mrs Boole's daughter, a woman also named Mary. Mary Boole Hinton was Hinton's first—and legal—wife.

¹⁶⁴ See also Rosaleen Love's story, 'The Invisible Woman', in *Writing Women* 6 (1988): 27-32, where she offers a twentieth-century feminist interpretation of female invisibility. Her invisible heroine, also named Stella, is figuratively invisible to her male partner and her male co-workers. *They* are noticed by others, because 'their light shines, and their beams show them off to their advantage' (p. 27). Conversely, Love's Stella is either invisible, or she functions as a mirror for her male counterparts. Love's Stella concludes that 'I am a woman, and my light makes me transparent. There's nothing else for it. I shall have to create my own glory for myself' (p. 27). The similarities between Love's text and 'Stella' are striking; however, I have not been able to determine if Love was directly influenced by Hinton's text.

¹⁶⁵ For a discussion of female virginity, the possession of women and framing, see S. Gubar, "'The Blank Page' and the Issues of Female Creativity", in *Critical Inquiry* 8 (Winter 1981): 243-264.

generate[s] an interior, an underlying depth, individuality, or consciousness. This depth is one of the distinguishing features marking out the modern, Western capitalist body from other kinds. Western body forms are considered expressions of an interior, of subjectivity.¹⁶⁶

Thus Stella's return to visibility, the reappearance of the surfaces of her body implies her status as a subject. By becoming a visible subject, in this reading of 'Stella', Stella is appropriating her rightful place within an Enlightenment conceptualisation of subjectivity.

Mythology as framing device in 'Stella'

There is a darker side to Stella's reclamation of the interior spaces that are implied by her visible body, however. Aside from Potts's claim that 'the very definition of virginity reinforces the significance of the female body as essentially perforable—as rapable' (p. 205), the assumption of an originally 'pure' and intact embodied self is dangerous for other reasons, as Haraway observes: 'Every story that begins with original innocence and privileges the return to wholeness imagines the drama of life to be [...] the birth of the self, the tragedy of autonomy, the fall into writing [...] tempered by imaginary respite in the bosom of the Other' ('Manifesto', pp. 34-35). Thus reading 'Stella' as a narrative of her return to visibility and wholeness as Victorian wife and mother confirms the eschatological model that Hinton's hyperspace philosophy seeks to challenge. Graham's valuation of 'the love of the All' as transcendence over self-love is also a quest for 'respite in the bosom of the Other'.

It is significant that Stella's understanding of Graham's ideology is coded in terms of the origin myth of Adam, Eve and the Fall. Michie, Sandra M. Gilbert and Susan Gubar examine Victorian novels that rewrite the Fall myth, 'where women's sexuality, power, and hunger are conflated' (Michie, p. 13). Stella relays Graham's retelling of the Fall: "In

¹⁶⁶ E. Grosz, *Space, Time and Perversion: Essays on the Politics of Bodies* (New York and London: Routledge, 1995), p. 34, emphasis removed. I will refer to this text as *STP*.

the garden of Eden, Eve was like the air—like a spirit. But Satan tempted her, and she wanted Adam to see her. So she ate of the apple of the tree of being seen and known” (p. 32). Thus in her original ‘pure’ state, woman—according to Graham and Stella—would have no body at all; she would be simply space, thin air, through which man can move. Visibility is equated with ‘Original Sin’ here. Stedman argues that the mythical apple was actually from the ‘Tree of Knowledge’, but Stella counters with her own—via Graham—version of the myth: ““There were two trees in the garden of Eden, a big one for Adam, and a smaller one for Eve. Her tree was the tree of being seen and known. When she ate that kind of fruit, she became visible, she was no longer as she was meant to be”” (p. 32). In another twist to the myth of original purity, Stella and Graham actually read Stella’s invisible status as return to a state of unity. It is not coincidental, then, that Stella’s transparent state is caused by rendering her coefficient of refraction to ““unity”” (p. 56).

In the Fall myth of Stella and Graham, only Adam dresses his body out of shame, or perhaps the desire to better define the boundaries between himself and the female Other, Eve. Conversely, Eve dresses her person out of self-regard—the desire to be an acknowledged and knowledgeable subject—and ever since, Stella says, ““we [women] have tried how much we could put on, and that is the temptation we must strive against”” (p. 33). Dressing, then, for women, is sinful, and when Stedman asks Stella: ““Won’t you put some colour or something on your face, so that I can see you?””, Stella reacts with horror (p. 35). ““How can you ask me? Why, that would be to paint, and you know what everyone says of women who paint. [...] Oh, Hugh! I tell you what I call them—fallen angels”” (p. 35). With this allusion to prostitution, Stella conflates visibility, or self-assertion, with sexuality, even though she is quick to explain that by ““fallen angels”” she

means “those women [...] whose coefficient is really right, but they regret being invisible, and so they paint—they go back” (p. 36). The Fall myth becomes fluid here, connected to Graham’s science in ways that make the boundary between science and myth difficult to determine. Similarly, Jordanova observes that “myth” by definition, and like “science,” enjoys general abstract status. It lies beyond the here and now [...]. They are ever-present exemplifications of beliefs so deeply entrenched that enquiring about their origins seems fruitless’ (pp. 8-9). Graham’s rewriting of the Fall myth serves to bolster his science, which is in turn informed by mythology. By undermining the Judeo-Christian myth of the fall from an original state of grace, Hinton places it alongside a scientific discourse that he has also rewritten to allow for the possibility of an invisible woman. Both, it seems, are permeable discourses, as is the discourse of gender that is informed by science and mythology. Stella’s return to visibility at the end of the text could in this case be seen as an subversion of Victorian, idealised womanhood, where the ‘delicate woman [...] does not assert her physical needs [and thus] serves to recuperate the Fall and to re-establish lost innocence’ (Michie, p. 13). In the Fall myth of Stella and Graham, the Fall is actually caused by woman becoming a visible, embodied self; thus, her reclamation of her own visible status, of a body that, as Stedman observes, is ‘not so slight as you would imagine, but lithe and active, like a girl of the open air and hunting field’, is in direct defiance of this myth (*SR* 8, p. 84). By consciously violating this origin narrative, Stella is also defying the pressure that Graham, Ellis, and even Deleuze and Guattari would place upon her, to take the first step in redeeming mankind.

Hinton also mentions other mythological figures in relation to Stella: Egeria, Madonna and Dante’s Beatrice. These women serve as the inspiration for their male

counterparts, acting as holy vessels that carry potential salvation. Stella and Graham both model her invisible self after this emblematic sisterhood. The difference, as Stella explains it, is that she has not been imagined and depicted in a representational artwork, as the others have. ““Being real””, she claims, is not the same as being a representation. However, Stella’s ‘real’ state of invisibility, though achieved through scientific means, is the product of the desire for male transcendence through a female medium. That Stella exists for men—either the whole of humankind, figured as *mankind*, or only for Stedman—is reinforced by this tradition of the mythological female muse. Even though Stella offers a revision of the Fall myth, it is nonetheless a revision that supports her status as Other. However, the very rewriting of this myth—like Hinton’s challenge to Kant’s ‘apodictically certain’ three-dimensional space—challenges the notion that myths are abstract truths lying outside of time and space. Stella’s reiteration of Graham’s version of the Fall myth, which he has altered to explain or justify his desire to render Stella invisible, implies the possibility that other myths are similarly constructed and open to revision. By offering an altered version of this origin myth as the product of one man’s perversion, Hinton foregrounds the artificiality of framing devices such as abstract truth, and the narrative of innocence and the Fall into sin.

Invisible Stella as liberated subject; Stedman as subjugator

Just as there is evidence in the text of ‘Stella’ to argue that this is the story of a woman achieving personal fulfilment and liberation through asserting her right to status as a subject—assuming a rather Western, Enlightenment narrative of ‘liberation’ as a necessary precursor to subjectivity—there is also evidence to support an opposed reading. This converse interpretation of ‘Stella’ positions Stedman as an abusive husband who

imposes his will upon Stella, convincing her to become visible in direct violation of her own principles. The unnamed, framing narrator of the story testifies to Stedman's domineering tendencies at the beginning of the narrative. According to him, Stedman belongs to that class of men who

have the habit of being elected captains of their football or cricket teams when young [...]. In the mining company with which I became connected [...] there are numbers of native employés, excellent men, most admirable in every private relationship; but they all occupy subordinate positions. We have to put over them some low-lived, swearing Englishman, with one-tenth of their mental ability [...]. There is something that the Hindoos lack and which [Stedman] possessed in abundance. (pp. 8-9)

Hinton's characterisation of Stedman, via the narrator, is also a self-aware one. Stedman is perhaps too quick to find fault with Graham's high-minded metaphysical writings, exhibiting what the narrator refers to as his 'even more than average English incapacity for ideas' (p. 107). When Stedman's friend, Frank Cornish, begins voicing opinions that are very similar to those expressed by Hinton in his own writings, Stedman exclaims: "Good Heavens! [...] Do stop this rot!" (p. 45). Stedman's imaginative failings and 'incapacity for ideas' also delay his discovery of the invisible Stella because, he explains, 'it seemed drivelling nonsense to sit there speaking to nothing', and 'I felt inclined to call out [...] for her, but the ridiculousness of speaking to the thin air kept me silent' (pp. 21, 26). Unwilling to risk experimentation, Stedman is also an impatient man, quick to violence. He beats the household dog at Graham's estate, for disobeying his orders, unaware that the animal is actually obeying commands from the invisible and silent Stella (p. 21).

Stedman's constant pleas for Stella to make herself visible for him are also aggressive; indeed, there is a territorial, sexual aspect to his wishes. Stella's invisibility prevents her from being 'read' by Stedman, and her body is also protected from inscription of Stedman's needs and desires. Even after she is his wife, he is unable to 'possess' her:

he must first be able to see her, because, as Jordanova reminds us, the act of looking is ‘an act that lies at the heart of our epistemology [...] the process of looking is central to the acquisition of valid knowledge of nature’ (p. 91). Stella—like nature—is something that must be observed to be ‘known’, and without seeing her, Stedman cannot know her, either intellectually or sexually. He notes that all photographs have been removed from the walls of Graham’s house when he arrives; thus Graham is, posthumously, in a position of power over Stedman as the only one to have actually ‘seen’ Stella. In this sense, ‘Stella’ is also about a knowledge and power struggle between two men over a woman who is not an agent, but property. There is also a spatialised, sexual aspect to Stedman’s wish that Stella internally reproduce his image within her body, ‘that someday she may bear my image within her heart as she does [Graham’s]’ (p. 100). His desire to supplant Graham’s presence within Stella’s interior is clearly a colonising one, and only possible because of a conflation of the female with penetrable spatial territory. Similarly, Stedman’s wishes to define Stella as a mappable space are apparent in his requests for Stella to dress herself, so as to be partially visible. In this case, dressing Stella is inverted so that it is tantamount to undressing her. Drawing attention to the surfaces of the body here creates the effect of depth, and, as Grosz writes, ‘libidinize[s] the body’s capacity to form linkages with other bodies, animate and inanimate’.¹⁶⁷ Dressing, then, offers another means of framing the female body.

¹⁶⁷ *STP*, p. 34. A recent example of the surface/depth erotics of dressing and undressing specifically invisible women is to be found on the ‘Femmes Invisible’ website and webring. The designer of the site is male, as appear to be the most of participants in the femme role-playing webring. The site’s creator, C. A. Thomas, provides a database of depictions of invisible woman in written texts, television and film. He is meticulous in his classification of each depiction of invisible women into two categories: ‘True Femmes Invisible (TFI)’, or ‘Fading Femmes Invisible (FFI)’. An invisible woman can only be consider a ‘TFI’ if her clothing remains visible. See ‘Femmes Invisible’ <<http://members.tripod.com/~invisiblegirls/main.html>> [accessed 25 June 2007].

In this alternate reading of 'Stella', Stella becomes visible again at Stedman's request, even though she thoroughly believes that she is sinning and defiling herself in doing so. Even Stedman admits that 'she really felt as if being seen was—she felt about it as a well-bred lady would about exposing more of her person than society permits' (p. 86). However, his realisation of this fact does not keep him from pressuring her to become visible again. He implies that Stella's refusal to become visible adversely affects his career advancement, as he feels it necessary to remove from his metropolitan appointment in China to a rural outpost. Voicing displeasure at Stella's attempts at expression of her invisible self, he claims:

If Stella had a retiring, shrinking nature, then I could hope to pass along the path of life without much difficulty—the less attention she attracted the better. But I found she was awfully fond of talking to Mrs. Cornish, Frank, C—[...]; to everyone the little chatterbox went on talking. How Michael Graham and she kept it up I can only conjecture. (p. 76)

Stedman's insistence on the necessity of removing to a rural location in order to keep Stella's unique optical status a secret is also a convenient excuse for him to isolate her from the outside world. Just as Graham was once Stella's sole—excepting household servants—human contact, after they are married, Stedman hopes to fulfil the same role as husband:

'Steddy, old man,' a voice seemed to whisper to me [...]. 'You've got to be father and mother, and school friends and young men and women, lover, and husband, and bridegroom to her. Your devil is Michael Graham, your heaven is Stella's perfected arms'. (p. 84)

Here again we see Stedman's desire to return Stella to visibility as sexual and territorial in nature. Once he has cast out the 'devil' of Graham's memory, Stedman will be able to inhabit the 'heaven' of Stella's metonymic arms. These arms will only become 'perfect' after he is able to see her. The first time he actually sees her in clothing, after recovering her from the fraudulent spiritualist, Stedman observes that 'she looked entrancingly pretty.

Those little gloves, how charming to put a ring on the finger beneath—if—. The veil, too, if the wind would blow it aside—yet, I sadly reflected, if it did I should only see the inside of a hat' (p. 71). Stella cannot be properly bound by the wedding band or unveiled for matrimonial consummation so long as she remains invisible. Jordanova examines the politics of veiling and unveiling, remarking:

We can imagine women being 'unveiled' in a way a man cannot be. Also suitable for unveiling are plaques, statues, indeed prized possessions [...]. Unveiling women is an idea that remains acceptable, since it fulfils masculine desire allied with fantasies of ownership and display. (p. 96)

The desire to veil and unveil, in such cases, is supported by the gender dichotomy that positions male as subject and female as Other against which the subject is able to define himself.

Stella even attempts to subvert Stedman's traditional notions of matrimonial ownership after they are married, only to be put down quickly by Stedman's reminder that the effects of invisibility are different for men. Stella explains that she would like Stedman to become invisible as well, because: "we shall be like one another. Won't that be nice?" (p. 82). Horrified at the prospect of becoming 'like' his wife, Stedman recoils from Stella when she offers him Graham's invisibility drug, commanding her to "take that rubbish away" (p. 82). Stedman's revulsion at the possibility of becoming invisible is rooted in the terror of being effeminised. 'The hegemonic heterosexual male body is [...] constructed in opposition to the openness of the female body', Potts writes, continuing:

The self-contained male body, with its exteriorised sexuality personified in the penis-self, repudiates the incoherence and interchangeability of the feminized body, whose orifices represent thresholds, margins of error, sites of weakness where outside may infiltrate inside, and vice versa. This 'male model' of sexuality is 'out there' [...]: the privileging of vision over other senses reifies the penis as an external organ. (p. 203)

The site of Stella's invisible female body confuses the boundary between inside and outside, and the threat of invisibility to Stedman's male body is therefore conflated with emasculation, or effeminsation, which in this case, are interchangeable. Stella's invisible status, as a threat to existing, patriarchal models of reality, is also a threat to the tradition of an epistemology based on visual observation within a specific frame of parameters such as the three-dimensionality of space.

Stedman reasserts the primacy of this dominant model of reality when Stella explains that her suggestion that he become invisible is rooted in the desire to make him happier and less aggressive. He angrily demands further explanation, and she attempts to persuade him: "Aren't you just a little bit—a little—violent sometimes?" (p. 82). Stedman repeats that Graham had designed the invisibility drug to correct flaws in women, not men. A similar cure for male bad behaviour would "prevent them from grabbing things and fighting", he explains (p. 83). Stedman also reminds Stella of her 'proper' role as his wife: "Whenever I get angry you make a sign to me, and I'll become calm—that is, *if I can see it*" (p. 82, emphasis added). The implication here is obvious; Stedman will remain violent and angry so long as Stella remains invisible. Within his frame of reality, Stella's invisible status and her ability to perform her role as a wife are mutually exclusive. In Stedman's understanding of their situation, Stella is now enframed within the institution of marriage, and therefore she must learn to behave as such.

Splintering the frames

Stella eventually gives in to Stedman's wishes and becomes visible. He is delighted and they return to England. Before they leave China, however, Stedman notes that, ironically, 'she received quite an ovation from the ladies of Hong-Kong. They

admired the complete way in which Stella had put down my monstrous disposition to jealousy' (p. 105). Although these women are not wrong in assuming that Stella veiled herself at her husband's insistence, they of course assume that the purpose of the veil was to prevent others from seeing her physical features. It was, however, to prevent others from apprehending that Stella had no features to be seen, and to render her body, at least partially visible. Her ability to show herself at the end of their stay in Hong Kong is thus somewhat simplistically interpreted as a sign of her liberation. One could interpret Stella's reclamation of her status as a visibly-embodied self in this way as well. However, Hinton's sense of irony makes it clear that this is not a straightforward case of inversion of female oppression, but rather, a more convoluted form of the double-bind placed upon middle-class Victorian women: Stella must surrender her own desire for self-determination by reclaiming her visible self in order to become a proper wife. It is telling that the main plot of this narrative ends with Stella giving birth to a male child; her role as reproducer is affirmed, and the production of an heir ensures the continuance of Stedman's name, and the status quo.¹⁶⁸

However, Hinton does not end the story here. Although order is restored in the ending of Stedman's version of the story as relayed by the unnamed narrator, there remains a conclusion that occurs outside of this frame. The conclusion is the unnamed narrator's own description of a conversation between himself and Stella. The narrator's sympathies appear to lie with Stella, and Stedman is not present at the conversation that provides the main content of this conclusion. This conversation casts a shadow of

¹⁶⁸ Another early story of invisibility by scientific means is J. Verene's *The Secret of Wilhelm Storitz*, which was written sometime after 1897, but not published until 1910. In this text, a female character, Myra, is made invisible by an evil scientist. She regains visibility after marrying and giving birth to her first child, also a son. See *The Secret of Wilhelm Storitz*, trans. by I. O. Evans (London: Panther Books, 1965).

ambiguity over the traditional 'happy' ending of Stedman's narrative. When the narrator observes to Stella that, "Well, it has ended happily!", her reply, though affirmative, is hesitant: "Yes, [Stedman] put everything to rights; but I feel as if I had forgotten something, as if we had all forgotten. [...] I cannot be quite happy often" (pp. 106-107). Stella realises that something is missing from her life, but she is unable to articulate anything but its absence. Her scope for action is thus limited by her inability to define her feeling of loss, and what she has lost. When the narrator asks her, "But what can you do?", she can only respond that: "That is the sadness. I don't know how to do what [Graham] wanted" (p. 107). Stella positions her problem as a loss of the ability to fulfil Graham's wishes. The cause of her dissatisfaction, which she is unable to articulate, appears to stem from the opposition of the desires of Stedman to those of Graham, and the assumption that it is Stella's role to fulfil the wishes of both men. In this tightly framed, either/or paradigm, Stella must inevitably feel guilty for 'betraying' one of the men who claim a 'right' to self-fulfilment through her.

The inconclusiveness of this ending allows for multiple imaginings of alternative endings, but it is difficult to conceive of a truly 'happy' ending for this narrative. The questions that Grosz asks in her work can be applied to 'Stella' in this context: 'How to think space outside the constraints of this neutral subject's corporeal projections? How to think desire beyond the limits of castration and thus beyond the phallus, the subject's inherent masculinity?' (*STP*, p. 5). Grosz's strategy, as she outlines it, is to create a 'space, both conceptual and material, for (perpetually) rethinking and questioning the presumptions of radicality' (p. 5). One hundred years previous to Grosz's writing, Hinton was also attempting to create a space, 'both conceptual and material', for questioning the

ways in which Western epistemology enframes both the possible and the 'real', what is imaginable and what is observable. The categories of imagination and science are highlighted in the text of 'Stella' in a manner that is informative of Hinton's *Scientific Romances* as a whole. Stella describes as imaginative the works of Dante and Raphael, in opposition to the work of Graham, which is scientific. 'To call something scientific,' as Jordanova observes, 'it to give it a specific kind of epistemological status' (p. 17). It is worthwhile, then, to examine the status that Stella bestows on Graham's work here, and the status that Hinton attempts to bestow upon his own '*Scientific Romances*'.

The “difference between science and imagination”

Here I take 'scientific' as a derivative of 'science'. Hinton appears to be using 'scientific' in its dominant, modern sense, relating it to the study of the phenomena of the material universe. Science, in this sense of the term, is responsible for the construction of conceptions in the mind based on the similarities and analogies observable in nature, making predictions and inferences, and finding verification of these correspondences within nature. However, Hinton observes that these 'conceptions themselves are essentially artificial' (*NET*, pp. 9-10). Hinton's understanding of scientific discourse is a constructivist one: he claims that 'what this comes to as a practical rule, is that we can only understand nature in virtue of our own activity; that there is no such thing as mere passive observation' (p. 3). Observation, the foundation of science, is thus an activity that is always enframed within the subjective. In voicing this opinion, Hinton challenges a prevalent—both then and now—assumption that Jane Flax describes as an Enlightenment fallacy, that 'reason and its "science"—philosophy—can provide an objective, reliable,

and universal foundation for knowledge'.¹⁶⁹ Hinton's obsession with the cube exercises is evidence of his desire to 'cast out' all such self-elements in knowledge, and possibly expressive of an urge to exorcise the influence of his father, as well. Even though it is probable that, explicitly, Hinton would claim otherwise, the result of Graham's experiments with Stella would indicate that such a project is doomed to failure. Again, it is here that Hinton encounters the limits of his own metatheory of the fourth dimension. The value of Hinton's hyperspace philosophy must be teased out of the interstices of the categories that Hinton seeks to juxtapose and contain within his texts: science and imagination, science and romance, objectivity and subjectivity.

What is the "difference between science and imagination" that Hinton posits? It is not possible to articulate it in precise terms. According to Hinton, 'with the greatest masters in the use of the imagination [...] we find the utmost vividness and definiteness of conception and—at any rate in the Latin races—the utmost precision of form. Each line of Dante, for instance, seems to call up a visible image and shape' (*SR* 6, p. 7). Compared with the 'essentially artificial' conceptions upon which scientific epistemology is based, it becomes impossible to differentiate between the aesthetic conceptions of 'the greatest masters' and those of science. Thus Stella's statement on science and imagination actually implies a symbiotic relationship, rather than a difference: it is science that renders Stella invisible, as a living, breathing reality, as opposed to a work of art. However, the original idea and desire to make her invisible results from Graham's imagination, the language of which is constructed by aesthetic influences such as Dante and Raphael. It is significant that Hinton cites 'the Latin races' as exemplars of imaginative faculties. By referring to his

¹⁶⁹ J. Flax, 'Postmodernism and Gender Relations in Feminist Theory', in *Feminism/Postmodernism*, ed. by L. J. Nicholson (New York and London: Routledge, 1990), pp. 39-62, p. 41.

own writings as 'romances', he appears to aspire to this highly imaginative status, of the ability to 'call up a visible image and shape' of the fourth dimension. To label a book a 'romance', at the time that Hinton was writing, was to identify it as a work of fiction, more specifically, as an inventive and extravagant tale representing either fantastic locations or fantastic characters, or both.¹⁷⁰ Thus the 'scientific romance' is not tied to rigorous verisimilitude as critics such as Suvin and Patrick Parrinder would have science fiction be.¹⁷¹ The 'scientific romance' is not simply realism displaced to a fantastic setting.

By combining science and romance, Hinton makes visible the limits of both imaginaries as framing devices for the human experience of 'reality'. 'Scientific romance' could also be read as 'factual fiction'. In Hinton's texts, 'fact' and 'fiction' are allowed to contaminate one another in such a way as to cast doubt on the possibility of the original purity of either. Like the awareness of discursive epistemology's roots in mythological epistemology that haunts Hinton's project, his work abounds with the kind of cross-contaminations that are an important part of any theory that seeks to question dominant paradigms, including feminist theory. In 'Stella', Hinton undermines the assumption of autonomous subjectivity as defined in opposition to the feminine Other. Stella is an impure subject; she is never entirely under the control of Graham, Stedman, or herself. Her scope for agency and imagination is always already limited by her location within the social and physical spheres, even when Graham attempts to dissolve that location. Thus

¹⁷⁰ See 'romance' in the *OED*, which supports my claims for the contemporary implications of this term. Northrop Frye's discussion of the prose romance, which he describes as 'intermediate between the novel, which deals with men [sic], and the myth, which deals with gods', has also informed my understanding of this term. *OED Online* <<http://www.oed.com>> [accessed 1 August 2005], and N. Frye, *The Anatomy of Criticism: Four Essays* (Princeton: Princeton University Press, 1957), pp. 303-314, p. 306.

¹⁷¹ Parrinder claims that Wells did the most to 'free' the genre of science fiction from its 'Romantic' heritage, claiming that, in Wells's fiction, that the plot, 'though backed up by a display of scientific patter, [...] once the premise is granted [...] its consequences are explored in a spirit of rigorous realism'. Parrinder, *Science Fiction: Its Criticism and Its Teaching* (London and New York: Methuen, 1980), p. 11.

Hinton exposes the 'romance', or fiction, of the invisible woman as liberated from the contamination of the self-as-object. Similarly, any attempt to read Stella's embrace of her visible self as a means of liberation is complicated by the ambiguous conclusion of the narrative. Stedman disguises his wish to reconstruct Stella as a receptacle for his own desires and self-definition by employing the emancipatory language of subjectivity. His version of liberation entails Stella's reclamation of her visible body, and her ability to proclaim her self as an autonomous subject. But, as Ferguson notes, an interpretivist discourse of liberation such as Stedman's 'challenges only the answers to the woman question, not its terms' (p. 2). Hinton appears to be conscious of these limitations with Stedman's framing of Stella; although he does not offer any answers, the ambiguous conclusion of the narrative intimates a sense of dissatisfaction with the terms of the question.

Hinton, like Stella, seems to be unable to fully articulate the problem of framing the question. For Stella, either option of 'liberation'—whether be it *from* the self or *through* the self—is an unfulfilling one. The inconclusive ending of this novella problematises the Enlightenment concept of liberation, and again the conflicted impulses of Hinton's project are exposed: undermining the discourse of liberation damages his own views on the emancipatory effects of realising the transcendent space of the fourth dimension.¹⁷² Hinton's hyperspace philosophy works, however, as an excellent unframing device, by proposing a fantastic space from which one may attempt multiple reimaginings of reality. It is not coincidental that later in his career, H. G. Wells would develop what

¹⁷² See *NET*, p. xiv, for a specific example of Hinton's view of the fourth dimension as an emancipatory space. However, Hinton's project is not as simple as one of spiritual or immaterial transcendence. He states clearly in multiple texts that this 'higher' realm of the fourth dimension of space is a material one. Hinton also eschews metaphysics in *NET*, reaffirming that his definition of transcendence is different from the spiritual one that implies some sort of separation from materiality, space or the text (p. 37).

Scheick describes as 'the technique of splintering the frame', as a four-dimensional aesthetic approach to the form of the novel (p. 25). By 'splintering the frame' of the novel, Wells illustrates one way in which Hinton's conception of the fourth dimension works to engender a realisation of the constructedness of all modes of representation. Here we can observe another reason why hyperspace philosophy had a broad range of appeal among Theosophists, socialists and Cubists: all were concerned with reframing religious, political and aesthetic discourses.

Thus while Hinton's 'Stella' is about the desire to unframe one's consciousness from epistemological constructions of nature, self and society, it also exposes the fictitiousness of this emancipatory project. The undercurrent of scepticism concerning escape throughout 'Stella' is likely connected to Hinton's own personal difficulties. There is a hint of regret in Hinton's observation that 'in affairs of life[,] experiments lead to disaster' (*NET*, p. 28). Here we can read Hinton, like Stella, as a victim of the cranky philosophies of James Hinton and Michael Graham. After the disaster of his bigamous marriage, Hinton appears to have resolved to limit the application of experimentation to speculative writing. Hinton's writing, like his life, is full of complications and contradictions that, appearing irresolvable, must somehow hang together. While there are flashes of ironic self-awareness throughout Hinton's work, I am not arguing that it is a perfect fit with the ironical model that Haraway, Ferguson and others propose in order to balance the need for reading and unframing within a theoretical approach that questions Western epistemology. It is difficult to determine the full extent of Hinton's self-awareness as an author. What is apparent is Hinton's desire to rethink the limits of representation. This desire is a unifying feature throughout his project, and he describes it

succinctly in his introduction to the 1895 edition of 'Stella': 'one line, one feature, of the landscape of the land to which these thoughts lead, and only one, has been touched upon. But there are many, and each explorer would probably select a different one'.¹⁷³ His project, circumscribed as it is by its own origin within the epistemology it seeks to challenge, is surprisingly similar to the feminist project of rethinking the ways in which sexuality, subjectivity and the concept of emancipation are framed by various dominant discourses. Both hyperspace philosophy and feminism seek to render visible, and perhaps even splinter, this epistemological frame.

Hinton's four-dimensional project, and his concern with the ways in which Western epistemology frames what is perceived to be possible, also influenced H. G. Wells. There are many similarities—thematic, theoretical and personal—between Hinton and Wells. Although a number of critics have discussed Wells's treatment of the fourth dimension in *The Time Machine: An Invention* (1895), it is in his 1897 novel, *The Invisible Man: A Grotesque Romance*, that he most directly borrows from Hinton.¹⁷⁴ Wells's story of an invisible man is often dismissed in literary criticism as one of his less polished scientific romances, with scholars describing its disjointed structuring and its ambiguous sympathies as flaws. Other Wells critics, conversely, reduce *The Invisible Man* to a

¹⁷³ C. H. Hinton, 'Preface', in *Stella and An Unfinished Communication: Studies of the Unseen* (London: Swan Sonnenschein, 1895), n. p. This preface was removed from the reprinted text of 'Stella', in the Second Series of the *Scientific Romances*.

¹⁷⁴ For discussions of Wells's treatment of the fourth dimension in *TTM*, see for example, B. Bergonzi, *The Early H. G. Wells: A Study of the Scientific Romances* (Manchester: Manchester University Press, 1961); P. Parrinder, *H. G. Wells* (Edinburgh: Oliver and Boyd, 1970) and S. Baxter, 'Wild Extravagant Theories: The Science of *The Time Machine*', in *Paper for Picocon 13*, Imperial College, 4 February 1996, paras. 1-82. <<http://www.donbrockway.com/Baxter2.htm>> [accessed 23 October 2004].

simplistic moral parable about the abuse of science and technology.¹⁷⁵ However, such interpretations are often based on a cursory and superficial treatment of this novel. In addition to identifying the influence of Hinton in my reading of *The Invisible Man*, I will argue that this text is an early indicator of Wells's self-conscious experimentation with the form of the novel, which Scheick calls a 'four-dimensional aesthetic'. Before turning to examine the structure of *The Invisible Man*, and its relation to 'Stella', it is instructive to examine an important technological discovery that distinguishes Well's treatment of invisibility from Hinton's.

X-Rays and the invisible

During the second half of the nineteenth century, the invisible became foregrounded within popular and scientific consciousnesses, providing a conceptual gathering site for various concerns, including those expressed within Hinton's hyperspace philosophy. 'After the two laws of thermodynamics entered public awareness', Beer writes, 'the invisible seemed to make us simply receptors of its traffic. [...] By the 1850s, the invisible world might seem to be out of human control'.¹⁷⁶ Indeed, we have seen how in 'The Persian King', Hinton's invisible king manipulates all life in the valley. While Hinton explicitly celebrates the king as the personification of the altruistic absorption of energy so as to allow space for movement and life, there is also the disturbing implication that human agency is controlled by unseen and uncontrollable forces. It is not surprising

¹⁷⁵ This is the common assessment from Wells scholars who treat of *IM*. In criticism of Wells's early scientific romances, this text is typically given less attention than *TMM*, *The Island of Doctor Moreau* and *The War of the Worlds*. See Bergonzi in particular, who claims that 'Griffin's punishment must be seen as a rebuke for the pretensions of science' (p. 120). For a more recent example of this sort of reading of *IM*, see, R. Sirabian, 'The Conception of Science in Wells's *The Invisible Man*', in *Papers on Language and Literature* 37 (2001): 382-403.

¹⁷⁶ G. Beer, "'Authentic Tidings of Invisible Things": Vision and the Invisible in the Later Nineteenth Century', in *Vision in Context: Historical and Contemporary Perspectives on Sight*, ed. by T. Brennan and M. Jay (New York and London: Routledge, 1996), pp. 85-98, p. 87.

then, as Beer observes, that ‘the invisible became a site of debate and perturbation for later-nineteenth-century people. Tussles developed for the control of meaning relating to that which is invisible: tussles between scientists and spiritualists, materialists and Christians’ (p. 85). In addition to theological and epistemological debates, this rise of interest in the invisible also had social and political ramifications. Perhaps the major contributing factor to the excitement and contention surrounding the invisible, however, was the discovery of X-rays at the end of 1895.

In December of 1895, Wilhelm Conrad Röntgen published a paper titled ‘Über eine neue Art von Strahlen’, in the *Proceedings of the Würzburg Physical Medical Society*.¹⁷⁷ In this paper he announced his discovery of X-rays, and he sent copies, along with initial X-ray photographs, to a number of recognised physicists in Germany, France and England for evaluation.¹⁷⁸ These photographs were leaked to the editor of the *Vienna Presse*, who, according to Röntgen’s biographer, Otto Glasser, ‘lost no time in exploiting the enormous news value’ of breaking the first reports of this discovery (p. 59). The *Presse* report appeared on 5 January 1896, and by the following day a London *Daily Chronicle* correspondent in Vienna had wired the news to England (p. 59). Ten days later, a brief paragraph and copies of Röntgen’s original X-ray images appeared in *Nature*:

Prof. W. C. Röntgen, Professor of Physics in Würzburg University, is reported to have discovered that a number of substances which are opaque to visible rays of light, are transparent to certain waves capable of affecting a photographic plate. It is alleged that he has been able to utilise his discovery to photograph metals enclosed in wooden or woollen coverings, and has succeeded in obtaining pictures showing only the bones of living persons.¹⁷⁹

Thus began the barrage of letters, articles, X-ray images and book notices on the newly discovered rays within the pages of *Nature*. Such a response is representative, as

¹⁷⁷ The English title is ‘On a New Kind of Ray’.

¹⁷⁸ O. Glasser, *Dr. W. C. Röntgen*, 2nd edn. (Springfield, IL: Charles C. Thomas, 1958), p. 54.

¹⁷⁹ Anon., *Nature* 53 (January 16 1896): 253.

Henderson observes: 'During the year 1896, more than fifty books and pamphlets and well over a thousand papers were published on the subject of x rays'.¹⁸⁰ Even though this was not the first instance of a discovery involving invisible light rays that could penetrate material objects that appear opaque under visible light, Röntgen's rays were the first to capture the popular imagination on such a large scale.¹⁸¹ His examples of X-ray photographic images of the human body attracted the most attention, and many photography enthusiasts treated X-ray imaging as a natural extension of their own field. Indeed, Glasser writes that 'it was not odd, although it had not occurred to Röntgen, that the use of the rays in photography had been largely responsible for the immediate and excited public response' (p. 58).

Röntgen's choice of the human body as one of the first subjects for X-ray photography also generated broad popular interest in the discovery. Early in 1896, a contributor to *The Nineteenth Century* observed:

The wonderful photographs of the bones within the living human body obtained by the Würzburg professor [...], as well as the mysterious character itself of 'invisible rays of light which reveal things concealed from the human eye,' have certainly contributed a great deal to render the discovery so widely popular.¹⁸²

¹⁸⁰ L. D. Henderson, 'X Rays and the Quest for Invisible Reality in the Art of Kupka, Duchamp, and the Cubists', in *Art Journal* 47.4 (1988): 323-340, 324.

¹⁸¹ In an article that immediately succeeds the English translation of Röntgen's paper in *Nature*, a contributor to that journal remarks that 'the discovery [of X-rays] does not appear, however, to be entirely novel, as it was noted by Hertz that metal films are transparent to kathode [sic] rays [...], and in Lenard's researches, published about two years ago, it is distinctly pointed out that such rays will produce photographic impressions'. See A. A. C. Swinton, 'Professor Röntgen's Discovery', in *Nature* 53 (January 23, 1896): 276-277, 276. In the twentieth century, credit for the discovery of X-rays became a contentious political issue. Lenard was a leading scientist during the Nazi regime, and in published writings as well as interviews, he repeatedly denigrated the work of Röntgen—who was Jewish—claiming for himself priority in the discovery of X-rays. See R. F. Mould, *A History of X-Rays and Radium with a Chapter on Radiation Units: 1895-1937* (London: I. P. C. Business Press, 1980), p. 1. Mould notes, however, that a letter from Lenard to Röntgen, found in Röntgen's papers after his death, contradicts Lenard's own Nazi-era claims. The letter from 21 May 1897, Mould observes, contains Lenard's statement that "'because your great discovery caused such swift attention in the farthest circles my modest work also came into the limelight, which was of particular luck for me'" (p. 1).

¹⁸² Anon., 'Recent Science. Röntgen's Rays', in *The Nineteenth Century* 39 (March 1896): 416-425, 416.

Another contributing factor to popular interest in Röntgen's discovery was the relative accessibility of the equipment needed to generate X-rays.¹⁸³ Here again we see the fortuitous consequences of Röntgen's handling of his discovery: Glasser notes that 'that reasonably priced x-ray equipment was so quickly available was in no small part due to Röntgen's refusal to restrict the development of his discovery in any way' by claiming intellectual or commercial copyright (p. 89). The proliferation of X-ray images and the fast pace of development in X-ray technology is apparent from the correspondence pages of *Nature* from 1896, which are dotted with contributions from enthusiasts who passed along photographs clipped from foreign journals and submitted the results of their own amateur experimentation. One example, which is titled, 'A contribution to the new photography', offers an X-ray image of the human hand. 'It will be seen', the contributor notes, 'that the flesh of the hand is very nearly transparent [...] while the bones [...] are practically opaque'.¹⁸⁴ The figure of the skeletal hand is a central motif in early X-ray photography and writing on the subject. Glasser also observes this trend, claiming that 'unquestionably except for the many pictures of hands made quickly after [Röntgen's] communication was published, [...] the discovery might have been consigned for some time to the relative oblivion of the physical laboratory' (p. 55). Over twenty years following the discovery, Thomas Mann depicts the sense of uncanny fascination that such images inspired in the early days of X-ray imaging:

Hans Castorp saw, precisely what he must have expected, but what it is hardly permitted man to see, and what he had never thought it would be vouchsafed him to see: he looked into his own grave. The process of decay was forestalled by the powers of the light-ray, the flesh in which he walked disintegrated, annihilated, dissolved in vacant mist, and there within it was the finely turned skeleton

¹⁸³ See the note in *Nature* (February 20, 1896): 308, where the contributor writes that 'Wm. Wallace and H. C. Pocklington in the Physical Laboratory of the Leeds Central Higher Grade School' obtained X-ray photographs using 'a cheap incandescent lamp of low candle-power [...] in place of a Crookes' tube'.

¹⁸⁴ W. J. Lockyer, 'A contribution to the new photography', in *Nature* 53 (February 6, 1896): 324.

of his own hand, the seal ring he had inherited from his grandfather hanging loose and black on the joint of his ring-finger. [...] He gazed at this familiar part of his own body, and for the first time in his life he understood that he would die.¹⁸⁵

The unsettling feeling engendered here is perhaps best described in the language of the uncanny: the X-rays subvert not only traditional notions of interior and exterior space, thus instigating a 'return of the repressed', but also, by showing the body prematurely stripped bare of its most perishable tissues, they confuse the boundary between the living and the dead.¹⁸⁶

As well as their shocking visual uncanniness, the images produced by X-rays dramatically confront the observer with disturbing epistemological and ontological questions. In re-examining contemporary sources, we are better able to, as Henderson phrases it, 'fathom the enormous impact of these invisible rays which clearly established the inadequacy of human sense perception and raised fundamental questions about the nature of matter itself' ('X Rays', 324). Both the reliability of empirical observation and the stable nature of matter are thrown into crisis by the invisible, transgressive light rays. In relation to the discovery, the contributor to *The Nineteenth Century* article cited above reminds readers that 'our eye is but a very imperfect instrument, which is not affected by most of the vibrations of which a beam of light is composed', continuing on to similarly

¹⁸⁵ T. Mann, *The Magic Mountain*, trans. by H. T. Lowe-Porter (London: Vintage, 1999), pp. 218-219. This text was originally published in 1924 and first translated into English in 1927. See Henderson, 'X Rays', who refers to this text as well (325). Similarly, Stephen Kern quotes this passage in *The Culture of Space and Time 1880-1918* (Cambridge, MA: Harvard University Press, 2001), p. 185.

¹⁸⁶ S. Freud, 'Repression' (1915), in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, Vol. XIV, trans. J. Strachey (London: Hogarth Press, 1957), pp. 143-158, p. 154, emphasis removed. In his later essay, 'The Uncanny', Freud remarks that the 'uncanny is in reality nothing new or alien, but something which is familiar and old-established in the mind and which has become alienated from it only through a process of repression' (pp. 363-364). The 'doubling' effect of the X-ray image is particularly apparent in the scene from Mann's novel. Medical technology, 'from having been an assurance of the hope of 'immortality', here becomes 'the uncanny harbinger of death'. See 'The Uncanny', in *The Penguin Freud Library, Volume XIV: Art and Literature*, trans. J. Strachey (London: Penguin, 1990), pp. 339-376, p. 357. The operator of the X-ray machine interrupts Castorp's musings here with the remark: "'Spooky, what? Yes, there's something definitely spooky about it'" (p. 219).

draw attention to the limitations of the human ear (416). Indeed, in a letter to the editor of *Nature*, the respected physicist Arthur Schuster remarks that ‘Prof. Röntgen’s remarkable discovery materially affects our views concerning the relations between ether and matter, [...] [X-rays] seem to upset all of one’s notions of the laws of nature’.¹⁸⁷ Even though rendering previously invisible, internal structures of the human body visible is one way that science can assert control over the invisible world which, as Beer notes, ‘seems to make us receptors of its traffic’, such visually dramatic X-ray images also ‘suggest how much lay beyond [science’s] powers and its focus’ (“Invisible Tidings”, pp, 87, 91).

Considering the fantastic nature of these newly discovered rays, and their public reception, it is possible to understand the excitement that the discovery generated within not only scientific, but philosophical, occultist and artistic circles as well. The interests of these various groups often overlapped, and as Henderson observes, ‘like the fourth dimension, x rays provided an area where science and occultism could readily meet’ (‘X Rays’, 326). While this connection between X-rays and hyperspace philosophy might at first seem tenuous, upon closer inspection, Tom Gibbons’s claim that ‘X-rays [...], and their contribution to the anti-materialistic millenarian synthesis, appear largely responsible for the continuous excitement about the Fourth Dimension among general public and avant-garde painters alike’ at the turn of the century, appears to be accurate (‘Cubism’, 140). To better understand the relevance of the discovery of X-rays for hyperspace philosophy, it is instructive to return to Hinton’s first romance, ‘What is the Fourth Dimension’:

A being in three dimensions, looking down on a [two-dimensional] square, sees each part of it extended before him, and can touch each part without having to pass through the surrounding parts,

¹⁸⁷ A. Schuster, ‘Letters to the Editor. On Röntgen’s Rays’, in *Nature* 53 (January 23, 1896): 268.

for he can go from above, while surrounding parts surround the part he touches only in one plane. *So a being in four dimensions could look at [...] every part of a solid figure.* (p. 13, emphasis added)

Such 'four-dimensional vision' can be read as analogous to the images produced by X-ray photography. It is even possible to find an analogy for the medical applications of X-ray imaging in the 'sexual inversion' anecdote from 'A Plane World'. In addition to returning to two-dimensional space with 'male' sex characteristics, Mulier, due to her excursion in the third dimension, also 'manifested a strange knowledge of the internal anatomy of the race, and most of their medical knowledge dates from her' (SR 3, p. 147). Although written and published a decade before the discovery of X-rays, Hinton's speculations concerning the fourth dimension appear to anticipate the scientific 'verification' of Röntgen's work.

Hinton never explicitly links X-rays with the fourth dimension; however, a number of later hyperspace philosophers make this connection. Bragdon claims that the powers of X-rays are analogous to 'that clairvoyance which consists in the ability to perceive not along the superficies of things as ordinary vision perceives them' (FDV, p. 57). Similarly, Gibbons notes that 'with the evidence of X-rays it could be regarded as even more scientifically respectable to believe in the demonstrable existence of a condition of "four-dimensional vision" which rendered material objects transparent' (140). Thus, it was not just self-identified Theosophists such as Bragdon who were appropriating the scientific legitimacy offered by the X-rays in explaining traditionally occultist phenomena: 'A number of medical men of the period saw in the new rays validation of the claims of "somnambulists" (i.e. subjects in a state of clairvoyant hypnotic trance) that they could see through material objects' (140). In her study of the subject, Nancy Knight makes a similar observation, citing an issue of the *Journal of the American Medical Association* from

1896, noting an Italian medical practitioner who ‘was widely quoted as suggesting that spiritualists who claimed to see through opaque matter might have retinas “sensitive to the x-rays”’.¹⁸⁸ Once the fantastic nature of the action and the images produced by X-rays was revealed to and accepted by the public, Knight writes, ‘it must have been extremely difficult to distinguish the absurd and improbable from the realistic and verifiable’ (p. 21).

However, Röntgen’s fantastic discovery was not entirely without precedent. Many contemporary British journals were quick to note that the discovery of X-rays was preceded by similar experiments and findings in the work of scientists such as Heinrich Hertz, Philipp Lenard and William Crookes. In 1892, Hertz announced that thin sheets of metal could be rendered transparent by cathode rays. His assistant, Lenard, continued experimenting with cathode rays, and in 1894 he published a paper that, among other findings, revealed that cathode rays were capable of ‘photographic action of up to a distance of 8cm’.¹⁸⁹ However, perhaps most important of these precursors to Röntgen’s discovery, for my reading of ‘Stella’, is the work of Crookes. Crookes had a fascinatingly variegated scientific career that was launched properly in 1861 with his discovery of the element thallium. His interests ranged across the fields of physics, chemistry, metallurgy, photography and spiritualism. According to historian Janet Oppenheim, Crookes had ‘an influential voice in English chemical circles’: his mainstream scientific work was so respected that he was elected Fellow of the Royal Society in 1863 and he received a knighthood in 1897.¹⁹⁰ The 1870s, however, were a damaging decade for Crookes; in

¹⁸⁸ Knight, “‘The New Light’: X Rays and Medical Futurism”, in *Imagining Tomorrow: History, Technology, and the American Future*, ed. by J. J. Corn (Cambridge, MA: MIT Press, 1986), pp. 10-34, p. 18.

¹⁸⁹ F. Freund, ‘Lenard’s Share in the Discovery of X Rays’, in *The British Journal of Radiology* 19 (1946): 131-132, 131.

¹⁹⁰ J. Oppenheim, *The Other World: Spiritualism and Psychical Research in England, 1850-1914* (Cambridge: Cambridge University Press, 1985), p. 338. See also W. H. Brock, ‘Crookes, Sir William

addition to his scandalous involvement with the fraudulent spiritualist medium, Florence Cook, he also became convinced that he had discovered a 'Fourth state of Matter'.¹⁹¹

Throughout the 1870s, Crookes repeatedly referred to this 'Fourth state of Matter', claiming that it is in 'a condition as far removed from the state of a gas as a gas is from a liquid'.¹⁹² There are obvious similarities between Crookes's analogical reasoning used by Hinton in his hyperspace philosophy. Hinton read Crookes, and his theory of the fourth state of matter clearly influenced 'What is the Fourth Dimension', which was originally published in 1880. In a paper given by Crookes in 1879, he explains that 'between the gaseous and the ultra-gaseous state here can be traced no sharp boundary; the one merges imperceptibly into the other'.¹⁹³ In 'What is the Fourth Dimension', Hinton cites Crookes, noting that

it is but lately that a physicist has succeeded in showing that there is no such arbitrary distinction among gases. Recently again the question has been raised 'Is there not a fourth state of matter?' Solid, liquid, and gaseous states are known. Mr. Crookes attempts to demonstrate the existence of a state differing from all of these. (p. 4)

Throughout Hinton's first romance he draws on Crookes, employing the same brand of analogical reasoning as described by Crookes's 1879 paper: "It is true that we cannot see or handle matter in this novel phase [of the fourth state of matter]. Nor can human[s] [...] penetrate into regions where such ultra-gaseous matter may be supposed to exist.

(1832-1919)', in *The Oxford Dictionary of National Biography Online* <<http://www.oxforddnb.com>> [accessed 7 March 2005], pp. 1-6, pp. 2-3. Crookes received numerous other high honours as well.

¹⁹¹ On Crookes and Cook, see Oppenheim, pp. 340-354, and T. Hall, *The Spiritualists: The Story of Florence Cook and William Crookes* (New York: Helix Press, 1963). Of the two hypotheses concerning Crookes's support of Cook, Hall argues that Crookes may have been a conscious participant in the hoax, likely influenced because of a sexual affair between the two. Oppenheim offers evidence to the contrary, speculating that Crookes may have been duped by Cook.

¹⁹² W. Crookes, 'On Radiant Matter. A Lecture Delivered to the British Association for the Advancement of Science, at Sheffield, Friday, August 22, 1879', p. 5. Apparently, Crookes had made nearly exactly the same statement as early as 1874, and again in 1876. See R. K. DeKosky, 'William Crookes and the Fourth State of Matter', in *Isis* 67 (1976): 36-60, 43.

¹⁹³ W. Crookes, 'Molecular Physics in High Vacua', Lecture delivered 4 April 1879, *Proceedings of the Royal Institution of Great Britain* 9 (1879): 158, quoted in J. Oppenheim, p. 354.

Nevertheless, we are able to observe it and experiment on it, legitimately arguing from the seen to the unseen”¹⁹⁴ Using the visible to construct models of the invisible is also Hinton’s methodology, as he explains in ‘What is the Fourth Dimension’, expanding speculation via analogy from the imaginable to the unimaginable, thus allowing one to ‘discuss and draw perfectly legitimate conclusions with regard to unimaginable things’ (p. 31).

Crookes was also aware of hyperspace philosophy. Speaking of his experiments in psychical research, he wrote of the issue to fellow scientist and psychical researcher, Oliver Lodge, speculating that perhaps invisible or spiritual beings ‘reside somewhere in “4-dimensional space”’ (Oppenheim, p. 351). Crookes was additionally connected to X-ray research: Brock notes that ‘Crookes’s success in producing a vacuum of the order of one millionth of an atmosphere [...] made possible the discovery of X-rays’.¹⁹⁵ Glasser also claims that Crookes’s experiments with cathode rays, photography and spectral phenomena played a part in inspiring Röntgen to devote his energies to the same area of research, resulting in his discovery of X-rays (pp. 34-35). In Röntgen’s announcement of his discovery he mentions using a ‘Crookes tube’, which is the vacuum tube described above. Glasser also notes that Crookes ‘had freak experiences with photographic plates [...] in experiments with cathode rays’; however, his research interests lay elsewhere and ‘until Röntgen’s discovery the phenomena remained unexplained’ (p. 84). Oppenheim speculates that Crookes’s ‘commitment to the concept of matter in a fourth state may well have prevented [him] from discovering X-rays [...] himself’ (p. 354). Thus, while Crookes

¹⁹⁴ Quoted in Oppenheim, p. 354. Crookes’s statement anticipates Henry James’s claim that it is the role of the writer to develop ‘the power to guess the unseen from the seen’ in his 1884 essay, ‘The Art of Fiction’, in F. O. Matthiessen, *The James Family, Including Selections from the Writings of Henry James, Senior, William, Henry, & Alice James* (New York: Alfred A. Knopf, 1961), pp. 353-370, p.360.

¹⁹⁵ *Oxford Dictionary of National Biography Online*, p. 4.

cannot claim credit for the discovery of X-rays, his experimentation in the 1870s and 80s certainly hinted at the possibility of their existence.

The seemingly fantastic implications of Crookes's research in physics, chemistry and optics also influenced Hinton's conceptualisation of invisibility in 'Stella'. By the time that 'Stella' was published, 1895, Hinton had left Britain, lived in Japan, and finally settled in the United States.¹⁹⁶ These travels likely influenced the writing of 'Stella' as well: as Stedman travels throughout the United States in search of Stella when she is kidnapped, and they both travel in the Far East. Written and published before Röntgen's announcement of his discovery, 'Stella' was originally paired with another novella, 'An Unfinished Communication', and published as a single volume bearing the subtitle: *Studies of the Unseen*. 'Stella' appears to be the earliest example of fiction in which a human being is rendered invisible through a scientific process.¹⁹⁷ Hinton's 'scientific' explanation of Stella's invisibility illustrates his familiarity with the experimentation of Crookes and others. Upon examining the remains of Michael Graham's laboratory, Stedman observes that he must have been experimenting in a field that he describes as 'the border land between chemistry and physics' (p. 17). In this laboratory, Stedman also remarks that he encounters 'one of the finest spectroscopes I had ever seen' (p. 17).

¹⁹⁶ Shortly after his bigamy conviction, Hinton and Mary Boole Hinton moved to Japan, where he taught at the Victoria Public School in Yokohama. Hinton and his family then moved to the United States in 1893, where he remained for the rest of his life. See Ballard, pp. 43, 46 and 49. Ballard gives the year of Hinton's arrival in the United States as 1892, which is based on the fact that the first extant letter of his correspondence with William James is dated 1892. In this letter, Hinton mentions that he has recently landed in America. I give 1893 as the date of his family's immigration to the United States based on the ship manifest from the *SS Tacoma*, which arrived in Tacoma, Washington, from Yokohama, Japan, on 16 August 1893. The manifest lists Hinton, his wife and four children among its passengers. This information is provided by the 'Immigrant Ships Transcribers Guild', <<http://immigrantships.net/v2/1800v2/tacoma18930816.html>> [accessed 27 June 2007].

¹⁹⁷ Bergonzi claims that 'Wells was probably the first writer to combine the traditional theme [of invisibility] with a sober and plausible-seeming explanation drawn from contemporary physics and chemistry' (pp. 113-114). However, *The Invisible Man* was composed and published after Röntgen's announcement of his discovery, and therefore after the publication of 'Stella', as well. For a rare example of an acknowledgement of Hinton's precedence in this matter, see B. Stableford, 'Invisible People', in *Vector* 196 (1996): 5-6.

Crookes used the spectroscope—an optical instrument invented in 1859—in the investigations leading up to his discovery of thallium in 1861, and in later experiments as well. Stella is rendered transparent by Graham’s discovery of a means to “alter the coefficient of the refraction of the body”, making her coefficient “equal to unity” (p. 35). Aside from this vague discussion of optics and chemistry that is clearly related to the area of Crooke’s work, Hinton also includes a character in ‘Stella’ who bears a striking resemblance to Crookes himself. When the fraudulent spiritualist kidnaps Stella, it is a man referred to as ‘C—’ who inadvertently leads to Stedman’s discovery of her whereabouts.¹⁹⁸ Stedman’s friend, the scientist Frank Cornish describes ‘C—’ as “the celebrated chemist” (p. 57). Like Crookes, who staked his scientific reputation on the legitimacy of the medium Cook, Hinton’s ‘C—’ “stated that he had been present at many *séances* given” in the house of the spiritualist who has kidnapped Stella. Fooled by the phenomena caused by the invisible Stella, ‘C—’ claims “that personally he felt sure there was no imposture” on the part of the medium (pp. 57-58). The means that ‘C—’ employs to confirm the veracity of the medium are identical to Crookes’s: he uses a galvanometer, an apparatus made popular by Crookes in his investigations of spiritualist phenomena. In the *Spiritualist Newspaper*, Crookes writes of his usage of this device, expressing “the advantage of *absolute certainty*, since, if the medium has her hands or body removed from the wires [...] the galvanometer outside lets the spectators know the moment the circuit is broken”.¹⁹⁹ ‘C—’ employs the same tactics when testing the phenomena produced by the invisible Stella and claimed by the medium as supernatural: “I searched the room very

¹⁹⁸ This is the only instance throughout Hinton’s *oeuvre* where he employs the convention of substituting a character’s name with an initial and a dash.

¹⁹⁹ W. Crookes, ‘A Scientific Examination of Mrs. Fay’s Mediumship’, in *Spiritualist Newspaper* 12 (March 1875): n. p., quoted in Oppenheim, p. 346, original emphasis.

carefully””, ‘C—’ recounts, ““then I placed wires over [the medium], so that the slightest movement would break contact and give an alarm”” (p. 63). Intellectually, ‘C—’ also resembles Crookes:

There was an air of openness to impression about [‘C—’] which makes him seem unlike most other scientific men [...]. One of his great discoveries was made while trying to find out if bodies lost weight when heated—a question which is generally supposed to be settled. [...] You had only to suggest a novel experiment to C— to make him your firm friend. (p. 61)

Similarly, Oppenheim notes that ‘having launched his career with the discovery of an element [Crookes] was ever on the lookout for similar achievements and sometimes jumped too readily to novel conclusions’ (p. 353). Finally, it seems conclusive that Hinton is referring to Crookes in ‘Stella’, considering that, as Brock observes, ‘believing, erroneously, that he had uncovered a relationship between gravity and heat, [Crookes] was led to the phenomenon’ that he believed to be the result of the fourth state of matter, or, as he sometimes called it, ‘Radiant Matter’ (pp. 3-4). Hinton’s direct reference to Crookes’s ‘trying to find out if bodies lost weight when heated’, as well as the fact that Crookes believed in the existence of invisible, intelligent beings who may only *claim* to be the spirits of dead humans, confirms that Hinton had Crookes and his work in mind when he was writing ‘Stella’.

H. G. Wells and Hinton

That Wells was in turn influenced by Hinton’s writing when he was composing *The Invisible Man* is also apparent, upon examination of this text. Written after the discovery of X-rays, Wells’s novel also contains greater emphasis on the visual uncanniness of the transparent human body, and the process of becoming invisible. Indeed, Hinton’s publication of ‘Stella’ seems to have been a case of extraordinarily bad timing; had he been able to incorporate X-ray imagery into the text, the sales of ‘Stella’,

given the widespread interest in Röntgen's discovery, might have been much higher.²⁰⁰ Being re-released within the later Second Series of the more popularly selling *Scientific Romances* did not help matters as the confused dating and reprinting of the Second Series would have likely positioned Hinton's story as an imitation of Wells's romance. However, as I will illustrate, the situation is actually reversed. In exploring the ways in which Wells's text appears to be almost 'answering' Hinton's, we can better understand the unusual structuring and ambiguous moral tone of *The Invisible Man*, which has led many critics to dismiss this text. Later in this section, I also examine Wells's technique of splintering the frame of the novel, thus further elucidating both the style of *The Invisible Man*, and the influence of Hinton's hyperspace philosophy upon Wells's political and aesthetic concerns.

While no Hinton scholar has found direct evidence of Wells's reading of Hinton's texts, buried in a footnote of his study of Karl Pearson, Theodore M. Porter remarks that the copy of the First Series of *Scientific Romances* held at the library of the University of California in Los Angeles was originally owned by Wells.²⁰¹ Wells makes no mention of Hinton in his two volume *Experiment in Autobiography*, although he remarks of hyperspace philosophy: 'I never heard of a fourth dimension until 1884 or thereabout. Then I thought it was a witticism'.²⁰² This would place his introduction to the notion of a spatial fourth dimension exactly at the time that both Hinton and Abbott were publishing.

²⁰⁰ William Sonnenschein wrote to Hinton on 10 March 1896 that for the 1895 edition of 'Stella', 'sales to date—in spit of our pushing the book as much as we can—are in England 122; to America [...] 250'. *Records of George Allen & Unwin, Ltd.*, MSS 382, Book 27, p. 956.

²⁰¹ Porter writes that 'the copy I used of the *Scientific Romances*, held in the UCLA libraries, was owned originally by H. G. Wells. The text is unmarked' (p. 194, note 39). In his introduction to the *Scientific Romances*, Webb claims that 'the notion of the Unlearner [in 'An Unfinished Communication] provided the basis of a famous story by H. G. Wells' (p. v). Unfortunately Webb does not cite the sources for much of his information on Hinton. At present, the 'famous story' by Wells to which Webb refers remains unidentified.

²⁰² H. G. Wells, *Experiment in Autobiography: Discoveries and Conclusions of a Very Ordinary Brain, Since 1866* (London: Victor Gollancz and Cresset Press, 1934), Vol. I, p. 96. I will refer to this text as *EA*.

There is a hint of ‘anxiety of influence’ in Wells’s failure to name Hinton anywhere throughout his writing, and there are a number of parallels between the sexual promiscuity and marital scandals of the two men. In 1893, Wells left his wife to live with another woman, Amy Catherine Robbins, later divorcing his first wife and marrying Robbins. Throughout his life, Wells was under much public scrutiny for other extramarital affairs, the most famous one being his decade-long relationship with Rebecca West. It is likely that, aside from protecting his claims to originality, Wells would have avoided giving his critics any opportunity to make even an implicit connection between his life and work with that of the shamed and exiled bigamist, Hinton. However, apparently Wells knew of Hinton’s *Scientific Romances*, and he described his own early stories as ‘scientific romances’ as well.

However, the case for Hinton’s influence on Wells is deeper than these biographical details. Hinton’s hyperspace philosophy underpins much of Wells’s writing; indeed, in *The Time Machine*, Wells’s Time Traveller can only take his journey through time because, as Hinton had explained fifteen years earlier: ‘the threads of existence [...] are not broken, nor is the shape which gave it origin altered in any way. It has simply passed on to a distance from the plane. Thus nothing which existed in the conscious life on the plane would cease’ (*SR 1*, p. 23). *The Time Machine* was not the only text in which Wells would describe ‘Time as the fourth dimension of Space’, in line with Hinton’s hyperspace philosophy (*TTM*, p. 5).

Speculations on the nature of the fourth dimension were certainly increasing in popularity in the 1880s, and Hinton’s work was an important factor in this rise in interest. Wells may have first encountered Hinton’s writing through his participation in the Student

Debating Society of the Royal College of Sciences at Kensington, when he was a student there.²⁰³ Another student, E. A. Hamilton-Gordon, gave a presentation on the fourth dimension, claiming the concept as his own. However, Hamilton-Gordon later admitted that he had seen Hinton's work as well.²⁰⁴ It is also possible that Wells encountered Hinton's work through the journal *Nature*, which favourably reviewed Hinton's writing in 1884 and 1885.²⁰⁵ The first review of Hinton's work in this journal, for the textbook, *Science Note-Book*, remarks:

The author has succeeded in bringing new ideas into simple and attractive form, which enables the youthful and inexperienced mind in a very short time to acquire a mathematical knowledge of space which is of much value in facilitating a subsequent thorough understanding of Euclid and of modern geometry. (51)

The topic of this textbook, of which no copies appear to be extant, was geometry, and it is probable that Hinton addressed the concept of the fourth dimension of space as well. It is possible that Wells may have encountered this textbook, as he was a science student at the time. Of course, we are again entering the realm of circumstantial, biographical speculation. Similarly, A. M. Bork speculates that a member of Wells's debating group

²⁰³ The Royal College is now known as Imperial College. In *EA*, Wells affirms that his first encounter with the concept of the fourth dimension was at the Debating Society: 'In the students' Debating Society [...] I heard about and laid hold of the idea of a four dimensional frame for a fresh apprehension of physical phenomena, which afterwards led me to send a paper, "The Universe Rigid," to the *Fortnightly Review*' (I, p. 214). Wells was also the editor of the *Science Schools Journal*, which published the paper from the debate on the fourth dimension. While it appears that Wells had just stepped down as editor immediately preceding the issue that printed the fourth dimension paper, he was still an avid supporter of the journal, and, according to his own recollections, its main contributor. See 'Editorial', in *Science Schools Journal* 5 (April 1887), and *EA*, I, p. 195.

²⁰⁴ See Hamilton-Gordon, 'The Fourth Dimension', in *Science Schools Journal* 5 (April 1887): 145-151. At the end of this article, which is a reprint of the paper he read at the Debating Society, Hamilton-Gordon notes: 'Since writing the above a pamphlet has been put into my hands entitled, "What is the Fourth Dimension", and to my disgust I find it is an almost exact counterpart of my theory, which I had imagined to be new and original. However, since the pamphlet bears the date of publication, 1887, and the lines of this paper were drawn up in 1886, the sin of purloining cannot be laid at my door' (151). Hinton's romance first appeared in 1880, in the *Dublin University Magazine*, and it was first published in pamphlet form in 1884. Hamilton-Gordon's tone is suspiciously defensive here. See Ballard, p. 144, note 82, who makes similar observations.

²⁰⁵ See K. Heun, 'Science Note-Book. By C. H. Hinton', in *Nature* (20 November 1884): 51-52, and the reviews of the *Scientific Romances*, previously cited.

may have been the respondent to Hinton's second review in *Nature*.²⁰⁶ This contributor, who signs his or her name as 'S.', wrote in response to the review of Hinton's first romance, answering the question, 'What is the Fourth Dimension[?]', with 'time-space'.²⁰⁷ Similarly, Steven Baxter draws attention to the resemblances in the imagery employed in the 'S.' letter and Wells's *The Time Machine*:

I contend, you can clearly see the influences of the *Nature* articles [...] and by S. [on *TTM*]. Recall the S. article: 'Let any man picture to himself the aggregate of his own bodily forms from birth to the present time, and he will have a clear idea of a sur-solid in time-space.' Compare that to Wells's succession of portraits. (para. 62)

The 'succession of portraits' in Wells to which Baxter refers is from *The Time Machine*:

"I have been at work on this geometry of Four Dimensions for some time", Wells's Time Traveller tells his dinner party, continuing: "For instance, here is a portrait of a man at eight years old, another at fifteen, another at seventeen, another at twenty-three, and so on. All these are evidently sections, as it were Three-Dimensional representations of his Four-Dimensional being" (*TTM*, pp. 4-5). Clearly, there are correspondences here between the discourse surrounding Hinton's hyperspace philosophy and the language and concepts in *The Time Machine*, and there are countless similar examples throughout Wells's *oeuvre*.

These parallels in language and conceptualisation could be simply due to the shared cultural context of the discourse of the fourth dimension. However, a more specific reference to Hinton's hyperspace philosophy occurs in Wells's 'A Note to the Reader' that precedes his text *A Modern Utopia* (1905). In this introduction, Wells complains of the kind of unsympathetic Stedman-esque reader who 'likes everything in hard, heavy lines,

²⁰⁶ A. M. Bork, 'The Fourth Dimension in Nineteenth-Century Physics', in *Isis* 55 (1964): 326-338, 330.

²⁰⁷ See 'S.', 'Four-Dimensional Space', in *Nature* (26 March 1885): 481

black and white, yes and no'.²⁰⁸ 'Mentally', Wells continues, the minds of such readers seem 'to be built upon an invincible assumption that the Spirit of Creation cannot count beyond two', and such a mind 'deals only in alternatives' (p. 310). Wells admits that he has forsaken trying to please such readers, making a brief allusion to what appear to be Hinton's elaborate cube exercises: 'Even if I present all my tri-clinic crystals as systems of cubes—! Indeed I felt it would not be worth doing' (p. 310). Wells's reference to 'tri-clinic crystals' here most likely refers to his development of the non-binary 'asymmetrical' fictional aesthetic that he would spend much of his career trying to elucidate.²⁰⁹ By the time *A Modern Utopia* was written and published, most of Hinton's writing was already in print, including the cube exercises in *A New Era of Thought* and *The Fourth Dimension*. To my knowledge, this is the most direct reference to Hinton that Wells ever made in print.

However, looking for explicit references to Hinton in Wells's work is not nearly as revealing as examining the elements of hyperspace philosophy that underpin his writing. I have already mentioned similarities in *The Time Machine*, a text that deals with the concept of the fourth dimension explicitly. Other texts from Wells's early phase of writing that contain elements of hyperspace philosophy are *The Wonderful Visit* (1895), 'The Remarkable Case of Davidson's Eyes' (1895), 'The Plattner Story' (1896), 'The Crystal

²⁰⁸ H. G. Wells, 'A Note to the Reader', in *Tono-Bungay and A Modern Utopia* (London: Odhams Press, n. d.), pp. 309-310, p. 310.

²⁰⁹ See 'triclinic' in the *OED Online*, which defines it as 'applied to that system of crystalline forms in which the three axes are unequal and obliquely inclined', or 'belonging to this system' [accessed 20 January 2005]. Thus, Wells seems to refer to a system of reasoning which is non-symmetrical, which is in line with his preference for the 'Gothic' form of the novel. See the authorial preface to *Tono-Bungay* in *The Works of H. G. Wells, Atlantic Edition*, Vol. XII, p. ix. Crystalline structures are also important for hyperspace philosophy. For examples contemporaneous with Hinton and Wells, see *The Fourth Dimension Simply Explained: A Collection of Essays Submitted in the Scientific American's Prize Competition* (1910), ed. by H. Manning (New York: Dover, 1960). For an updated example, see the work of twenty-first century hyperspace philosopher and artist, Tony Robbin, in *Shadows of Reality*.

Egg' (1897) and, of course, *The Invisible Man*. In addition to calling these writings scientific romances, Wells also titled a book of his short stories, collected in 1899, *Tales of Space and Time*. My primary concern at present, however, lies in exploring the ways that 'Stella' resonates throughout *The Invisible Man*, a text which appears to be attempting to 'answer' some of the implicit questions raised by Hinton, particularly concerning gender and society.

'Stella' and *The Invisible Man*

The most obvious similarity between these two texts is their use of a 'scientific' explanation for their titular characters' invisibility. Like Graham, Wells's invisible man, Griffin, is an interdisciplinary scientific researcher. "You know I dropped medicine and took up physics?" Griffin explains to a colleague, "*Light* fascinated me".²¹⁰ During the course of his researches, Griffin continues, "I found a general principle of pigments and refraction,—a formula, a geometrical expression involving four dimensions. [...] Even common mathematicians, do not know anything of what some general expression may mean to the student of molecular physics" (p. 63). Wells often explicitly champions non-linear thinking, as seen in the prefatory note to *A Modern Utopia*. However, considering the disastrous events that result from Griffin's discovery, a hint of anxiety concerning the crossing of disciplines creeps into the text here, similar to that I have illustrated as underlying treatments of the crossing over from analytical to descriptive geometry.

The explanation that Wells offers for Griffin's invisibility is very similar to the one offered by Hinton in 'Stella'. Stedman's friend, the scientist Cornish, illustrates how he has made a piece of flesh invisible: "by immersing it in a heavy oil of the same

²¹⁰ H. G. Wells, *The Invisible Man: A Grotesque Romance* (New York: Dover, 1992) Pearson edn., 1897, p. 63, original emphasis.

coefficient of refraction as flesh, and keeping it under the air-pump for a long time, I permeated the minute passages; the result is a substance invisible in the oil, but which looks like a piece of glass out of it” (*SR* 8, pp. 55-56). Griffin offers a simpler version of this experiment in his explanation of invisibility to a colleague, Dr Kemp: “oil white paper, fill up the interstices between the particles with oil so that there is no longer refraction or reflection except at the surfaces, and it becomes as transparent as glass” (*IM*, p. 65). Wells uses a similar argument to overcome an objection to the possibility of making a human being invisible given by Stedman in Hinton’s novella. After Cornish explains the process with the oil and the flesh, Stedman argues that because of the blood circulating in live tissues, “you could not treat a living person so” (*SR* 8, p. 56). Cornish removes this difficulty by explaining that “the blood owes its colour to salts of iron [...] all we have got to do is replace the iron by some element having colourless compounds” (p. 56). This is, admittedly, a scientifically dubious explanation, as is the one given by Wells. In Wells’s text, Griffin anticipates a similar objection from Kemp, stating: “You know the red colouring matter of the blood; it can be made white—colourless—and remain with all the functions it has now!” (*IM*, p. 66).²¹¹ Thus the ‘science’ that Wells employs mimics the ‘science’ of Hinton.

However, it is not simply the conceptual, ‘scientific patter’ that links these two texts.²¹² In Hinton’s story, Graham decides to make Stella invisible in order to bring out her latent—and as a woman, inherently ‘superior’—altruistic tendencies in support of his

²¹¹ Another difficulty of which Wells was acutely aware, and unable to overcome, is the fact that an invisible human would not be able to see out of invisible eyes. Hinton avoids this problem by making Stella’s eyes vaguely opaque. See Stableford, who highlights this technicality, in ‘Invisible People’, 5.

²¹² Wells writes that, when composing his scientific romances: ‘It occurred to me that instead of the usual interview with the devil or a magician, an ingenious use of scientific patter might with advantage be substituted’. See ‘Preface’, in *The Scientific Romances of H. G. Wells* (London: Victor Gollancz, 1933), pp. vii-x, p. viii.

proto-socialist philosophy of self-effacement. The idea that invisibility is a gender-specific remedy for selfishness is explicit throughout 'Stella'. Invisibility is not an appropriate solution for male bad behaviour, as Stedman reminds Stella, because, unlike female vanity, male imperfections arise from more vigorous urges: "grabbing things and fighting" (SR 8, p. 83). "Grabbing things and fighting" is an apt description of much of Griffin's behaviour in *The Invisible Man*. If self-effacement makes Stella a docile and altruistic individual, it turns Griffin—a loner with a disposition toward paranoia and megalomania—into a sociopath. Stella's lack of self-regard makes her, in Hinton's tale, an emblem of Graham's proto-socialist philosophy of 'being for others'. Conversely, Griffin's invisibility further isolates and frustrates him, pushing him to become the most extreme sort of individualist.²¹³ Kemp's description of Griffin inverts the language of Graham's philosophy:

'He is mad, [...] inhuman. He is pure selfishness. He thinks of nothing but his own advantage [...]. I have listened to such a story this morning of brutal self-seeking! [...] The man's become inhuman [...]. He has cut himself off from his kind'. (*IM*, pp. 92, 94)

Griffin, therefore, seems to be the antithesis of Stella. His reaction to his invisible status is a realisation of Stella's attempts to persuade Stedman to drink the invisibility drug.

At least a part of Stedman's outrage at Stella's request that he become invisible stems from the fact that in this situation he experiences—perhaps for the first time in his life—*self-doubt*:

Now, during my walks about [Hong Kong], I had occasionally seen the faces of some men I had known in London, who had come out to posts in the Cingalese civil service. They had not recognised me, and this I had put down to their not expecting to see me there. [...] But now it flashed upon me

²¹³ I refer to Wells's use of the term 'Individualism' to describe 'the cult', which is underpinned by the 'essential fallacy' of the rejection of the principle that 'liberty is a compromise between our own freedom of will and the wills of those with whom we come into contact'. See *A Modern Utopia*, p. 328. See also J. Batchelor, *H. G. Wells* (Cambridge: Cambridge University Press, 1985), who claims that 'Wells turns *The Invisible Man*—by force, as it were—into a novel about a terrorist' (p. 22).

that I might have been getting transparent all this while—that perhaps my face was a sort of mist. ‘Good Heavens, Stella!’ I exclaimed, ‘you haven’t been giving me any of that drink before, have you?’ (SR 8, p. 81)

Stella reassures him that she has not, and Stedman regains his composure. However, this moment of self-doubt, of uncertainty of his own physical appearance and its impression on others—specifically male onlookers—has an emasculating effect. In Graham’s reasoning, invisibility, or concern about visibility, is a feminine preserve. By rendering a male subject invisible, Wells creates a protagonist for whom the signifiers of physical appearance become, by necessity, an obsession. The sense of ambiguity surrounding Griffin exists not only in relation to his fantastical (lack of) appearance, but also to the extreme oppositions of what are traditionally viewed to be ‘masculine’ and ‘feminine’ traits that he exhibits. Griffin, like his namesake, is composed of two opposing parts, and it is his inability to reconcile these differences that causes him to violently self-destruct.²¹⁴

As an invisible *man*, Griffin is repeatedly emasculated. Aside from his new obsession with his physical appearance, Griffin also explains how his invisible status makes it nearly impossible to travel unaccompanied in public in London: “‘Every crossing was a danger, every passenger a thing to watch alertly. One man as I was about to pass him at the top of Bedford Street, turned upon me abruptly and came into me, sending me in the road and almost under the wheel of a passing hansom’” he complains (p. 34). As an outsider to physical norms and cultural expectations, Griffin is denied a sense of agency,

²¹⁴ The *OED Online* gives multiple definitions for ‘griffin’, all of which are instructive in reading *IM*. For my purposes here, however, I am using the first definition of the word, of a ‘griffin’, or a ‘gryphon’, which is a ‘fantastic creature’ composed of two different animals, usually the upper body of an eagle, and the lower parts of a lion [accessed 11 March 2005]. M. Hardin draws on the other *OED* definitions of ‘griffin’, with reference to race, noting that ‘in nineteenth-century Louisiana parlance, it is a person who is three-quarters white and one-quarter black; and it is a term used in India to refer to newcomers, especially white Westerners’. See ‘Ralph Ellison’s *Invisible Man*: Invisibility, Race, and Homoeroticism from Frederick Douglass to E. Lynn Harris’, in *Southern Literary Journal* 37.1 (2004): 96-120, 99. In this essay, Hardin draws out the connections between the texts of Wells and Ellison, observing that ‘there is an intriguing convergence of “passing,” miscegenation, and homoeroticism within the metaphor of invisibility’ (97).

similar to the kind of effacement experienced by the unescorted, 'fallen' Victorian woman. Perhaps most striking is Griffin's newly problematical relationship with food and the act of eating. He explains to Kemp that "I was fasting, for to eat, to fill myself with unassimilated matter, would be to become grotesquely visible again" (p. 82). Earlier I mentioned how Michie and others highlight an obsessive linking of food with female sexuality in nineteenth-century fiction, observing that Victorian heroines are rarely depicted in the act of eating. Similarly, Griffin must be careful of his eating practices. Aside from becoming 'grotesquely visible', Griffin is unable to eat in public even while wearing a costume, lest he reveal the gaping 'nothing' where his mouth should be. For Griffin, like Michie's Victorian heroine, 'eating is [...] something too personal to survive the public scrutiny of the dinner table' (Michie, p. 20). Griffin develops coping strategies similar to those of the 'modern anorectic', who, as Michie notes, feels 'shame associated with eating' so much that they will 'perform elaborate rituals to disguise the fact' that they are eating:²¹⁵ even when dining privately with Kemp, his sole confidant, Griffin demands a dressing gown, explaining that "I always like to get something about me before I eat [...] Queer fancy!" (IM, p. 57).

Dressing and 'painting'—also traditionally 'feminine' activities—similarly become obsessions for the invisible Griffin. He complains that he has "become a wrapped-up mystery, a swathed and bandaged caricature of a man!" (p. 86). Although he is able to 'pass' as visible when disguised in theatrical costume and make-up, Griffin's body, his physical self, remains insubstantial in comparison with the clothes that he wears. He is less a human being than a mystery for the other characters in the novel to unravel, like the women depicted in pre-Raphaelite paintings, where, as Michie observes, 'the fold

²¹⁵ Michie, p. 20.

of the shawls and the bonnet catch the light and reflect it back, concealing the body beneath' (p. 77). Writing specifically of D. G. Rossetti's *Found*, Michie notes how the clothing of the prostitute 'muffles her body until her clothes come to stand for herself' (p. 77). Similarly, the residents of the Sussex village where Griffin retires in disguise often refer to him not as a person, but rather as his clothing. The landlady of the inn where Griffin lodges, The Coach and Horses, views him as 'a brown gloved hand', 'inscrutable blue glasses' and 'a dripping hat brim' (*IM*, p. 2). This is the first account we are given of Griffin, and other characters similarly describe him as 'the stranger, muffled in hat, coat, gloves, and wrapper' (p. 9). Even Kemp looks at him as 'the devouring dressing gown' in his study (p. 58). Having wished to become invisible to escape the problems engendered by his lower social status and to engage in anti-social behaviour with impunity, Griffin soon finds that he no longer has a self, only a physical presence that must somehow be negotiated.

Like Stedman, Griffin revolts against the self-consciousness that results from his invisible status. He continues to be ridiculed by the Sussex villagers, and even when he reveals his invisibility to them, the situation quickly degenerates from one of horror and awe to farce:

He put his open palm over his face and withdrew it. The centre of his face became a black cavity. [...] It was worse than anything. Mrs. Hall, standing open-mouthed and horror-struck, shrieked at what she saw, and made for the door of the house. Every one began to move. They were prepared for scars, disfigurements, tangible horrors, but *nothing!* [...] People down the village heard shouts and shrieks, and looking up the street saw the Coach and Horses violently firing out its humanity. [...] There was a disturbance behind, and [...] a little procession that was marching very resolutely towards the house,—first Mrs. Hall, very red and determined, then Mr. Bobby Juffers, the village constable [...] "'Ed or no 'ed," said Juffers "I got to 'rest en, and 'rest en I *will!*" (pp. 25-26, original emphasis)

Able to cope with the visible, ‘*tangible*’ horrors, the villagers are stupefied at the appearance of ‘*nothing*’.²¹⁶ Emasculated and reduced to a ‘void’, Griffin is faced with the kind of treatment that the patriarchal Stedman imposes upon Stella. Unable to face the contradictory, absent presence of Griffin, the solution for the villagers is to bind Griffin with handcuffs to the law, just as Stedman longs to place a ring upon Stella’s invisible finger (*SR* 8, p. 71). The common-sense approach of the villagers to Griffin’s invisibility—their determination to arrest him whether his head is visible or not—marks the first shift in the structure of this novel, from its heuristic opening chapters to the brief eruption of comedy and violence following Griffin’s act of unveiling. Such a reaction to Griffin’s solemn and malevolent act of unveiling of his face reduces his power as an agent, further emasculating him. Recalling Jordanova’s discussion of the politics of veiling and unveiling, she notes that, in relation to the female body, because of the ‘personification of the woman as Naked Truth’, the instance of a woman unveiling might be pleasing or frightening, but always titillating (p. 96). ‘By contrast’, Jordanova continues, ‘the idea of unveiling men is comic, implausible and unthreatening’ (p. 96). After the initial moment of shock caused by Griffin’s removal of his wrappings, he quickly becomes a ridiculous figure because, as Jordanova observes, ‘unveiling men makes no sense possibly because neither mystery nor modesty are male preserves but are attributes of the other’ (p. 110). Mocked and dehumanised as a ‘veiled’ man, Griffin’s attempts at incorporating ‘masculine’ and ‘feminine’ behaviours by rejecting ‘feminine’ modesty through engaging in a ‘feminine’ activity—that of unveiling—bring even more ridicule upon him. By no longer being ‘modest’ and engaging the most revealing act of unveiling possible, the

²¹⁶ The emphasis on *nothing*, here, also calls to mind Freud’s theory of the male ‘castration complex’. See *Three Contributions to the Theory of Sex*, in *The Basic Writings of Sigmund Freud*, trans. A. A. Brill (New York: Modern Library, 1938), pp. 553-629, p. 595.

shock of the 'nothing' that Griffin reveals quickly degenerates into absurdity. Indeed, Griffin does not become a terrifying force again until later in the novel, when he wholeheartedly embraces activities that by the standards of Graham and Stedman are 'masculine': 'smiting and overthrowing for the mere satisfaction of hurting' (*IM*, p. 42).

X-Rays and socialism

As I observed above, Griffin's act of unveiling marks the first of many shifts in the structuring of *The Invisible Man*. Before I turn to an examination of the structure of this novel, however, I want to return to the scientific and cultural context of both *The Invisible Man* and 'Stella'. The connections between the discovery of X-rays and developments in British socialism may seem tenuous, but I will attempt to highlight how increased concern with structuring—be it on molecular, social, physical or aesthetic levels—fits into the complex network of ideas that affected both Hinton and Wells. Beginning with socialism, both Hinton and Wells can be linked to the Fabian Society. Ellis was a founding member of The Fellowship of the New Life, the society from which the Fabians developed. According to Ellis's biographer, Grosskurth, he accompanied Hinton's mother and aunt to the first meeting of this society. When the Fabians split off from the Fellowship, Ellis no longer attended their meetings, but Hinton's female relatives continued to do so, his aunt giving a paper titled 'The Two Socialisms'. Grosskurth notes that this paper, delivered in March of 1884, marked the first time that the word 'socialism' appears in the records of the Fabian Society.²¹⁷ Wells also attended Fabian meetings and considered himself a part

²¹⁷ Grosskurth, p. 68. I have been unable to determine if Hinton attended any of these meetings himself. See also N. MacKenzie and J. MacKenzie, *The First Fabians* (London: Weidenfeld and Nicolson, 1977), pp. 1-45.

of the socialist movement in Britain.²¹⁸ Finally, although Hinton does not use the word ‘socialism’ in ‘Stella’, or in any of his writings, his publisher, William Sonnenschein, was friendly with the Fabians and his press published several socialist texts.²¹⁹ It is therefore likely that Hinton’s ‘Stella’ would have been read with socialist politics in mind.

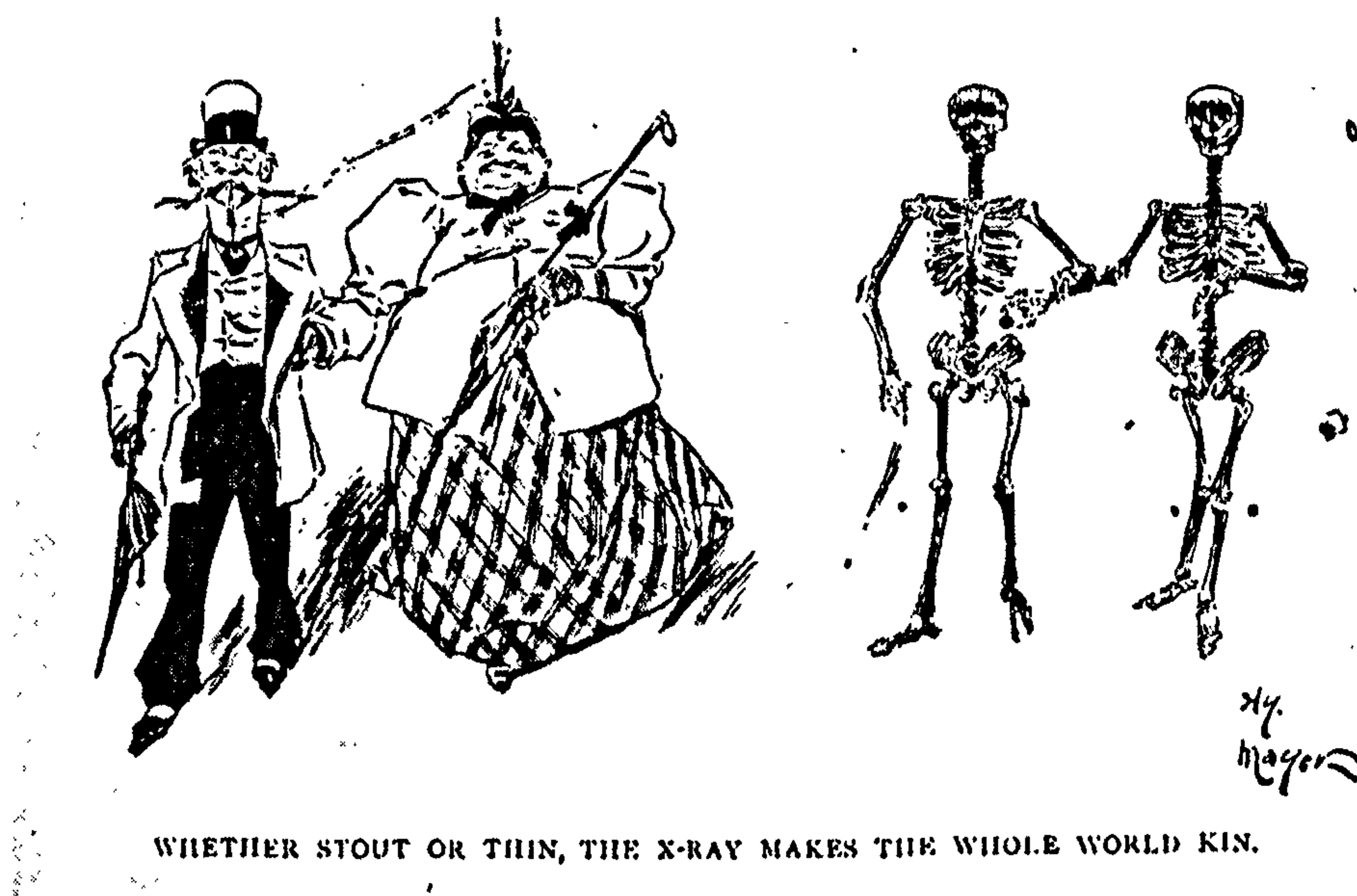
X-ray images also drew popular and scientific attention to the importance of underlying structural organisation. Knight claims that the period that saw the rise of the X-ray machine—which she identifies as 1895 to 1906—also saw a shift from literary and utopian narratives of redemption through social organisation to the ‘miracle machine’ that would cure society’s ills (p. 26). Knight is speaking specifically of American culture, and although she highlights aspects of the history of X-rays that are both relevant and intriguing, her claim does not appear to apply as simply to British culture. I would argue that this shift—if it occurred on either side of the Atlantic Ocean—is not so easily defined. The expansion of vision allowed by the ‘miracle machine[s]’ that produced X-ray images was as unsettling as it was confidence-inspiring. Again, I draw upon Beer to identify this paradox:

Increasingly the invisible came to declare itself a condition within which we move, and of which we are, lateral, extensive, out of human control; worse, not amenable to analysis yet replete with phenomena. The invisible might prove to be a controlling medium, not a place to be explored; a condition of our existence, not a new country to be colonized. (“Authentic Tidings”, p. 88, original emphasis)

²¹⁸ In Wells’s *EA*, he writes of attending Fabian Society meetings hosted by William Morris at Kelmscott House while he was a student at South Kensington, circa 1884-1887. It was during this period that he also recalls declaring himself ‘an out-and-out’ socialist, signifying this avowal by wearing a red necktie (*EA*, I, p. 238). Given the dates, it is therefore possible that Wells could have encountered Hinton’s relatives, or perhaps even Hinton himself, at the Fabian Society meetings.

²¹⁹ Swan Sonnenschein published the first English edition of Marx’s *Capital*, as well as G. B. Shaw’s *An Unsocial Socialist*. The press also published a line called ‘the Social Science Series’, which addressed ‘the most burning questions of the day’ by printing works such as B. Bosanquet’s edition of A. Schäffle’s *Quintessence of Socialism*, B. Webb’s *The Cooperative Movement in Great Britain* and other works by Marx and F. Engels. See F. A. Mumby and F. H. S. Stallybrass, *From Swan Sonnenschein to George Allen & Unwin Ltd* (London: George Allen & Unwin, 1955), pp. 21, 39. In 1895 the *Pall Mall Gazette* reviewed and advertised for this series, and Wells was writing reviews for the *Pall Mall Gazette* at this time.

As a condition that supports, maintains and perhaps even manipulates the phenomenal world, socially speaking, the invisible is a broadly equalising factor. All are under the reign of the invisible: it permeates and renders meaningless oppositions such as gender, race and class differentiations. Both subject and Other are of the same components. Knight problematises her own argument by offering examples of the equalising capacity of the technology surrounding the discovery of X-rays, noting the relative availability of X-ray producing equipment, and also commenting on ‘the odd but popular invention’ called the “x-ray slot machine”, which was often found in restaurants and advertised as an educational device “calculated to give the man in the street a glimpse of natural phenomena that he might not otherwise obtain” (p. 18). Finally, she reprints the following cartoon:²²⁰



Knight observes that this illustration hints ‘at the possible levelling effects of the rays by revealing that beneath the superficial layer the well-to-do of the Gilded Age were the same as common people’ (p. 14). As an easily accessible and inexpensive technology that

²²⁰ Knight, p. 17.

revealed the shared reliance upon hitherto invisible, underlying structural organisation while simultaneously undermining current social, physical and political divisions, X-ray images were not simply the emblems of the rise of the 'miracle machine' that expanded medical knowledge and human control over both external and internal environments. These images played a part in rendering visible the constructed nature of the framing devices of class and gender.

Such technologies and aesthetic approaches that are concerned with revealing and dissolving boundaries often construct fresh paradigms as well. For example, Hinton's hyperspace philosophy, while undermining epistemological approaches framed by three-dimensional logic, also seeks to develop a 'new' theoretical framework, one which is based on four-dimensional logic. The threat of the unknown and the unseen therefore foregrounds the importance of organisation and perspective; the previously invisible or unimaginable will in turn become domesticated. Structural organisation is important in the writings of both Hinton and Wells. Hinton's obsessive cube exercises are studies in relations and organisation, with the cube as a model for 'a common element [...] by whose arrangements' every material structure is produced (*NET*, p. 17). Offering another example in this text, Hinton turns to chemistry, where atoms are the founding units of all matter, and the 'combinations of which account for the results which we see' (p. 17). The visible is thus constructed and determined by the invisible. For Hinton, 'we see that that which the mind essentially apprehends is arrangement' (p. 17). The models that we use to recognise the world are therefore reflective of human values: 'no doubt there are many assertions which we make about the external world which are really assertions about ourselves' (p. 43). According to Hinton, human observations may be indicative of

subjective perceptual limitations, but 'we may be in such a condition that our perceptions, not ourselves, are so limited. The question is one which calls for experiment' (p. 45). This is not pure idealism; the underlying assumption here is that the world is not created by the mind of the subject, rather, there is some deeper or 'more real' reality waiting to be perceived. Hinton's experiments to discover whether or not humans are capable of perceiving extra spatial dimensions are the impetus behind his texts. These romances offer safer versions of the experiments that Stella and Griffin undergo; by learning multiple arrangements of sets of cubes, for example, the reader is encouraged to 'cast out the self', to dissolve the boundary between self and other. Referring to his own trial-and-error experimentation, Hinton claims that 'I can lay it down as a verifiable fact, that by taking the proper steps, we can feel four-dimensional existence, that the human being somehow, and in some way, is not simply a three-dimensional being—in what way it is the province of science to discover' (p. 46).

The recognition of this four-dimensional existence is, for Hinton, a deeply ethical issue. It is for Wells as well, and it particularly informs his interpretation of socialism. Both men support the direct, practical applications of four-dimensional reasoning to everyday life. Although Hinton often engages in abstract speculation, he is careful to remind the reader of the ethical implications of his hyperspace philosophy. 'We have to choose between metaphysics and space thought', he explains, because while 'in metaphysics we find lofty ideals', without practical application, metaphysics 'reduces the world to a phantom and ourselves to lofty spectators' (p. 37). Unlike the 'lofty ideals' of metaphysics, Hinton explains how his more practical 'space thought' can be applied to

real life. By learning to appreciate the relations within a block of cubes without reference to the human body, Hinton writes:

We discover in our own minds the faculty of appreciating the facts of position independent of gravity and its influence upon us [...] the discovery of this capacity is like the discovery of a love of justice in the being who has forced himself to act justly. It is a capacity for being able to take a view independent of the conditions under which he is placed, and to feel in accordance with that view. (pp. 32-33)

This independent view and the feeling that accompanies it—implied by Hinton as the perspective accessible from the fourth dimension—is not one that is available to those who are simply ‘lofty spectators’, but only to those ‘who ha[ve] forced’ themselves ‘to act justly’. Knowledge and vision are necessarily linked with morality here: to ‘see’ from this perspective is to ‘feel in accordance with that view’, and thus have a personal stake in it. Wells also strives to impart a sense of justice to his readers through the multiplication of perspectives in his writing. In his later, overtly socialist utopias such as *A Modern Utopia* and *Men Like Gods* (1923), Wells similarly argues that individuals must learn to feel in accordance with an impartial sense of justice in order to achieve an ideal society.

There is a troubling paradox here: an impartial sense of justice, which is based on an ability to feel in accordance with others’ agendas and worldviews, is contingent upon a certain lack of egotism. Hence there is a desire to ‘cast out’ or dissolve the sense of self that circumscribes one’s interests. However, there is also a fear of self-dissolution here, which Wells foregrounds in his depiction of the violent Griffin and is implied in Hinton’s meticulous cube manipulations. The desire to extend the self and exert control leaks through quite explicitly, on occasion, in Hinton’s writing; for example, after his discussion of how learning the relations between cubes is akin to discovering a sense of justice Hinton continues, claiming that ‘it can only be done by, as it were, extending our own

body so as to include certain cubes, and appreciating then the relation of the other cubes to those' (p. 33). By 'extending the body', or the sensation of embodied subjectivity to encompass other, external perspectives, Hinton's project of 'casting out the self' takes on an entirely different meaning from that of self-surrender. Rather, here the self is 'cast out' like a net, in order to draw in objects around of it. The self thus becomes a larger agent; like the Persian king with his light rays, the self here gains power through its violation of the dichotomy of inside and outside.

Hinton's inversion of the theory of entropy in 'The Persian King' can be read in reference to socialism and proto-feminism as well. In his essay, 'Time Discovered and Time Gendered in Victorian Science and Culture', M. Norton Wise offers a convincing illustration of how the gender dichotomy that links 'masculine' with culture and 'feminine' with nature is implicated in industrialised models of time-management and productivity. Wise argues that in the nineteenth century, linear, progressive time becomes associated with the male, while repetitive, cyclical work is associated with the female and described in terms of wastage. This dichotomy between productive and reproductive work can be described as managerial and mechanical. Mechanical, factory labour is associated with crowded urban areas, and, Wise explains, the writings of William Thomson on mechanical dissipation and the Victorian model of entropy had 'in part, arisen from and continued to reflect the easy analogy between the degraded state of energy [...] and the degraded state of the laboring poor'.²²¹ In industrialised urban areas, the labouring poor were seen to conglomerate in 'unruly crowds and mobs', who in one Victorian statistician's words, "substitute, for a population that accumulates and preserves instruction and is steadily progressive, a population that is young, inexperienced, ignorant,

²²¹ Wise, 'Time Discovered and Time Gendered in Victorian Science and Culture', in *FEI*, pp. 39-58, p. 52.

credulous, irritable, passionate, and dangerous, having a perpetual tendency to moral as well as physical deterioration” (Wise, p. 52). These ‘morally degenerate’ crowds are also effeminised, as Wise notes. They are either depicted as young, “‘mere boys’”, or a female, potentially revolutionary and bloodthirsty mob, as Dickens portrays in *A Tale of Two Cities* (Wise, pp. 52, 47). Wise concludes that ‘the conceptual analogy between dissipated powers in nature and the degraded state of the crowd, as represented by the normal curve, seems to have been almost ready-made for interpreting thermodynamics, especially when the theory identified heat with molecular motion’, as it did in Thomson’s writings (p. 53). Thus we can observe another layer of anxiety embedded within the discourse of Victorian entropy: eventually the balance will tip between the organised, ‘productive’ members of society and the chaotic, dangerous ‘underlings’. Hinton’s revaluation of entropy therefore has political, as well as scientific, implications. The Persian king—a personification of entropic process—fulfils a role similar to the women and labouring poor in Victorian society, in bearing the pain and exhaustion of the labour which underpins society.

The discovery of X-rays, then, came at a time when speculations about the unseen carried not only theological and scientific implications, but political import as well. The dramatic images produced by X-ray photography captured the public imagination in such a way that made them attractive to a number of conflicting ideologies. Their fantastic nature allowed them entry into ‘the collective imagination’, as Knight describes it, engendering an ‘x-ray mania, [that] began early and grew quickly’ (p. 14). The ramifications of this ‘mania’ were diffuse, and are subtly intertwined with a number of other contemporary concerns. While on the surface it is possible to appreciate Knight’s

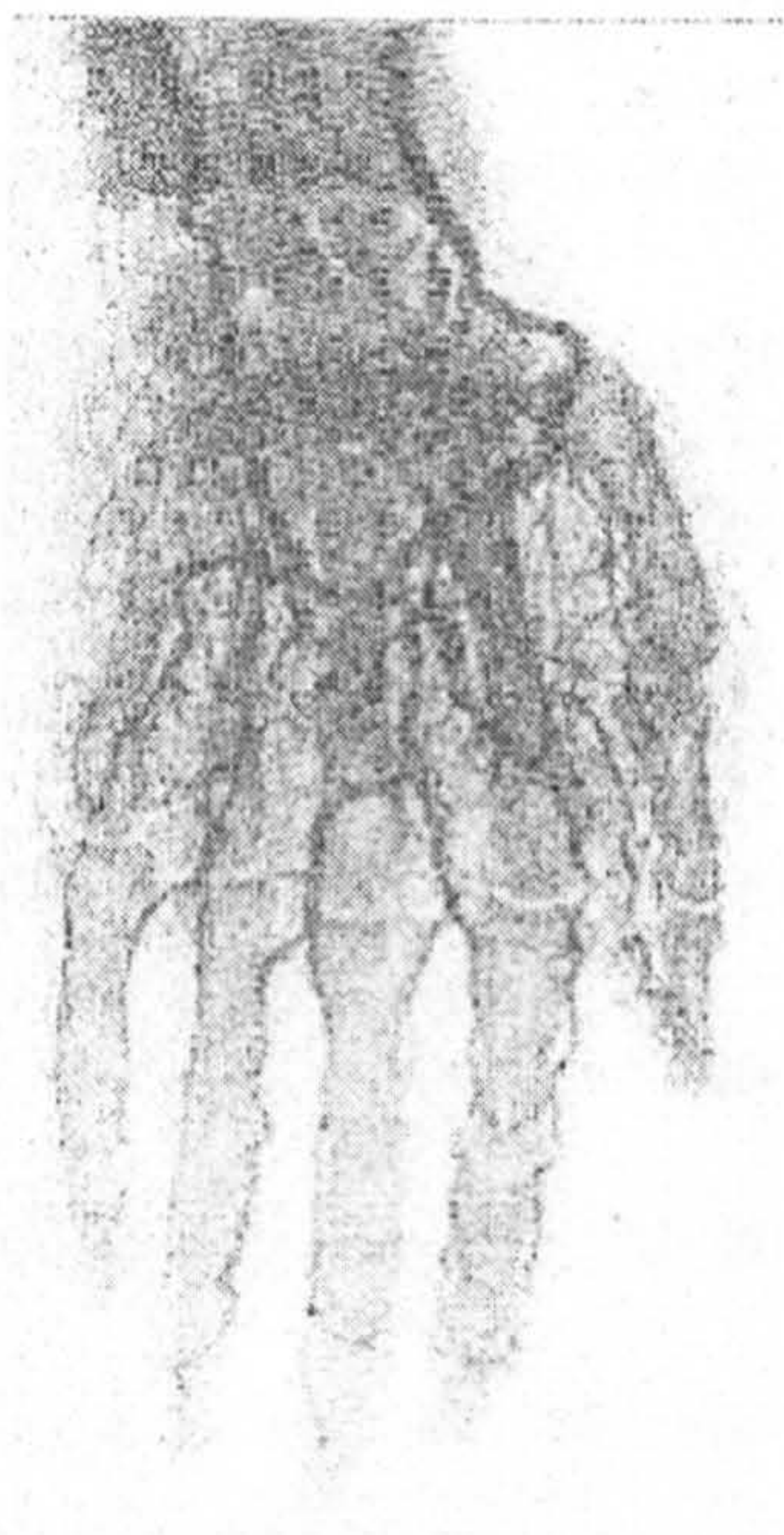
argument for the significance of X-rays in causing a shift from emphasis on social organisation to technological advancement, in reality, such a shift is not so easily defined. What is clear, at least in the case of Britain, is that the discovery of X-rays was quickly subsumed into a network of discourse and political anxieties, of which the development of British socialism is also indicative.

The impact of fantastic images produced by X-ray technology is also apparent in *The Invisible Man*. As a socialist experiment, Griffin confirms the worst fears of those who associated women as well as young, struggling men with violence and the breakdown of law and order. In this manner, he seems to be an inversion of Hinton's Stella; it is as if Wells is continuing and extending Hinton's original experiment. Written after the announcement of the discovery of X-rays, the 'science' of invisibility is supplemented in *The Invisible Man*: Griffin explains that he has made himself invisible by the application of his discovery of the four-dimensional formula to "two radiating centres of a sort of ethereal vibration [...] not these Röntgen vibrations—I don't know that these others of mine have been described' (p. 68). Like Hinton, Wells vaguely refers to the most recent developments in optics, chemistry and physics. The impact of Röntgen's discovery can be observed in Wells's depiction of the visual uncanniness of human invisibility as well. That Wells's conceptualisation of Griffin is influenced by X-ray imagery is apparent in passages such as the following, where he describes Griffin's return to visibility after he is beaten to death by the angry villagers:

Everyone saw, faint and transparent as though it was made of glass, so that veins and arteries and bones and nerves could be distinguished, the outline of a hand, a hand limp and prone. [...] And so, slowly, beginning at his hands and feet and creeping along his limbs to the vital centres of his body, that strange change continued. It was like the slow spreading of a poison. First came the little white

nerves, a hazy grey sketch of a limb, then the glassy bones and intricate arteries, then the flesh and skin, first a faint foggiess, and then growing rapidly dense and opaque. (*IM*, p. 108)

This eerie description of the ‘strange change’ of Griffin’s corpse, ‘like the slow spreading of a poison’, from his hands to the centre of his body are strikingly similar to images that were published at the time Wells was writing, such as the ones below:²²²



Also, the frequent descriptions of the jewellery of subjects photographed with X-rays, referring to how they appear to be ‘suspended in mid-air’, reverberate throughout *The Invisible Man*. For example in the passage where Griffin breaks into Kemp’s house and demands a meal: “‘Never mind knives,” said his visitor, and the cutlet hung in mid-air, with a sound of gnawing’ (p. 57). In his tale of invisibility, Wells places more emphasis on the visual strangeness of Griffin than Hinton does in ‘Stella’; indeed, Stella’s invisibility exists almost purely for discursive purposes. The language and imagery that Wells draws

²²² The ability to render the blood vessels visible to X-rays was developed in 1896, by an Austrian scientist who injected a ‘mixture of lime, cinnabar, and petroleum via the brachial artery’ into a fresh human corpse (Glasser, p. 85). The image on the left is reproduced in Mould, p. 39, figure 83; the one on the right is from E. Trevert, *Something About X Rays for Everybody* (Lynn, MA: Bubier Publishing, 1896), reproduced in ‘The X-ray Century’, <<http://www.emory.edu/X-RAYS/century.htm>> [accessed 27 June 2007].

upon to depict Griffin's invisibility simply were not a part of the popular imagination when Hinton was writing 'Stella'.

Structuring *The Invisible Man*

The Invisible Man, with its frequent shifts in tone and style, is an early example of Wells's attempt to develop a four-dimensional literary aesthetic that pushes the reader to engage with the text in a self-conscious manner. While Hinton also complicates the structure of 'Stella' by embedding it within several narrational frames, the structuring of his narrative is not as complex as Wells's novel. In 'Stella', first we are given an outsider's 'reading' of Stedman's character, and this voice is the metanarrator of the text. Stedman relays the main body of the narrative through this occasionally critical narrator. The reader follows Stedman's account of his discovery of Stella, moving through his initial hypothesis that she is a ghost, to his discovery that she is alive and invisible. Then Stella is kidnapped, and again the reader is led through the speculations of Stedman and Cornish, as to her whereabouts and how to retrieve her. Stedman also scours Graham's writings for a clue to Stella's disappearance, both from Graham's estate and the realm of visibility in general, and again the reader is expected to 'read' Graham's ideas and his character through the narrator's mediation of Stedman's account. Even after Stedman recovers Stella from the fraudulent spiritualist, he is continually piecing together the clues to the psychological and physical causes of her invisibility. Thus at the level of structuring, 'Stella' implies the heuristic process of discovery that the reader of any narrative must undergo, if they are to fully engage with that text.

If Hinton's story subtly highlights the importance of reading and interpretation, Wells increasingly foregrounds it in his writing. We can see an early example of this

tendency in the disjointed style of *The Invisible Man*. While in this novel Wells also dramatises the heuristic process—depicting other characters in the act of ‘reading’ Griffin—it is the structuring of the second half of the novel that anticipates his later ‘splintering frame technique’. John Hammond is one of the few Wells scholars to consider the structuring of *The Invisible Man* to be a positive characteristic, writing that ‘*The Invisible Man* and *The History of Mr Polly* both have an unusual structure which on first reading appears to fracture the narrative but on subsequent readings can be seen to contribute in a material way to the unfolding of the story’.²²³ While I agree with Hammond here, he does not offer a reading or analysis to justify this conclusion. *The Invisible Man* ‘unfolds’ in two senses of the word and this unfolding is enabled by the unusual structure of the novel. Quite literally, there is an unravelling of the layers of representation surrounding Griffin before he is finally rendered visible again as a naked, battered corpse.

However, before the readers—both inside and outside of the text—are allowed to actually ‘see’ Griffin’s body, they must first move through multiple and sometimes contradictory perspectives on Griffin. This shifting viewpoint on the eponymous character mimics Hinton’s textual constructions of the fourth dimension throughout his *Scientific Romances*. Just as Hinton asks, ‘What is the Fourth Dimension[?]’, in his first romance and then proceeds to offer multiple answers, so Wells’s text begins by describing ‘The Strange Man’s Arrival’, and proceeds to construct various answers to the question implied here, regarding the identity of this ‘strange man’.²²⁴ First the reader is given the observations of the innkeeper, Mrs Hall. From Mrs Hall, the narrative expands to include

²²³ J. R. Hammond, *H. G. Wells and the Modern Novel* (Basingstoke and London: Macmillan, 1988), p. 15.

²²⁴ ‘The Strange Man’s Arrival’ is the title of the first chapter in *IM*.

the impressions and speculations of the other inhabitants of the village. The events of the narrative and the developing hypotheses of the villagers are presented to the reader in the matter-of-fact manner of a case-study. The second chapter, which is titled 'Mr. Teddy Henfrey's First Impressions', begins: 'At four o'clock [...] Teddy Henfrey, the clock-jobber, came into the bar' (*IM*, p. 5). Hall, Henfrey and the other villagers move through a process of trial and error in testing their differing explanations for Griffin's bizarre, bandaged appearance and his secretive behaviour. They progress from the assumption, based on Griffin's bandages, that he has suffered a disfiguring accident, to speculations that he is hiding from the police, a prospective burglar, that his skin is black or 'he's a half-breed', a 'harmless lunatic', or somehow supernatural.²²⁵ Once faced with the truth behind Griffin's mysterious appearance and behaviour, the characters constantly question their abilities to perceive and understand reality: "Am I mad?" Cuss began abruptly [...]. "Do I look like an insane person?" (p. 16); "Am I drunk?" said Mr. Marvel. "Have I had visions?" (p. 30); and 'Kemp slapped his brow with his hand. "Am I dreaming? Has the world gone mad—or have I?"' (p. 60). Like Hinton's Stedman who is afraid to leave the invisible Stella in the care of Graham's family because, as he tells them, "when I was gone, you would all be persuaded again that Stella doesn't exist", Wells's Iping villagers, when first presented with the problematical existence of an invisible man, soon convince themselves of his unreality: 'After the first gusty panic had spent itself Iping became argumentative. Scepticism suddenly reared its head—[...]. It is so much easier not to believe in an invisible man'.²²⁶ On many levels, Griffin simply does not fit into the

²²⁵ *IM*, pp. 3, 8, 13, 15 and 21-22, respectively.

²²⁶ Hinton, *SR* 8, pp. 71-72; and Wells, *IM*, p. 34, respectively.

villagers' paradigm for perceiving and understanding the phenomenal world; however, Griffin and the complications implied by his (dis)appearance refuse to be ignored.

In the early chapters of *The Invisible Man*, then, as Sirabian observes, the villagers 'attempt to formulate a conclusion about [Griffin's] identity, relying on a form of deductive reasoning in the spirit of the scientific approach popularized by Conan Doyle's Sherlock Holmes'.²²⁷ After Griffin unveils his invisible body to the villagers, as I have illustrated above, the narrative shifts into a low comedic mode, with physical humour and broad Biblical parody.²²⁸ Following this section, the narrative introduces Dr Kemp, a scientist and former acquaintance of Griffin. Kemp's conventional approach to scientific investigation—he aims to become a member of the Royal Society—is directly opposed to Griffin's radical and interdisciplinary experimentation, as Bergonzi notes: 'Kemp, in short, stands for South Kensington as against [Griffin's] Frankenstein'.²²⁹ Griffin relays his version of events to Kemp, and here the story shifts into first-person narration. It is only at this point, precisely midway through the novel, that we are given Griffin's name, and it is only his surname. Before his conversation with Kemp, Griffin is referred to as 'the Invisible Man', 'the stranger', the 'Bogey Man', 'the Unseen', 'the voice', and as various

²²⁷ Sirabian, 389. See also Bergonzi, who locates *IM* thematically between 'those romances in which the interest is centred in the heuristic perceptions of a single figure—the Time Traveller, the Angel, Prendick—to *The War of the Worlds*, where attention is focused on society as a whole as it is subject to the unwelcome attentions of not one but a multitude of alien visitants' (p. 117).

²²⁸ Wells appears to be parodying Biblical accounts of divine revelation in his depiction of Griffin's encounter with the appropriately named tramp, Marvel. See *IM*, pp. 30-34. Griffin is referred to here as 'the voice' and 'a voice' that addresses Marvel on the Sussex downs: "'Don't be alarmed. [...] I've chosen you [...]. You have to be my helper. Help me—and I will do great things for you'", he tells Marvel. The scene here is allusive of both Gabriel's annunciation to Mary in Luke 1:30, and Yahweh's conversation with Moses in Exodus, chapters 3-4. Like Moses, Marvel initially offers resistance and excuses to the demands made of him. Griffin terrifies Marvel by throwing rocks at him and threatening him until Marvel agrees to his demands to be his accomplice in a number of burglaries. Furthermore, when Marvel and Griffin return to Iping to wreak additional havoc on the village, it is significantly during the Whit Monday festivities.

²²⁹ Bergonzi, p. 117. For a more detailed discussion of the opposition between Griffin and Kemp, see R. Runcini, 'H. G. Wells and Futurity as the Only Creative Space in a Programmed Society', in *H. G. Wells under Revision: Proceedings of the International H. G. Wells Symposium, London, July 1986*, ed. by P. Parrinder and C. Rolfe (Selinsgrove: Susquehanna University Press, 1970).

items of clothing. The naming of Griffin and his first-person narration contribute to what Parrinder describes as ‘dramatic complexity through [depicting] the struggle of a human protagonist’.²³⁰ As Griffin describes the struggles of his past as an impoverished student and researcher living in a London slum, and the difficulties brought about by his invisibility—he is constantly ill from walking around naked in the cold, he is harassed by children, dogs and the blind and he risks being run over every time he ventures onto a busy street—he becomes more of a sympathetic figure. However, Wells also undercuts this first-person narration by embedding it within a larger dialogue between Kemp and Griffin. Kemp works as a foil to Griffin’s biased narration, questioning and protesting at Griffin’s actions. Kemp challenges Griffin when he tells of how he spitefully set fire to his boarding house in London, and Griffin’s feeble justification, “‘It was the only way to cover my trail—and no doubt it was insured’”, again reveals his violent and mean-spirited temper (*IM*, pp. 73-74). However, any straightforward reading of Griffin’s villainy is further complicated when he replies to one of Kemp’s later interjections by imploring, “‘You don’t blame me, do you? You don’t blame me?’” (p. 86).

Several critics interpret the ambiguous nature of Griffin’s character to be a significant flaw in this novel. For example, Batchelor writes that ‘the reader’s sympathies for much of the novel are *for* Griffin and against, for example, the oafish inhabitants of Iping [...]. Half-way through his novel Wells forces it against the grain of our sympathies—and severely damages it in my view’ (p. 22, original emphasis). Batchelor claims that this novel is one of Wells’s ‘less successful’ romances, and asks: ‘Is the novel finally a moral allegory about the abuse of science or a heroic fable about an outsider who

²³⁰ *H. G. Wells*, p. 24. R. P. Weeks makes a similar observation in ‘Disentanglement as a Theme in H. G. Wells’s Fiction’, in *H. G. Wells: A Collection of Critical Essays*, ed. by B. Bergonzi (Englewood Cliffs: Prentice-Hall, 1976), pp. 25-31, p. 27.

refuses to live by middle-class standards? It seems open to either interpretation' (p. 30). Such is the kind of reductive reading that Wells takes to task in his prefatory remarks to *A Modern Utopia*. Later Wells would take a stance against what he perceived to be a strain of aestheticism that demanded that the novel be a 'unified' piece of work, in his bitter argument with Henry James. While Sirabian claims that the disunity of Wells's *The Invisible Man* allows for 'an exploration of the tensions caused by trying to reconcile two seemingly opposite conceptions of science', making this text 'more than a scientific romance', I would argue that in fact such tensions are what define the scientific romance (384). The combination of science and fantasy, and the anxieties that underlie the unstable fiction of the fourth dimension in Hinton's *Scientific Romances*, become adapted by Wells in his attempts to develop 'the aesthetic fourth dimension', by—in Scheick's words—employing 'certain fictional conventions in a way designed to [...] frustrate expectations aroused by these conventions, [and] to draw attention to the artificiality and ideology behind these conventions' (pp. 24-25). Although Scheick emphasises Wells's play with 'fictional conventions' in his later novels, in the *The Invisible Man*, we can see an early example of this impulse.

From the first-person narration embedded within the dialogue between Griffin and Kemp, the narrative briefly draws back to an omniscient, third-person account of events as Kemp betrays Griffin to the police. Once Griffin is on the run again, however, the narrative shifts yet again; in reporting 'The Wicksteed Murder', the narrative tone is reminiscent of sensational journalism.²³¹ Here the narrator relays the evidence found at the murder scene, oscillating between horrific details and speculation: 'The Invisible Man seems to have rushed out of Kemp's house in a state of blind fury. [...] No one knows

²³¹ 'The Wicksteed Murder' is the title of the twenty-sixth chapter.

where he went nor what he did. But one can imagine him hurrying through the hot June afternoon' (p. 94). Again, the narrative style pulls the reader's emotions in opposing directions, by arguing sympathetically for Griffin while also providing the details of his violent behaviour and the gruesome murder that he apparently perpetrated. Building up to the description of the murder, the narrator informs the reader that 'a little child playing near Kemp's gateway was violently caught up and thrown aside, so that its ankle was broken', but the use of the passive tense here, as well as the reference to the child as 'it', works to downplay both Griffin's culpability and the viciousness of his actions (p. 94). Also, the narrator implicitly asks the reader to empathise with Griffin's feelings of outrage at Kemp's betrayal:

No doubt he was almost ecstatically exasperated by Kemp's treachery [...] we may still imagine and even sympathise a little with the fury the attempted surprise must have occasioned. [...] He had evidently counted on Kemp's co-operation in his brutal dream of a terrorised world. (p. 94)

Here the reminder that Griffin wishes to inflict 'his brutal dream of a terrorised world', beginning with the southeastern region of England, undercuts the reader's ability 'to sympathise a little' with Griffin. The narrator also speculates on the possibility of extenuating circumstances that could lift 'the murder out of the realm of the absolutely wanton', by reminding the reader that Griffin was being pursued and hounded by the police and angry villagers, and that 'the evidence that he had the [murder weapon] in hand before he met Wicksteed is to me at least overwhelming' (pp. 96, 95). The narrator continues, painting a scenario where Griffin kills Wicksteed in self-defence, explaining that 'no doubt the Invisible Man could easily have distanced his middle-aged pursuer under ordinary circumstances, but the position in which Wicksteed's body was found suggests that he had the ill luck to drive his quarry into a corner' (p. 96). Again, the supporting evidence of the position of the body, and the generous speculation that 'the

sight of his victim, bloody and pitiful at his feet, may have released some long pent fountain of remorse' is undermined by the mention of the 'bloody and pitiful' state of the corpse, recalling an earlier description of how Griffin 'stopped this quiet man, going quietly home to his midday meal, attacked him, beat down his feeble defences, broke his arm, felled him, and smashed his head to a jelly' with an iron rod (pp. 96, 95-96). Thus in this chapter especially, we see a particularly well-controlled example of how Wells continually arouses and then subverts his readers' expectations.

The terror of the final chase scene, where Griffin brutally hunts down and pursues Kemp into Port Stowe with the intention of murdering him, is also complicated by the fact that Kemp ends up running 'in his own person the very race he had watched with such a critical eye from the belvedere study only four days ago' (p. 105). The previous 'race' had been run by Marvel, who was also attempting to escape Griffin's murderous rage. Kemp had complacently observed this chase from the comfort of his study, while condemning Marvel: "Another of those fools," said Doctor Kemp. "Like that ass who ran into me this morning round a corner with his "Visible Man a-coming, sir!" I can't imagine what possesses people"" (p. 49). Kemp's smug disdain at the sight of Marvel's terror is in turn repaid by his own neighbour's selfish reaction to the sight of Kemp fleeing Griffin: 'He ran to shut the French windows that opened on the veranda; as he did so Kemp's head and shoulders and knee appeared over the edge of the garden fence. [...] "You can't come in," said [the neighbour], shutting the bolts. "I'm very sorry if he's after you, but you can't come in!"' (p. 105). The title of this chapter is, appropriately, 'The Hunter Hunted', and in it we see a number of reversals. Kemp, who has instigated the police hunt for Griffin, is now being hunted by Griffin to be the first execution in his 'Reign of Terror'. By the end

of the chapter, however, the power has switched hands yet again as the entire village pursues Griffin and beats him to death in a frenzy of mob violence. As Griffin's corpse returns to visibility, the imagery Wells uses to describe him is both pathetic and fierce:

Presently they could see his crushed chest and his shoulders, and the dim outline of his drawn and battered features. When at last the crowd made way [...] there lay, naked and pitiful on the ground, the bruised and battered body of a young man about thirty. His hair and beard were white,—not grey with age, but white with the whiteness of albinism, and his eyes were like garnets. His hands were clenched, his eyes wide open, and his expression was one of anger and dismay.²³²

Although this, the original ending of *The Invisible Man*, is ambiguous enough, when he published it in book form Wells added an epilogue that further disrupts any kind of conventional ending where 'the forces of law and order eventually triumph' (Parrinder, p. 26). The epilogue tells of the tramp Marvel, who, as Griffin's human purse, has used Griffin's ill-gotten financial gains to purchase an inn in Port Stowe. Earlier in the narrative, the reader is given an account of how 'all about that neighbourhood, even from the august London and Country Banking Company, from the tills of shops and inns—doors standing in that sunny weather entirely open—money had been quietly and dexterously making off that day in handfuls and rouleaux' (*IM*, p. 49). Thus the happy ending for Marvel, who is finally housed and employed, is only at the subversion of 'the forces of law and order'. Further complicating matters is the fact that Marvel has also obtained Griffin's scientific notebooks, 'and though Kemp has fished unceasingly [...] no human being save [Marvel] knows those books are there, with the subtle secret of invisibility and a dozen other strange secrets written therein. And none other will know of

²³² *IM*, p. 108. See D. J. Lake, 'White Sphinx and Albino Griffin: Images of Death in the Scientific Romances of H. G. Wells', in *The Stellar Gauge: Essays on Science Fiction Writers*, ed by M. J. Tolley and K. Singh (Carlton, Victoria: Nostrilla Press, 1981), pp. 25-42, for a discussion of Wells's use of colour, especially to signify death and destruction. Lake's argument remains unconvincing however, and I disagree with his claim that Wells's use of symbolism in his writing justifies a comparison with Shakespeare. Hardin also addresses colour, particularly with reference to Griffin's albinism and race, 99-101.

them until he dies' (p. 110). Hammond observes that 'this deliberate ambivalence, a seeming reluctance to reach a point of finality, is characteristic of Wells's fiction. It stems from his attitude of mind and his refusal to admit that the world of physical reality is final and definite' (p. 22). Here again we observe the tendency toward open-endedness that is also expressed in Hinton's *Scientific Romances*. With the multiplication of dimensional perspectives comes the multiplication of possible 'realities', and over the course of his literary career, Wells became increasingly concerned with encouraging reader awareness of the complexity of framing and perspective.

Splintering the frame: Wells's 'four-dimensional aesthetic'

While Wells began his literary career writing scientific romances, he soon decided to try his hand at writing what he distinguished as the 'novel', by which he meant realist fiction, in the tradition of the eighteenth-century novel in English.²³³ Wells saw potential for the novel to be, as he explained, a 'social mediator, the vehicle of understanding and the instrument of self-examination' ('Contemporary Novel', p. 154). Many of his literary friends were not impressed with Wells's attempts in this vein. In 1938, looking back on his early friendship with 'H. G.', Ford Madox Ford wrote, in reference to Wells's self-conscious attempts at creating 'vehicle[s] of understanding': 'every real artist in words who deserts the occupation of pure imaginative writing to immerse himself in the Public Affairs [...], takes away a little our chance of coming alive through these lugubrious

²³³ Wells particularly praises the discursiveness of Laurence Sterne's *Tristram Shandy* and Henry Fielding's *Tom Jones*. See 'The Contemporary Novel', in *Henry James and H. G. Wells: A Record of their Friendship, their Debate on the Art of Fiction, and their Quarrel*, ed. by L. Edel and G. N. Ray (London: Rupert Hart-Davis, 1958), pp. 131-156, p. 138. Wells apparently viewed the 'novel' as more serious-minded than the scientific romance. In 1900 Wells wrote to Arnold Bennett: 'Why the Hell have you joined the conspiracy to restrict me to one particular type of story? I want to write novels and before God I will write novels. They are the proper stuff for my everyday work, a methodical and careful distillation of one's thoughts and sentiments and experiences and impressions'. See *Arnold Bennett and H. G. Wells: A Record of a Personal and a Literary Friendship*, ed. by H. Wilson (London: Rupert Hart-Davis, 1960), p. 45, original emphasis.

times'.²³⁴ Wells's theory of the novel as 'social mediator' also disturbed another friend, Henry James. However, it is not my intention here to rehash the James and Wells debate concerning the art of fiction. Analysis of this aesthetic, and personal, quarrel between Wells and James usually declares James as 'the winner': in their book on the matter, Leon Edel and Gordon N. Ray even go so far as to condemn Wells for failing to understand 'the true nature of art' (p. 39).²³⁵ In the 1970s and 1980s, a handful of critics such as Hammond, Linda Anderson and Robert Bloom attempted to redress this imbalance by arguing for the legitimacy of Wells's conception of the novel.²³⁶ However, criticism on both sides of the Wells and James debate is often flawed by the assumption that one theory of fiction must necessarily exclude the validity of the other. Wells and James themselves were guilty of this assumption as well. It seems that there is actually more correspondence than opposition in the approaches that James and Wells applied to the writing of fiction. Both men were concerned with consciousness and framing, and by examining both writers in light of hyperspace philosophy and the dimensional analogy, I will highlight previously unacknowledged similarities between these two writers. Turning to Wells first and considering Scheick's analysis of Wells's splintering frame narrative technique, I will lay the foundation for my later discussion of James, in the third section of this study.

Writing in 1934, Wells claims:

Throughout the broad smooth flow of the nineteenth-century life in Great Britain, the art of fiction floated on this [...] assumption of social fixity. The Novel in English was produced in an atmosphere

²³⁴ F. M. Ford, 'H. G. Wells', in *Mightier than the Sword: Memories and Criticisms* (London: George Allen and Unwin, 1938), pp. 145-165, p. 165.

²³⁵ See also B. R. McElderry, Jr's review of the Edel and Ray book, which highlights a number of the weak points of their treatment of the James and Wells correspondence, 'Henry James and H. G. Wells', in *Nineteenth-Century Fiction* 13.3 (December 1958): 260-263.

²³⁶ See Hammond, *H. G. Wells and the Modern Novel*; L. R. Anderson, 'Self and Society in H. G. Wells's *Tono-Bungay*', in *Modern Fiction Studies* 26.2 (1980): 199-212 and R. Bloom, *Anatomies of Egotism: A Reading of the Last Novels of H. G. Wells* (Lincoln and London: University of Nebraska Press, 1977).

of security for the entertainment of secure people [...]. Its standards were established within that apparently permanent frame and the criticism of it began to be irritated and perplexed when, through a new instability, the splintering frame began to get into the picture. (I, p. 223)

Here Wells is generalising ‘nineteenth-century life in Great Britain’ as a monolithic and rigid standard of thinking and being. Wells, as a writer who embraces advances in science and technology and the developing discourses of socialism and sexology, views himself as challenging the ‘social fixity’ of the era in which he was born. Even in his earliest tales of scientific innovation, his scientific romances, Wells was consciously seeking to create disruptions in the illusion of ‘the broad smooth flow’ of stable existence he saw depicted within mimetic Victorian fiction, by introducing fantastical, and external, extra-textual elements. As his career developed, Wells experimented with different strategies to enhance this effect. In his 1911 lecture on ‘The Contemporary Novel’, Wells declares that he will produce a new kind of literature to deal with the social and political concerns of the time. Scheick’s observation that Wells uses his splintering frame technique in his later fiction to challenge some of the social and ‘ideological implications’ embedded within what he viewed as the conventions of the nineteenth-century realist novel—and contemporary fiction influenced by it—is indicative of Wells’s growing interest in ‘Public Affairs’. Specifically, Scheick writes that, in addition to arousing and frustrating reader expectations, Wells employs his technique ‘to draw attention to artificiality and ideology behind these conventions, and [...] to point away from the “exhausted” text as a self-contained, finished artifact [sic] and towards the self-aware reader’ (p. 25). Certainly at times Wells appears to have been successful in this project, if one considers Virginia Woolf’s complaint that Wells’s books ‘leave one with so strange a feeling of incompleteness and dissatisfaction. In order to complete them it seems necessary to do

something—to join a society, or [...] to write a cheque'.²³⁷ She is speaking here of Wells's later novels, which are often explicitly concerned with contemporary political issues. Woolf complains that Wells's concern with transient causes and his thinly veiled calls to action override any concern with the aesthetic quality of his writing. Thus the Wellsian novel is not even a novel, by Woolf's standards; it is a book, a text that is held together by its binding rather than its aesthetic unity. For Wells, however, this 'unfinished', outward-looking quality of his writing *is* his novelistic aesthetic. His later writing, it seems, is designed to function by analogy: by splintering the mimetic narrative structure of the text, he encourages the movement of the reader's attention from the world contained within the text to events in their own, external world, thus implying a splintering of the reader's current conceptual frame of 'reality'

Wells's efforts to splinter the 'reality' depicted within the text led him to try various methods. A very early—and quite literal—example appears in an 1894 story, 'Through a Window'. In this short story, a man suffering from unspecified leg injuries is convalescing in a house north of London. He spends most of his days on a couch in his study, watching the world pass by through a window that looks out onto the river. "“Funny”", he remarks, "“how these people [on the river] come from all points of the compass [...] and gather and pass opposite the window just to entertain me”".²³⁸ However, one day the man's self-centred worldview is disrupted when this entertainment violently intrudes into his sick room, in the form of a hunted escapee from a boat, 'one of

²³⁷ Woolf, 'Mr. Bennett and Mrs. Brown' (1924), in *The Captain's Death-Bed and Other Essays* (London: Hogarth Press, 1950), pp. 90-111, p. 99. Interestingly, with her reference to 'Mrs. Brown', Woolf is also generalising and defining the fictional aesthetic of the 'Victorian' era in opposition to her own preferred style.

²³⁸ H. G. Wells, 'Through a Window', in *The Complete Short Stories of H. G. Wells*, ed. by J. Hammond (London: J. M. Dent, 1998), pp. 30-36, p. 31. Hammond also mentions this story in his discussion of Wells's splintering frame technique in *H. G. Wells and the Modern Novel*, pp. 50-51.

Fitzgibbon's Orientals' (p. 33). The escapee is pursued and shot as he is climbing into the sick room through the window frame: he falls dead on the invalid, 'rapidly staining and soaking [his] spotless bandages' (p. 35). Here, disturbing elements of the outside world—both outside of the study and of England—force themselves into the comfortable sphere of the middle-class audience and by 'staining' it, alter the scene irreversibly. Ten years later, Wells shifts this dramatisation of the splintering frame to structural effect in *A Modern Utopia*. As I have noted, Wells elaborately frames this text, first addressing the reader as himself, in 'A Note to the Reader', and then with another introduction titled, 'The Owner of the Voice', which is written entirely in italics. 'Now this Voice', Wells tells the reader in this second framing piece, 'is not to be taken as the Voice of the ostensible author who fathers these pages. You have to clear your mind of any preconceptions in that respect' (p. 313, emphasis removed). Wells gives a detailed description of this Voice, and the physical person from whom it issues. Then he continues:

Him you must imagine as sitting at a table reading a manuscript about Utopias [...]. The curtain rises upon him so. But afterwards, if the devices of this declining art of literature prevail, you will go with him through curious and interesting experiences. Yet, ever and again, you will find him back at the little table, the manuscript in his hand, and the expansion of his ratiocinations about Utopia conscientiously resumed. (p. 313, emphasis removed)

Here Wells foregrounds the movement that he wishes his reader to mimic, from the narrative of the inner text to the 'outside' world of the narrator. 'This declining art of literature' is the fantasy-making activity that creates the Utopia, but it is also exposed here as an 'art', as artifice.

The main narrative itself is told in the first person of this 'Voice' as he finds himself transported to a parallel Earth on the other side of the universe. This planet mirrors the Earth in its flora, fauna and geography, and the Voice finds himself, along with a

travelling companion, in the Swiss Alps of this parallel-Earth Utopia. ““We are here by an act of imagination, and that is just one of those metaphysical operations that are so difficult to make credible””, the Voice explains to a Utopian that they encounter in the mountains. The Voice’s travelling companion, ‘the botanist’, continually challenges the credibility of the Voice’s ‘act of imagination’ in creating a parallel world that is ideal in nature. The botanist acts as a foil to the Voice’s fantasy-making by repeatedly forcing the realities of life on the ‘real’ Earth back into the frame. For example, the botanist has suffered a personal, romantic disappointment in England, and he persists in describing every mundane detail of his sorrows. ‘Why should a modern Utopia insist upon slipping out of the hands of its creator and becoming the background of a personal drama—such a silly little drama?’ the Voice asks himself in his frustration with the maudlin botanist (p. 436). The answer, Wells implies, is exactly because this is a *modern* utopia, because it is no longer possible to slide along ‘the broad smooth flow’ of Victorian assumptions of unity, even within a bourgeois fantasy of an idealised society. The Voice and the botanist have different desires and needs, and the botanist makes it clear that the Voice’s idea of utopia is not his own:

‘I don’t like this Utopia,’ the botanist repeats. ‘You don’t understand about dogs. To me they’re human beings—and more! There used to be such a jolly old dog at my aunt’s at Frognal when I was a boy—’

But I do not heed his anecdote. Something—something of the nature of conscience—has suddenly jerked back the memory of that beer I drank at Hospenthal, and puts an accusing finger on the memory.

I have never had a pet animal, I confess. (p. 426)

In the Voice’s utopia, consumption of alcohol and tobacco is allowed in moderation, while domestic pets are banned for hygienic reasons. Here, the teetotaler botanist, by inserting his own subjectivity into the picture, expresses needs and desires that call into question the

very idea of the possibility of existence—even in fantasy—of ‘the *best* of all possible worlds’. The implication here is that there is no singular authority who can define what is the ‘best’ over all others. This is why the ‘*modern utopia should* insist upon slipping out of the hands of its creator’ (emphasis added).

Finally, in my examination of Wells’s splintering frame technique, I will turn to his 1915 novel, *Boon*. I have chosen to focus on early examples of Wells’s ‘four-dimensional aesthetic’ in order to supplement Scheick’s discussion, which examines Wells’s later novels. Also, the texts I have selected here are contemporaneous with Wells’s relationship with James. In any consideration of the friendship and quarrel between James and Wells, it is worthwhile to turn to *Boon*, because, in this novel, Wells aggressively vents his frustration with James’s fictional aesthetic. Presented as the literary remains of George Boon, a fictional, popular Edwardian novelist, the book also has a complex structure: it is composed of the fragments of Boon’s speculations, short stories, cartoons and the editor’s own recollections of discussions with Boon and his circle. Throughout the various sections of the book, Boon is planning to write a novel on what he calls ‘the Mind of the Race’; his novel is to be styled as an update of W. H. Mallock’s *New Republic*, featuring discussions between many contemporary literary celebrities.²³⁹ Henry James, George Moore and Edmund Gosse, among others, wander through the fragments of Boon’s novel. Real literary figures also appear within the recollections of Reginald Bliss, the editor: Ford briefly interrupts Boon’s delivery, in his garden, of a mocking discourse on James from the other side of the garden wall where he is playing badminton with a wholly fictional character named Wilkins. The example I highlight comes from a later section of the book,

²³⁹ See W. H. Mallock, *New Republic, or, Culture, Faith and Philosophy in an English Country House* (London: Chatto and Windus, 1897).

when Wilkins challenges Boon's speculations on 'the Mind of the Race', along with another character, a sceptic named Edwin Dodd. Wilkins initiates this discussion:

'All through this book, Boon,' he began.

'What book?' asked Dodd.

'*This one we are in.* All through this book you keep on at the idea of the Mind of the Race. It is what the book is about; it is its theme.'²⁴⁰

Although this metafictional moment is a common one in postmodern fiction, in 1915 it was rare for the world outside of the text to insert itself into the narrative in such an overt manner, by a character's acknowledgement of its fictional status within a bounded text. The outside world is also brought confusingly into this text with the use of real people as characters within Bliss's recollections and within Boon's novel fragments. The implication here is that both Boon's incomplete novel, and *Boon*—with its fragmented narratives—are about 'the Mind of the Race'.

Boon's obsession with 'the Mind of the Race' is in part a product of Wells's rebellion against what he conceived to be a characteristically 'Victorian' emphasis on the individual as being of supreme importance in both fiction and society. Boon describes 'the Mind of the Race' as "something more extensive than individual will and individual process of reasoning [...] a synthesis of all the individual instances" that was beginning to awaken to self-consciousness in the second decade of the twentieth century. Drawing on the language of Emerson and Nietzsche, Wells describes 'the Mind of the Race' as a fusion of 'Overminds', for which 'there is no birth [...] breeding [...] death. That is the lot of such intermediate experimental creatures such as ourselves' (p. 44). Boon thus would not agree with Wells's critique, elsewhere, of Nietzsche's 'blackguardism', of exalting the

²⁴⁰ H. G. Wells, *Boon, The Mind of the Race, The Wild Asses of the Devil, and The Last Trump: Being a First Selection from the Literary Remains of George Boon, Appropriate to the Times, edited by Reginald Bliss, with an ambiguous introduction by H. G. Wells*, 2nd edn. (London: T. Fisher Unwin, 1920), p. 179, emphasis added.

individual will of the 'overman' over the progress of society.²⁴¹ However, perhaps Boon's theory is not opposed to Wells's criticism: Boon's 'Overminds' are plural. If one draws upon more recent Nietzsche scholarship, then Boon's description of the awakening of the 'Overminds', to a higher plane of existence where subjective, individual differences begin to dissolve, appears to be closer to Nietzsche's concept of the overman than Wells probably would have acknowledged.²⁴²

Wells's 'Overminds' and Nietzsche's overman are just two examples of what Clarke identifies as 'the evolutionistic vogue for superhuman types [...] at large in the later nineteenth and early twentieth century' (*EF*, p. 185).²⁴³ Clarke also makes the important connection between this 'evolutionistic vogue' and Hinton's hyperspace philosophy, noting that it 'was also a specific and significant response' to this trend (p. 186). The viewpoint afforded to these 'Overminds', or the collective 'Mind of the Race', begins to sound very similar to the view from 'higher space'. Boon explains that the developing self-consciousness of the 'Mind of the Race' has deep implications for the peaceful progress of humanity—throughout the text he engages in frequent diatribes about the impending disaster of the First World War—and Hinton expresses similar ideas in his most socially-inclined discursive text, *A New Era of Thought*: 'to our ordinary space-thought, men are isolated, distinct, in great measure antagonistic. But with [...] higher

²⁴¹ See P. Bridgewater, *Nietzsche in Anglosaxony: A Study of Nietzsche's Impact on English and American Literature* (Leicester and New York: Leicester University Press, 1972), p. 56.

²⁴² For examples of Nietzsche scholarship which support my claim here, see M. Heidegger, *Nietzsche, Volume II: The Eternal Recurrence of the Same*, trans. by D. F. Krell (San Francisco: Harper and Row, 1984); H. McDonald, 'Henry James as Nietzschean: The Dark Side of the Aesthetic', in *Partisan Review* 56.3 (summer 1989): 391-405 and R. Gooding-Williams, *Zarathustra's Dionysian Modernism* (Stanford: Stanford University Press, 2001). Although Wells is not necessarily consistent in his use of Boon as a mouthpiece of his own opinions, he does not appear to be consciously disagreeing with Boon's 'Mind of the Race' theory here.

²⁴³ See also E. Bentley, *The Cult of the Superman: A Study of the Idea of Heroism in Carlyle and Nietzsche, with Notes on Other Hero-Worshippers of Modern Times* (London: Robert Hale, 1947).

thought, it is easily seen that all men may really be members of one body, their isolation may be but an affair of limited consciousness' (p. 97).²⁴⁴ Hinton wants to make his readers aware of a space or a condition of being that transcends the petty differences of everyday life, and it is in this spirit that Boon imagines a transcendent conglomeration of human consciousness, the 'Overminds' that can look impartially upon the three-dimensional world. Both Wells and Boon argue that the Jamesian aesthetic is a barrier to the awakening of these 'Overminds'; however, the common concern of both Wells and James with movement across hierarchies and perspectives stems from a shared interest in consciousness-expansion, and it resonates throughout the contemporaneous hyperspace philosophy of Hinton. One function of the fourth dimension, in Hinton's writing, is as a transcendental space that dissolves difference. However, the dimensional analogy, and the hierarchy that it implies, also creates a new distinction, between those who are aware of this higher space, and those who are not. McGurl observes these contradictory ideological impulses in his analysis of the dimensional analogy in Abbot's *Flatland*:

The ideological significance [...] is still an open question: Does it suggest that seen from a higher dimension, Flatlanders achieve a moral equivalence more important than their class differences, that they are equal in the eyes of an all-seeing God? Or does it rather suggest the existence of an ultraexclusive space that might be inhabited by a few godlike persons—a technology of social distinction [...]? The answer [...] is that it is able to imply both of these positions at the same time. (p. 61)

Thus by reading Wells and James through the discourse of the fourth dimension, it becomes possible to understand how—contrary to McElderry, Jr's claim that it is a 'wonder'—'that two such different men found reason to enjoy each other so much and so long' (261). As Boon and Wells have their 'Overminds' and 'Samurai', a priestly class of

²⁴⁴ See also McElderry, Jr, who writes that 'though the chapter on James seems to have been written in retaliation to James's essay early in 1914, the publication of it in *Boon* is perhaps one measure of what the war could do to men's nerves' (262).

intellectual aristocrats first introduced in *A Modern Utopia*, James has his central consciousness, who sees and understands the most, and whose knowledge of the overall situation depicted within the novel is closest to James's own. The central consciousness in James therefore occupies the privileged and isolated space of a higher consciousness, a perspective that transcends the understanding of other characters and most resembles that of James, their author, who resides in an extra-textual dimension of space. Conversely, in re-examining the conflict between James and Wells, we are able to better understand the conflicting tensions within Hinton's hyperspace philosophy as well. The paradox in both cases is perhaps best expressed as what I have described as the hyperrealism of hyperspace philosophy. Both James and Wells argue that their own brands of realism are more adept at accessing the 'real' than the others', and both achieve this sense of hyperrealism by fracturing or permeating the self-contained world of the text. In the next section I will turn to explore James's work, and this kind of hyperrealism, in greater detail.

Section Three: *Scientific Romances*, the Second Series (II)

In his preface to the New York Edition of *What Maisie Knew*, James refers to his ‘incorrigible taste for gradation and superpositions of effect; his love [referring to himself in the third person], when it is a question of picture, of anything that makes for proportion and perspective, that contributes to a view of *all* the dimensions’.²⁴⁵ I am not implying that James is making specific reference to the fourth dimension, or to Hinton’s hyperspace philosophy; there is no evidence that James read Hinton. However, the concept of the fourth dimension was a popular notion by the turn of the century, and it is certain that James was at least aware of it. Several members of James’s circle were interested, to varying degrees, in hyperspace philosophy. James read Wells’s early work, including *The Time Machine*, which deals explicitly with four-dimensional geometry. In addition to Wells, Joseph Conrad and Ford Madox Ford collaborated on a novel, *The Inheritors: An Extravagant Story* (1901), about the invasion of the British political scene by socialist revolutionaries from the fourth dimension. James was also friends with George du Maurier, and he reviewed his novel *The Martian* (1897), which mentions the fourth dimension and higher dimensionality as well. Finally, Henry’s brother, William, corresponded with Hinton from around 1892 until the latter’s death in 1907. My examination of James in relation to the fourth dimension is not concerned with identifying James as a hyperspace philosopher; rather, I wish to examine the ways in which the contemporary, popular conception of the fourth dimension of space resonates within the Jamesian fictional aesthetic. In examining James’s work from this perspective, I argue that the traditional critical opposition of the Jamesian art of fiction against the Wellsian

²⁴⁵ H. James, ‘Preface to “What Maisie Knew”’, in *The Art of the Novel*, (New York and London: Charles Scribner’s Sons, 1947), pp. 140-158, p. 153, original emphasis. I will refer to this collection as *AN*.

splintered narrative, as well as the opposition of nineteenth century 'realism' to twentieth-century Modernism, begins to break down.

'The pattern of the spiral dialectic' in the fiction of Henry James

It is possible to observe a common tendency in the work of both James and Wells. In his study of James and Romanticism, Daniel Mark Fogel draws attention to the underlying pattern of James's most structurally schematic novel, *The Awkward Age*:

The diagram James drew of the ten books through which the intrigue is played out—a drawing, as he relates, of 'small rounds' in 'the neat figure of a circle'—implies the pattern of the spiral dialectic, rounding back to its point of origin.²⁴⁶

The Awkward Age—which begins with its first book, 'Lady Julia'—ends with a book named after Lady Julia's granddaughter and modern replica, Nanda. Here we have a circling back to origins, but not without alteration. Nanda is *not* Lady Julia; her circumstances do not allow for her to be an *exact* replica of her grandmother. Rather, Nanda is an expression of her grandmother's spirit and temperament, as exposed to and influenced by the 'modern' mores of her mother's social circle in London. The differences between Nanda and Lady Julia are therefore a result of their divergent experiences. There is repetition with variation here, reminiscent of Emerson's 'system of concentric circles', undergoing occasional 'slight dislocations, which apprise [sic] us that this surface on which we now stand is not fixed, but sliding'.²⁴⁷ However, the pattern in James's fiction, as J. A. Ward also notes, is more aptly described as that of a spiral rather than a circle.²⁴⁸

This spiral pattern of subtle expansion of human consciousness in James can be read as an updated version of Emerson's expanding circles, a connection which Jonathan Levin

²⁴⁶ D. M. Fogel, *Henry James and the Structure of the Romantic Imagination* (Baton Rouge and London: Louisiana State University Press, 1981), p. 15. I will refer to this text as *HJRI*.

²⁴⁷ R. W. Emerson, 'Circles', in *Essays and Lectures*, (New York: Library of America, 1983), pp. 403-414, p. 409.

²⁴⁸ J. A. Ward, 'The Ambassadors as a Conversion Experience', in *Southern Review* 5 (1969): 350-374, 366, 368.

makes, describing the movement in both writers as a 'poetics of transition': 'the Emersonian self is [...] a circle always expanding into broader circles by means of ceaseless crossings and transitions'.²⁴⁹ The figure of the spiral, rather than Emerson's set of concentric circles emphasises the 'sliding' nature of the transitions between levels of consciousness, rather than the metaphoric 'jumps' required between the disconnected circles.

A contemporaneous description of this spiral pattern can be found in Wells: in an 1894 essay titled 'The Cyclic Delusion', Wells claims that the apparent cycles identified in contemporary biological, mathematical and astronomical theories 'seem cyclic only through the limitation of our observation'.²⁵⁰ Rather, Wells argues, natural cycles repeat, but always with variation. Species change over time, accumulating various traits until they are entirely distinct from their ancestors: 'the great stream of the universe flows past us and onward' (p. 113). This movement, of 'circular repetition and change, a recurrence with variation', as Scheick describes it, 'graphically [...] may be depicted as a spiral' (p. 32). The pattern of the spiral, Scheick continues, also accurately represents the impulse behind Wells's splintering frame technique:

As the intrinsically four-dimensional human mind increasingly clarifies, it expands the circumference of the preceding framework circumscribing that mind's thought; this enlarged ring, as it were, becomes the new framework, which in turn is to be splintered outwardly and so on ad infinitum. (p. 33)

Thus Wells's attempts to splinter the frame of the text are, in effect, attempts to push his readers to attain a higher form of consciousness, or 'a view of *all* the dimensions'. Fogel

²⁴⁹ J. Levin, *The Poetics of Transition: Emerson, Pragmatism, & American Literary Modernism* (Durham and London: Duke University Press, 1999), p. 30.

²⁵⁰ H. G. Wells, 'The Cyclic Delusion', in *H. G. Wells: Early Writings in Science and Science Fiction*, ed. by R. M. Philmus and D. Y. Hughes (Berkeley and London: University of California Press, 1975), pp. 110-113, p. 112, reprinted from the *Saturday Review* 8 (Nov. 10, 1894): 505-506.

notes that, unlike Wells's spiral pattern of positive progression, 'the great irony of the conclusion' of *The Awkward Age* is 'that the direction of the spiral may seem to be down rather than up'.²⁵¹ The ending of the novel appears to imply that Nanda is worse off for her exposure to the morally bankrupt society of her mother; Nanda's 'modernity' lies in the fact that she is *not* sheltered from the adulterous intrigues of her elders. In terms of the growth of consciousness, then, the spiral of *The Awkward Age* is still an expanding one. While Hinton and, in later years, Wells, focus on the material, life-enhancing possibilities of expanding human consciousness, in *The Awkward Age*, James draws attention to the more ambiguous effects of increased knowledge.

The spiral pattern of expanding consciousness can be found in other James novels as well. Wells complains, via Boon, that James chooses insignificant subjects for his stories.²⁵² Indeed, especially in his later fiction, James's focus on action and plotting is minimal. Ward notes that 'in many of James's novels and tales the structure derives not from the external action, but from the developing awareness of the central consciousness'.²⁵³ Levin makes a similar observation, writing that James's 'characters and his narrative voice do not simply develop or evolve through the course of the novel; rather, the process of development utterly overtakes the narrating and the narrated selves' (p. 118). Thus the 'plot' of a Jamesian narrative is usually figured as the development of higher perception in one or more characters. It is easy to imagine the structure of this

²⁵¹ *HJRI*, p. 16. Of course, Wells also wrote novels where the spiral is 'down rather than up'. A key example is his first novel, *TTM*, where the human race has evolved into two distinct, and 'degenerate' species. Although both Wells and James often dramatise increased knowledge as a kind of 'Fall' for their characters, the carefully-constructed *structure* of the expanding spiral of consciousness in their fictions implies a faith in the positive aspects of consciousness-expansion, for the reader, at least.

²⁵² Boon exclaims that the Jamesian plot 'is like a church lit but without a congregation to distract you, with every light and line focused on the high altar. And on the altar, very reverently placed, intensely there, is a dead kitten, an egg-shell, a bit of string' (p. 100).

²⁵³ J. A. Ward, *The Search for Form: Studies in the Structure of James's Fiction* (Chapel Hill: University of North Carolina Press, 1967), p. 42. I will refer to this text as *SFF*.

development as a spiral, because, as Ward observes, the 'action', in James is often progressively repetitive: 'the rhythm of *The Ambassadors* is both repetitive and progressive. But the outward action is almost wholly repetitive; the progressive is limited to the growth of Strether's knowledge' (*SFF*, p. 47). The only change in the recurring cycle of dinners, parties and conversation in which Strether participates throughout the novel comes from his constant revising of the 'truth' of Chad's situation. With each revision of his understanding of Chad's reasons for not returning to Woollett, Strether's view of the situation in Paris grows in a way that is analogous to the change in perspective that occurs with the shift to a higher dimension, or an expanded frame, and James even stages the scene of Strether's key realisation of Chad and Madame de Vionnet's affair as a violation of his perceptual frame. On his train ride out of Paris into the French countryside, where he intends to experience 'that French ruralism [...] into which he had only looked through the little oblong window of the picture frame', Strether literally steps into his preconceived model for rural France, one influenced by a Lambinet painting he had seen several years before in Boston.²⁵⁴ Later, after hours of pastoral wandering, Strether observes that he 'had meanwhile not once overstepped the oblong gilt frame. The frame had drawn itself out for him, as much as you please; but that was just his luck' (p. 477).²⁵⁵ His luck changes, however, when Chad and Madame de Vionnet literally invade the frame of Strether's pastoral scene, as Alexander Gelley observes:

What Strether sees when he recognizes the guilty couple dispels the sphere of 'fancy' or 'art' and brings into play a moral dimension. The inward aesthetic attitude had been characterized in terms of

²⁵⁴ H. James, *The Ambassadors* (London: Heron Books, n.d.), p. 471.

²⁵⁵ Richard Salmon writes of this scene: 'Rather than construing the Lambinet as an autonomous work of art [...], Strether inextricably dissolves the boundary between what is inside and what is outside the frame'. See *Henry James and the Culture of Publicity* (Cambridge: Cambridge University Press, 1997), p. 174.

framing and distance; the destruction of the frame, the intrusion of a more immediate reality induces a moral awakening in Strether.²⁵⁶

Here is a highly developed dramatisation of the violation of a preconceived conceptual model of passive 'reading', akin to Wells's short story 'Through a Window'. As Levin similarly notes, 'such passages are often marked by figures of violence or disruption, as, for example, in the famous scene late in *The Ambassadors* when Chad and Madame de Vionnet erupt through the surface of Strether's meticulously arranged scene' (p. 118). Strether, like the narrator in Wells's story, is abruptly reminded of the world outside of the 'text' in which he has been wandering, and analogically, the reader is reminded of the constructed nature of the perceptual models through which he or she encounters reality and the fragile nature of this reality. Just as Wells writes of the importance of 'scepticism of the instrument',²⁵⁷ Gelley observes that 'James never tired of demonstrating that perception [...] is man's [sic] pre-eminent means of access to a reality that is never wholly congruent with the perceptive faculties' (420). In the French pastoral scene, the incongruence of Strether's 'perceptive faculties' and the illicit element of Chad's 'virtuous attachment' is brought sharply to his attention. Suddenly possessing 'a view of *all* the dimensions', Strether is raised to the level of consciousness to which James himself, as a writer, aspires.²⁵⁸

²⁵⁶ A. Gelley, 'The Represented World: Toward a Phenomenological Theory of Description in the Novel', in *The Journal of Aesthetics and Art Criticism* 37.4 (Summer 1979): 415-422, 421.

²⁵⁷ This essay of the same name is included as an appendix to *Tono-Bungay and A Modern Utopia*, pp. 494-504, with the note that it is 'a portion of a paper read to the Oxford Philosophical Society November 8, 1903, with some revision, from the version given in *Mind*, vol. xiii (N.S.), No. 51'. Here Wells warns that '*the forceps of our minds are clumsy forceps, and crush the truth a little in taking hold of it*' (p. 498, original emphasis).

²⁵⁸ Salmon notes the emphasis on framing throughout *The Ambassadors*, with particular reference to what he calls 'the spectacle of the book'. Writing of Strether's observation of a set of "lemon-coloured" paper bindings of French fiction', 'draws attention to the materiality of his own fictive status. As a character in a book that already encodes the conditions of its own commodification, Strether is simultaneously and self-consciously inside and outside the frame of his own representation' (pp. 166, 176).

The ability to view a situation from an authorial perspective is, in many ways, the pinnacle of achievement for the Jamesian character, as Timothy Lustig argues: ‘in its quest for subjective freedom, the Jamesian centre of consciousness is at some level aspiring to the position occupied by James the writer’.²⁵⁹ One such centre of consciousness that achieves this subjective freedom is Fleda Vetch. In his preface to the New York Edition of *The Spoils of Poynton*, James writes that ‘Fleda almost demonically both sees and feels’.²⁶⁰ As an ‘almost’ demonic figure who is able to traverse the boundary between the constructed, fictional space in *The Spoils*, and the view from James’s own position in the extra-textual, ‘real’ world, Fleda achieves a sort of subjective freedom similar to that of the student in Hinton’s ‘The Persian King’. The other characters with whom Fleda shares the text are not even aware of the possibility of this kind of autonomy, as James notes in the preface to the New York Edition:

Thus we get perhaps a vivid enough little example, in the concrete, of the general truth, for the spectator of life, that the fixed constituents of almost any reproducible action are the fools who minister, at a particular crisis, to the intensity of the free spirit engaged with them. [...] The free spirit, always much tormented, and by no means always triumphant, is heroic, ironic, pathetic or whatever, and, as exemplified in the record of Fleda Vetch, for instance, ‘successful’, only through having remained free. (p. 15)

Fleda’s ‘freedom’ is highlighted through her relationship with James, and through comparison with the other characters in the novel. Unlike these ‘fixed constituents’, Fleda has the ability to roam between multiple viewpoints: at different times she empathises with Owen, Mrs Gereth, Mona, Poynton, the deceased maiden-aunt at Ricks and even—as I will argue—James himself. This ability to both see and feel in multiple ways allows Fleda to choose a course of action that preserves her autonomy, as Millicent Bell highlights:

²⁵⁹ T. Lustig, *Henry James and the Ghostly* (Cambridge: Cambridge University Press, 1994), p. 63.

²⁶⁰ H. James ‘Preface to “The Spoils of Poynton”’, in *AN*, pp. 119-139, p. 129.

She is sufficiently imaginative to be capable of a variety of choices; she is not determined and predictable like Mrs. Gereth with her single obsession. [...] The 'things,' though she admires them, do not govern her behavior; she has no desire to possess them [...]. Neither does her love for Owen overcome her reluctance to own him; she renounces the desire to possess him as though he were a thing to be wrested from someone else.²⁶¹

Fleda is 'free' because the relationship that she has with the material world represented within the text is different from that of the other characters in the novel. This includes interpersonal relationships, between self and other, as well: the other women in *The Spoils* view each other and Owen as either antagonists or pawns that must be moulded to one's own will.²⁶² Fleda's self-possession is thus akin to that of Hinton's student, who is able to detect the presence of the king, and thereby detach his own will from the king's manipulative system of pain/pleasure dynamics. Hinton distinguishes such characters as 'true personalities conscious of being true selves, the oneness of all of them lying in the king, but each spontaneous in himself and absolute will, not to be merged in any other' (*SR 2*, pp. 127-128). Clarke illustrates the application of the dimensional analogy here to the mass of valley-dwellers who remain unaware of the king: 'the relation of the valley subjects to the king embodies the susceptibility to manipulation, the puppetlike dependency, that would exist in the relation of the three-dimensional being to a hyperbeing' (p. 116). Making a direct comparison between Fleda's 'quasi-authorial intelligence' and the dimensional analogy, McGurl looks to *Flatland*, noting that 'similarly did Abbot's A. Square, rising above his two-dimensional world and seeing it whole, experience the comparative stupidity of those living below' (p. 75). In one sense,

²⁶¹ M. Bell, *Meaning in Henry James* (Cambridge, MA and London: Harvard University Press, 1991), pp. 214-215.

²⁶² L. C. Mitchell reads the relationship between self and other in *SP* as the 'central ethical issue': 'How do we possess one another, and what might a marriage of equals require from one to preclude simply being possessed?'. See Mitchell, "'To suffer like chopped limbs': The Dispossession of *The Spoils of Poynton*", in *The Henry James Review* 26 (2005): 20-38, 35.

as McGurl observes, Fleda—and all literary characters—are literally Flatlanders like A. Square because they are all confined to the plane surface of the page of the text. It is the combined effort of the author and the reader that ‘lifts’ them into a ‘fleshed-out’—albeit imaginary—‘three-dimensional’ existence. Both Hinton’s student and A. Square are aware of their status as lower-dimensional beings, and it is through this awareness that they establish a certain amount of subjective autonomy. A large part of Fleda’s subjective freedom stems from her awareness of something that lies outside of herself, the other characters and even the ‘spiritual’ aura of Ricks. In the following analysis of *The Spoils*, I will attempt to illustrate how—by examining this novel through the lens of the dimensional analogy—this awareness can be read as a connection between Fleda and her author, James.

The Spoils of Poynton (1896-97)

Critics do not usually number *The Spoils* among James’s ghost stories; Lustig, in his study of *Henry James and the Ghostly*, mentions it only twice in passing. However, there is an element of the ghostly that permeates this text.²⁶³ The ‘spoils’ themselves—the priceless antique objects that constitute the ‘bone of contention’ in the novel—provide this aura by being ‘conspicuously absent’ from the text, as Bill Brown notes:

Despite the novel’s eventual reference to two specific objects—a ‘great Italian cabinet’ in the red saloon and the exquisite Maltese cross [...] Poynton, above all, is awash in overarching characterization [...]. James’s mise-en-scène at Poynton is a matter of aura, not artefacts.²⁶⁴

²⁶³ See Lustig, pp. 90, 139. Other critics have commented on the ghostly aspects of this novel. F. Sarris, in ‘Fetishism and *The Spoils of Poynton*’, in *Nineteenth-Century Literature* 51.1 (June 1996): 53-83, claims that one could interpret *SP* as being ‘propelled by the deceased Mr. Gereth’ (69). Sarris is examining this novel in light of the ‘absent father’, a reading that, while interesting, is not pertinent to my discussion here.

²⁶⁴ B. Brown, ‘A Thing about Things: The Art of Decoration in the Work of Henry James’, in *The Henry James Review* 23.3 (Fall 2002): 222-232, 226. See also T. J. Otten, ‘*The Spoils of Poynton* and the Properties of Touch’, in *American Literature* 71.2 (June 1999): 263-290, who claims that ‘in *The Spoils* [...] James is committed to making visible a moment in which vision is largely subordinated’ (264). Otten also touches briefly on the ghostly element of this novel.

Like Hinton's king, the objects of Poynton remain an un-representable, absent presence, which is recognised only by a select few. This absence provides the invisible locus of James's drama. In his remarks in the preface, James writes that, for him, Fleeda acts as a stand-in for the invisible things of Poynton: 'the real centre [...] would have been the Things, always the splendid Things' (*AN*, p. 126). Fleeda, then, is not only the mediator between the Gereths, but also between 'the splendid Things' in the author's imagination, and the reader. 'In other words', as Brown writes, "'the things" names an absent centrality' (230).

In the preface, James claims that the limitations of space within the original periodical publication of the novel prevented him from fully describing the spoils (pp. 126-127). Market issues aside, however, the fact that the objects of Poynton remain visually absent supports Tzvetan Todorov's observation that 'the secret of the Jamesian narrative is precisely the existence of an essential secret, of something not named, of an absent and superpowerful force which sets the whole present machinery of the narrative in motion'.²⁶⁵ James is unable or unwilling to describe this 'absent and superpowerful force' directly to his readers; rather, he illuminates it through the eyes of one of his characters or, as Todorov notes, 'it is presented [...] through someone's vision' (p. 151). The role of this 'reflector' is to gradually reveal the multiple aspects—'all the dimensions'—of the

²⁶⁵ T. Todorov, *The Poetics of Prose*, trans. by R. Howard (Oxford: Basil Blackwell, 1977), p. 145. Critics of *SP* have taken various stances on the relationship between James's statements in the preface and the actual text of the novel. See, for example, N. Baym, 'Fleeda Vetch and the Plot of *The Spoils of Poynton*', in *PMLA* 84 (Jan. 1969): 102-111, who concludes that 'the whole preface in fact is a recasting of *The Spoils of Poynton* in line with the author's changed interests' (111); Sarris, who argues for a sympathetic reading of Mrs Gereth, stating that 'James's intentions surely cannot simply be ignored, but they can only dimly, and somewhat ineffectually, haunt the novel like one of its ghosts' (80); and Brown, who accepts James's claims within the preface, with reservations: 'However trumped up this narrative of the novel's composition, it helps to explain why Fleeda mediates the triumphant life of the spoils' (230).

situation depicted within the text.²⁶⁶ This is the role that Strether plays in *The Ambassadors*, and it is also Fleda's role in *The Spoils*, according to Merle A. Williams's description of this novel as 'a work whose preliminary assumptions are repeatedly revised, interrogated, and redirected in light of fresh evidence'.²⁶⁷ This process of reasoning can be imagined as an expanding spiral of consciousness, or as Hinton's 'Arabic method of description', described in 'The Persian King'. Here Hinton is using numerical notation as a metaphor for the means by which the student—and the reader of the text, by implication—can become aware of the invisible king, or the fourth dimension of space. This pattern of assimilation and adjustment can be applied to many of James's central characters, including Fleda who learns to appreciate the absent presence of the spoils and the author himself. It is therefore telling that James does not physically describe the spoils, or even name them. Fleda's sensitivity to this invisible centre is a sign of her empathy with James the author, of which James seems to be aware: 'Fleda's ingratiating stroke for importance [...] had been that she would understand; and [...] the progress and march of my tale became and remained that of her understanding' (*AN*, p. 128). Thus the true plot of this novel appears to be a charting of Fleda's 'growing consciousness of the whole, or something ominously like it' (p. 128).

How does James figure this 'consciousness of the whole'? Fleda, appreciator of invisible things, is also able to 'read' the character of the maiden-aunt, which lingers in the objects and spaces of the house at Ricks. The maiden-aunt never appears in the novel; she

²⁶⁶ See also O. Segal, *The Lucid Reflector: The Observer in Henry James's Fiction* (New Haven and London: Yale University Press, 1969). Segal notes that 'the Jamesian observer [is] an interesting subject' because he or she 'fulfills [sic] most of the authorial functions of the traditional omniscient author' (p. ix).

²⁶⁷ M. A. Williams, *Henry James and the Philosophical Novel: Being and Seeing* (Cambridge: Cambridge University Press, 1993), p. 164. As Williams observes, this is also the methodology of William James's 'ambulatory' approach (pp. 141-142).

has been dead for years, and James gives little information about what kind of character she would have been. It is the combination of Fleda's experiences throughout the course of the novel, and the work of Mrs Gereth, a 'ministering fool', who unconsciously rearranges the household objects at Ricks in such a way that makes this unactualised character perceptible to Fleda. Early in the novel, on her first visit to Ricks, Fleda declares the house 'charming', but still finds it necessary to avert her eyes from the tacky ornamentation in the garden and the house's interior (p. 59). Upon her return to Ricks at the end of the novel, Fleda's response is more dramatic: 'The effect [...] arrested her on the threshold: she stood there stupefied and delighted at the magic of a passion which such a picture represented the low-water mark' (p. 195). Fleda's consciousness has developed over the course of the novel to the point where she is able to read James's characterisation of the maiden-aunt—'the magic' of the 'passion' which had been her life—in the 'four sticks' of furniture she has left behind (p. 196). However, there is something else, something beyond the ghost of the maiden-aunt, which permeates and contributes to the atmosphere at Ricks. Tellingly, Fleda describes this presence as an absence, leaving

'the impression somehow of something dreamed and missed, something reduced, relinquished, resigned: the poetry, as it were, of something sensibly *gone*'. Fleda ingeniously worked it out. 'Ah, there's something here that will never be in the inventory!'.²⁶⁸

The inventory of the maiden-aunt's belongings at Ricks and the material text of the novel in which they all reside, are both superseded here. There is an analogy between the 'something' that Fleda recognises as lying outside of the text of the inventory, and the presence that exists outside of her own text, *The Spoils*. When asked by Mrs Gereth to give this 'something a name', Fleda responds:

²⁶⁸ *The Spoils of Poynton, Vol. IV, The Bodley Head Henry James* (London: Bodley Head, 1967), p. 196, original emphasis. I will refer to this text as *SP*.

'I can give it a dozen. *It's a kind of fourth dimension*. It's a presence, a perfume, a touch. It's a soul, a story, a life. There's ever so much more here than you or I. We're in fact just three!'

'Oh if you count the ghosts—!'

'Of course I count the ghosts, confound you!' (p. 196, original emphasis).

The third member of the party at Ricks, it is implied, is the ghost of the maiden-aunt. Fleda is able not only to detect this ghost, but also to 'ingeniously and triumphantly' work 'it' out: the sense of 'something' over and beyond the ghost. This 'something', as Lustig notes, can be understood as the authorial presence: another sort of 'ghostly encounter [that] represents a particularly intense adventure of consciousness, an access of liberated and disencumbered experience, and one could argue that it brings the ghost-seer extremely close to James himself' (p. 63). Fleda senses a connection between her story and the story of another being that haunts the text. In her attempts to describe this connection, Fleda struggles to find a precise vocabulary. She must substitute 'a dozen' names for this experience, and it is appropriate that one of the labels she chooses is 'a kind of fourth dimension'. Fleda's realisation that 'there's ever so much more here than you and I' even beyond the ghostly presence of the maiden-aunt—whom she includes in the 'you and I'—can be read alongside higher-dimensional parables such as those of Hinton and Wells.²⁶⁹ There is an implied hierarchy of relations here, between Fleda and the other characters in *The Spoils*, and between Fleda and her author, James. Fleda is able to understand and appreciate the invisible centre of the text—the spoils—because her understanding is closest to that of James's. Like Hinton's student, Fleda is also aware of an invisible, conscious agent above and beyond herself and the other characters in *The Spoils*. James does not puncture the fictional world of this novel in the way that Wells shatters the

²⁶⁹ Jenkins makes an observation in her discussion of the trope of the 'void' in early nineteenth-century literature that is relevant here: 'We are only in a position to identify a gap or a hole when we have come to recognize the existence of the fabric in which the gap exists [...]. Voids signify both absence and presence at the same time' (p. 209).

mimetic frame of his own narratives; however, he projects his presence into the story by having Fleda recognise the 'soul' or 'life' beyond herself, Mrs Gereth and the ghosts of Ricks.

Turning to a different work from this transitional period in James's career, we can observe James taking another protagonist on an 'intense adventure of consciousness', this time outside of the real, 'lived' space of the text into a 'place' that seems to exist outside of representable time and space altogether. This space is perhaps the most heavily infused with authorial presence depicted within the entire James canon. James's characters in this story also give this space multiple names, but for the main protagonist whom James grants access to this 'liberated and disencumbered experience', it is known simply as 'The Great Good Place'.

'The Great Good Place' (1900)

Years after James's death, Ford Madox Ford recalled a conversation between himself and James, concerning James's story, 'The Great Good Place'. James and Ford had been out walking one day, Ford recalls, when James began:

'There are subjects one thinks of treating all one's life...And one says they are not for one. And one says one must not treat them...all one's life. All one's life...And then suddenly...one does...*Voilà!*' [James] had been speaking with almost painful agitation. He added much more calmly: 'One has yielded to temptation. One is to that extent dishonoured. One must make the best of it.'²⁷⁰

According to Ford, in writing 'The Great Good Place', James

considered he had overstepped the bounds of what he considered proper to treat—in the way of his sort of mysticism. [...] For there were whole regions of his character that he never exploited in literature, and it would be the greatest mistake to forget that the strongest note in that character was a mysticism different altogether from that of the great Catholic mystics. It resembled rather a perception of a sort of fourth dimensional penetration of the material world by strata of the supernatural [...]. (pp. 25-26)

²⁷⁰ F. M. Ford, 'Henry James', in *Mightier than the Sword: Memories and Criticisms*, pp. 13-37, p. 25.

Of course, Ford's recollections and opinions of James's character are the subjective memories of a writer who was fond of mythologising his own past, and the pasts of those in his circle; however, I quote this passage at length to illustrate the way in which the concept of the fourth dimension carried meaningful currency in the vocabulary of James's contemporaries. This fourth dimension of hyperspace philosophy functioned as a loose description of a secular, yet spiritual experience, a sensation of something above and beyond everyday, 'lived' reality: something 'super' natural or 'hyper' real. An appropriate analogy for the experience of something above or beyond material reality within the represented, textual world of Fleda Vetch and of the protagonist of 'The Great Good Place', George Dane, might appear as the sensation of something extra-textual, or as a space permeated with James's presence. In my reading of 'The Great Good Place', I argue that the space of the Place actually functions as a kind of 'non-representational space' where Dane is allowed to retreat and regain his sense of self—his own creative agency as an author—through communion with James's authorial consciousness. Looking to the text we can observe such 'odd moments' of encounter between Dane and some unseen agency:

[Dane] analysed, however, but in a desultory way and with a positive delight in the residuum of mystery that made for the great agent in the background the innermost shrine of the idol of a temple; there were odd moments for it, mild meditations when, in the broad cloister of peace or some garden-nook where the air was light, a special glimpse of beauty or reminder of felicity seemed, in passing, to hover and linger.²⁷¹

Dane's ghostly encounters with this agent are certainly more frequent than Fleda's, and seemingly uninitiated by himself.

²⁷¹ H. James, 'The Great Good Place', in *Henry James: Stories of the Supernatural*, ed. by L. Edel (London: Barrie and Jenkins, 1971), pp. 567-597, p. 589.

'The Great Good Place' begins with Dane feeling overwhelmed by his worldly success as a writer, and fearing that he is losing touch with his inner genius. He feels his professional and social relations—letters from friends and enemies, journals and books to be reviewed, breakfast and lunch dates—stifling his enjoyment of life, and with it, his creativity. Dane dreams of escaping these relations, however 'he knew again as well as ever that leaving was difficult, leaving impossible—that the only remedy, the true soft effacing sponge, would be to *be* left, to be forgotten' (p. 571, original emphasis). Dane's salvation comes when a younger, struggling writer visits him. At this crisis point in his life, wishing to "think, to cease, [...] to do the thing itself", Dane jumps at the younger man's offer to take on the burden of his work while he escapes to the Place. Dane's transition to the Place is not described or explained. As one of the 'Brothers' of the Place asks Dane, "He gave you the address?" (p. 585). Dane simply explains that the younger writer

'was thinking it out—feeling for it, catching it. [...] He suddenly sprang up and went over to my study-table—straight down there as if to write me my prescription or my passport. Then it was—at the mere sight of his back, which was turned to me—that I felt the spell work'. (pp. 585-586)

Under the 'spell' of the younger writer, Dane comes to consciousness in the Place. He is a guest in the boarding house of this Place, where James seems to constantly intrude upon his 'mild meditations', to 'hover and linger' at will. There is no violence to these intrusions, however. Unlike Strether's shock as his Lambinet scene is invaded, or Fleda, who is 'arrested' at the threshold of Ricks, within the dreamlike borderland space of the Place there is a perpetual sound of 'slow footsteps', of 'a quiet presence' passing somewhere in the background (pp. 578, 581). This fluidity makes the story more of a supernatural than a realist text; however, this is not—as Edel observes—a straightforward 'ghost story'. It is not really a ghost story, yet there is a dreamy, fantastic quality to it that

prevents one from grouping it with James's more strictly mimetic fiction.²⁷² Edel includes it in his collection of James's supernatural stories, calling it 'perhaps one of the slightest of the quasi-supernatural order in James'.²⁷³ It seems that here James is the 'ghost' that haunts the Place, and, paradoxically, his presence within the text makes this story somehow more 'realistic' than his 'realist' fiction. James, infiltrating the space of his own text, brings with him a realism of a different order.

James is uncompromising about the relation that the reader of 'The Great Good Place' must have to this text:

There remains 'The Great Good Place' (1900)—to the spirit of which, however, it strikes me, any gloss or comment would be a tactless challenge. It embodies a calculated effect, and to plunge into it, I find, even for a beguiled glance—a course I indeed recommend—is to have left all else outside. There then my indications must wait.²⁷⁴

Ford's observation that James was reticent about 'The Great Good Place' is also reflected here in the preface to the New York Edition of this text. In this brief, cryptic comment on the story, James's assertion that 'any gloss or comment' on its spirit 'would be a tactless challenge' parallels Ford's reconstruction of his comments on the story. James also remarks that he intended to embody a 'calculated effect' in 'The Great Good Place', but he does not offer us any clues here as to his intentions. However, if we consider his comments in the preface to *The Spoils* in light of Ford's recollections about James's delicacy concerning the subject of 'The Great Good Place', we can venture a possible conclusion. Writing in reference to Fleda, James remarks:

²⁷² Of course, there is sufficient evidence to read Dane's experiences in 'The Great Good Place' as simply a dream: he does wake up at the end of the story, having been apparently only napping through the day. Granville H. Jones approaches this text in this manner, describing it as 'a vision of the recovery of innocence'. See *Henry James's Psychology of Experience: Innocence, Responsibility, and Renunciation in the Fiction of Henry James* (The Hague and Paris: Mouton, 1975), p. 248.

²⁷³ L. Edel, 'Introduction to "The Great Good Place"', in *Henry James: Stories of the Supernatural*, pp. 567-570, p. 567.

²⁷⁴ H. James, 'Preface to "The Author of Beltraffio"', *AN*, pp. 232-240, p. 237.

One is confronted obviously thus with the question of the importances; with that in particular, no doubt, of the weight of intelligent consciousness, consciousness of the whole, or of something ominously like it, *that one may decently permit a represented figure to appear to throw.* (AN, p. 128, emphasis added)

In *The Spoils*, Fleda is given a hint of 'a presence, a perfume, a touch', which could be read as James's authorial presence. As I have noted, Fleda also describes this aura as 'a kind of fourth dimension'. While this 'supernatural' or extra-textual presence only briefly penetrates the 'material' world of James's story in *The Spoils*, in 'The Great Good Place' James takes Dane entirely out of the 'material' world and places him into constant contact with it. Perhaps, here, in allowing the reader to experience this 'Place' through the consciousness of Dane, James felt that he had overstepped the bounds of what 'one may decently permit a represented figure' to reveal.²⁷⁵

What exactly Dane experiences—the nature of the Place—is completely open to interpretation. This short story has received scant critical attention since it was published, perhaps because it is such an odd one—generically speaking—in the James canon. There is enough ambiguity about the 'quasi-supernatural' texture of this story to allow for much variation within the usually brief critical analyses of it.²⁷⁶ I will be moving away from

²⁷⁵ Donadio claims that throughout his fiction, James exhibits a 'clear desire to reserve, like God, certain prerogatives for himself as an author whose larger vision would inevitably exceed and frame that of his characters, no matter how lucid they might be' (p. 144). However, my readings of Fleda Vetch, and particularly, George Dane, complicate this claim.

²⁷⁶ R. E. Whelan, Jr claims that James has intentionally created a Christian allegory about God and intelligent design; M. E. Herx describes Dane's 'monomythical adventure' in terms of subconscious memory and universal archetypes; A. R. Tintner see evidence of James's 'clear-cut dependence' on Balzac in this story and W. Veeder inexplicably claims the story as proof that James's phase of 'self-therapy' after the disaster of *Guy Domville* did not end until 1901, when he published *The Ambassadors*. See Whelan, Jr, 'God, Henry James and "The Great Good Place"', in *Research Studies* 47.4 (December 1979): 212-220; Herx, 'The Monomyth in "The Great Good Place"', in *College English* 24 (February 1963): 39-43; Tintner, 'The Influence of Balzac's *L'Envers de L'Histoire Contemporaine* on James's "The Great Good Place"', in *Studies in Short Fiction* 9 (1972): 343-351 and Veeder, 'James and the Limitations of Self-Therapy', in *Henry James The Shorter Fiction: Reassessments*, ed. by N. H. Reeve (Basingstoke: Macmillan, 1997), pp. 171-189. I write 'inexplicably' in reference to this last essay because Veeder undermines his own argument that 'The Great Good Place' provides 'the last piece of the puzzle' and 'the missing link' in support of his claim that 'the therapy phase did not end with *The Awkward Age* in 1899, that self-therapy was still needed

these previous readings of 'The Great Good Place' in my discussion here. While I disagree with many of these interpretations of the story, both William McMurray and Sara S. Chapman make key observations that I will build upon. The beginning of the second chapter of 'The Great Good Place' informs us that Dane is now in the Place, but as McMurray highlights, 'how much time has lapsed and where the Place is, however, neither Dane nor the reader learns, for time and place seem not to exist'.²⁷⁷ Indeed, Dane appears to have stepped outside of regular time and space upon his entry into the Place. He dreamily muses on the constant sound of bells in the Place: 'How could they be so far and yet so audible? How could they be so near and yet so faint? How above all could they [...] be, to *time* things, so frequent? The very essence of the bliss of Dane's whole change had been precisely that there was nothing now to time' (p. 578, original emphasis). In the Place, Dane seems to have transcended the standard, lived time of 'reality'; however, he remains aware of its passing somewhere off in a removed and unlocatable space. In an exchange with another inhabitant of the Place, Dane attempts to ascertain their geographical location:

[Dane] asked with the first articulation as yet of his most elementary wonder:

'Where is it?'

'I should n't be surprised if it were much nearer than one ever suspected.'

'Nearer "town," do you mean?'

'Nearer everything—nearer every one.'

George Dane thought. 'Would it be somewhere down in Surrey?' (p. 579)

in the new century and was in fact concluded only with *The Ambassadors* in 1901', by noting that 'The Great Good Place' was actually composed in 1897 (p. 172). Two essays, J. W. Shroeder's 'The Mothers of Henry James', in *American Literature* 22.4 (January 1951): 424-431, and J. M. DeFalco's 'The Great Good Place: A Journey into the Psyche', in *Literature and Psychology* 8.2 (Spring 1958): 18-20, also provide readings of 'The Great Good Place' that draw heavily on birth imagery and Jungian archetypes.

²⁷⁷ McMurray, 'Reality in James's "The Great Good Place"', in *Studies in Short Fiction* 14 (1977): 82-83, 83. Chapman also observes the 'timeless' aspect of the Place. See 'Integrative Experience in "The Great Good Place"', in *Henry James's Portrait of the Writer as Hero* (Basingstoke and London: Macmillan, 1990), pp. 108-114, p. 109.

Dane, a new arrival to the Place, at first attempts to conceptualise it in terms of his experience in the outside world. He clearly displays the narrowness of his current worldview when he substitutes 'town'—or London—for the universe, and attempts to locate the Place as a bourgeois retreat somewhere in the Home Counties. I am inclined to agree with W. H. Auden's assessment that, in 'The Great Good Place', James 'is not describing some social Utopia, but a spiritual state which is achievable by the individual'.²⁷⁸ The Place is thus a state of being where time and space are reconfigured, which James allegorises as a physical space, a sort of club that is 'nowhere' and yet near everything.

It is possible for the 'location' of the Place to be "nearer everything—nearer everyone" because it does not inhabit a typically material space. Like the transcendental fourth dimension of hyperspace philosophy, the Place might lie right next to three-dimensional everyday reality but remain unnoticed because, in order to discover it, one would have to 'learn' to look for it in a way that is currently unimaginable to the average individual.²⁷⁹ While A. Square desperately repeats, 'Upward, not Northward' in an attempt to remember how to access the third dimension of space,²⁸⁰ when the time arrives to leave the Place, Dane worries that he will never be able to find his way back again: 'Was this a threshold perhaps, after all, that could be crossed one way?' (p. 594). From Dane's side of the threshold within the Place he is able to look outward onto a world that is unaware of his location. "The thing was to find out!" [...] "And when I think," said Dane, "of all the

²⁷⁸ Auden, 'The American Scene', in *The Dyer's Hand and Other Essays* (London: Faber and Faber, 1962), pp. 309-323, p. 322.

²⁷⁹ James's 1896 story 'The Figure in the Carpet', is similarly concerned with a privileged act of interpretation. Iser offers a reading of this story that is relevant to my discussion here, observing that after reading the novel which forms the basis of this story, the life of the character George Corvick 'is changed. But all he can do is report this extraordinary change—he cannot explain or convey the meaning' (*IR*, p. 10).

²⁸⁰ Abbott, pp. 191-197.

people who have n't and who never will!" He sighed over these unfortunates' (p. 578). Here, James physically places Dane in the position of a spectator. When Dane first finds himself in the Place, he observes:

This was the part where the great cloister, enclosed externally on three sides and probably the largest lightest fairest effect, to his charmed sense, that human hands could ever have expressed in dimensions of length and breadth, opened to the south its splendid fourth quarter, turned out the great view an outer gallery that combined with the rest of the portico to form a high dry loggia [...]. (p. 577)

One side of the cloister opens out to form a 'high' loggia, which provides a 'great view' over the countryside. Dane's position is thus one of an elevated and detached observer, whose perspective on the world is from a 'place'—James describes it as 'the scene of his new consciousness'—that is outside of conventional time and space (p. 576). During a conversation with a Brother in the Place, Dane and his companion sit together, observing 'the vague movements of the monster—madness, surrender, collapse—they had escaped' in the outside world. 'Their bench was like a box at the opera' (p. 580), James informs us. Thus, in the Place they are elevated to the position of spectators, rather than characters on the stage of representable 'reality'.

McGurl makes an interesting observation concerning the dimensional analogy and another set of Jamesian spectators, the Princess and Hyacinth in *The Princess Casamassima* (1887). In reference to the scene of the first meeting between Hyacinth and the Princess in the Princess's theatre box, McGurl writes: 'Here it is as though the fourth wall has fallen, actors and audience, bookbinders and princesses, [are] now dwelling in the same order of space' (p. 69). The fourth wall of Dane's cloister is literally missing, but the result is the opposite from that in *The Princess*. Hyacinth's entry into the Princess's box at the theatre brings him into the world of fiction—into such close proximity of the stage that

he cannot speak without disturbing the performance—and into a relationship with a princess who is, as McGurl reminds us, the only one of James's major characters to stray from the pages of one novel, *Roderick Hudson*, to another. While the resurrection of characters within a novelist's *oeuvre* is a common device of high Victorian realism, a way of enhancing the authenticity of a character by allowing them a life beyond their original text, the terms in which James describes the Princess's wandering between the two novels is suggestive of something beyond the ken of typical mimetic fiction. Citing the James's prefatory discussion of the of *The Princess*, McGurl notes that the revival of the Princess functions

as a penetration of fictive space, where by some 'obscure law' certain 'of a novelist's characters, more or less honourably buried, revive for him by a force or a whim of their own and "walk" round his house of art like haunting ghosts, [...] pressing their pale faces, in the outer dark, to lighted windows'. Hyacinth at the window of his sweetshop, the ghostly Princess at the lighted window at the 'house of art', befriend each other in the uncanny theater of fiction. (McGurl, pp. 69-70)

In 'The Great Good Place' we see another of James's characters cut loose from the tethers of the text: the dissolution of the 'fourth wall' in Dane's world allows him to step into the backstage area of 'the uncanny theatre of fiction'. Unlike Fleda, who is able to detect the presence of 'a life' beyond the 'real' world of her text, Dane is lifted out of his everyday life into a Place that is suffused with the presence of this extratextual 'life'.

There seems to be difficulty with finding an appropriate language to describe the Place. Dane often thinks of the Place in religious terminology:

This recalled disposition of some great abode of an Order, some mild Monte Cassino, some Grande Chartreuse more accessible, was his main term of comparison; but he knew he had really never anywhere beheld anything at once *so calculated and so generous*.²⁸¹

²⁸¹ James, pp. 577-578, emphasis added. Edwin Sill Fussell reads 'The Great Good Place' as a 'Protestantized' Catholic retreat: 'James' Protestant version of a religious retreat resembles a bland vacation, perhaps under continuous hypnosis or continuous intoxication'. See *The Catholic Side of Henry James* (Cambridge and New York: Cambridge University Press, 1993), p. 110. While there is scope for examining

The Place, as it appears to Dane, has been designed and created by a mind of a higher order than the builders of religious spaces within the 'real' world outside of the Place. Dane later compares the Place to 'the bright country-house', a hotel and a club, only to conclude that none of these comparisons is accurate enough (p. 587). The 'only approach to a real analogy', Dane decides, is through himself and the other inhabitants of the Place, who are all 'made' by the conditions of the Place (p. 587). Dane and his companions seem to be wandering through the consciousness of their creator:

What underlay and overhung it all, better yet, Dane mused, was some original inspiration, [...] some happy thought of an individual breast. [...] The author might remain in the obscure, for that was part of the perfection [...]. Yet the wise mind was everywhere—the whole thing was infallibly centred at the core in a consciousness. (pp. 587-588)

That 'core in a consciousness', it seems, belongs to James. Dane and his companions have been taken into that negative space which lies at the centre of so many Jamesian texts, and the Place itself is figured in terms of gaps and absence: 'it was such an abyss of negatives, such an absence of positives and of everything' (p. 576). For Dane, the escape from the 'real' world of the text in which he is figured provides the opportunity 'to just *be* there' (p. 577, original emphasis), to 'be without the complication of an identity' (p. 588). 'Those things', Dane thinks 'were in the world'; thus the Place is clearly not in the same 'world' (p. 588).

A higher level of communication is also possible in the Place, Dane notices, 'established by the mere common knowledge of it' (p. 579). In fact, the failure of descriptive language to define the Place seems to be a symptom of this heightened level of communication, between not only Dane and his companions, but between their consciousnesses and the physical reality of the Place. They have transcended spoken

the Place as a Protestant interpretation of the traditional Catholic retreat, I do not agree with Fussell's assessment of the mind-numbing nature of the Place.

language; it is no longer necessary as an intermediary between subjective and objective realities. Chapman writes that the Place is 'best understood as an extended metaphor of the writer in an ideal relation to the world around him' (p. 108), and indeed, Dane observes that in this 'scene of new consciousness': 'It was part of the whole impression that, by some extraordinary law, one's vision seemed less from the facts than the facts from one's vision; that the elements were determined at the moment by the moment's need or the moment's sympathy' (p. 590). In his argument with Wells, James claims that 'it is art that *makes* life' and, here, in the Place, he offers the reader a literal example of the construction of 'reality' through the mediation of consciousness.²⁸² This Place, thus, functions as a sort of spatial representation of James's aesthetic impulse, 'a kind of fourth dimension' for his fictional character, Dane. Dane's exposure to the Place is figured as a spiritual experience where he is able to recover his own creative impulse as a writer, of which he 'had a private practical sign [...], "the vision and the faculty divine"' (p. 586). Like Fleda, Dane's 'intense adventure of consciousness' grants him a kind of personal autonomy: 'He had talked of independence and written of it, but what a cold flat word it had been! This was the wordless fact itself—the uncontested possession of the long sweet stupid day' (p. 588). Here again, the issue of time arises; 'the long sweet stupid day' is only open to total possession from within the Place, where 'there was nothing now to time' (p. 578).

Henry James and 'aesthetic time'

Time is often reduced to 'nothing' in James in that he tends to make it subordinate to space. As Georges Poulet observes, in his writing James 'invents a new kind of time, what one might call aesthetic time', where 'time is constituted by passage, not from one

²⁸² James, letter to Wells, 10 July 1915, reprinted in *Henry James and H. G. Wells*, pp. 265-268, p. 267, original emphasis.

moment to another, but from one point of perspective to another'.²⁸³ Similarly, Levin writes that often James 'depict[s] various aspects of the action [in his texts] in a kind of stopped time' (p. 127). In James's perspective of his texts, as the author, he is able to observe all possible moments of time within the represented world of his fiction simultaneously, because he occupies the space outside and 'above' that of the text. The movement of the reader of the Jamesian text—both the external 'real world' reader and the central consciousness—is across perspectives or aspects, engendering this 'aesthetic time', or as Levin describes it, 'the temporal dynamic of [James's] own unfolding prose' (p. 127). Time here is reduced to an effect of movement across space.

In a review of *The Wings of the Dove* that is polemically critical of James's later writing style in a manner that anticipates George Boon, J. P. Mowbray struggles with this 'aesthetic time', complaining of the novel's

interminable and indeterminate dialogue, where indeed Mr. James seems to have reached the fourth dimension of space—dialogue in which the speakers not only tell us what they think and what others think, but what they might have thought and did n't.²⁸⁴

Mowbray appears to be drawing on a spatial conception of the fourth dimension that places James in a position of omniscience, where he is able to view all the possible outcomes of any given situation. Again, this is a space that lies outside, or above, the 'real', represented space depicted within the novel. Mowbray implies that James's later writing style envisions not only what *did* happen in a character's life within the representational frame of the novel, but also the multitude of alternatives that *did not*

²⁸³ G. Poulet, 'Henry James', in *Studies in Human Time*, trans. by E. Coleman (Baltimore: Johns Hopkins Press, 1956), pp. 350-354, pp. 351 and 352.

²⁸⁴ J. P. Mowbray, 'The Apotheosis of Henry James', *Critic* 41 (November 1902): 409-414, reprinted in *Henry James: The Contemporary Reviews*, ed. by K. J. Hayes (Cambridge and New York: Cambridge University Press, 1996), pp. 376-382, p. 381.

happen within that space, and perhaps could occur somewhere else. Mowbray, like Boon, complains that, as a result, James damages the mimetic quality of his fiction:

He is so apprehensive when dealing with one shade of thought or emotion that there may be other subshades that he will miss and that he must clutch as he passes, that he frequently produces the effect of a painting niggled and teased out of all frankness by manipulation, and this, as we have already said, belongs as a method rather to chemistry than to art [...]. (p. 380)

What Mowbray observes here is James's attempt to achieve a 'view of *all* the dimensions'. As I noted earlier, the concept of the fourth dimension and the dimensional analogy at this time carried a particular resonance for many of James's circle, as a 'hyper' space or state of consciousness, the view from which appears to be so hyperreal that it no longer resembles the 'real' world. I would argue that this is realism of a different order, such as the splintered frame of Wells's narratives, or James's haunting of his own text in 'The Great Good Place'. Mowbray's comparison to painting here is particularly revealing, as Henderson illustrates in her research on the impact of the discourse of the spatial fourth dimension on Cubism.²⁸⁵ Hinton also makes a comparison between this hyperreal sense of what his character Stella calls 'eternity' and painting. Stella tells Stedman that "if you feel eternity [...] you come to a different part of yourself each day, and think the part that is separated in time is gone. But in eternity it is always there" (*SR* 8, p. 30). The more prosaic Stedman is unable to comprehend fully what Stella is able to 'feel' in her invisible state: 'It seemed to me that she described life as if a painter were painting on a canvas that was taken away at each stroke, so that it was irrevocable, but the painting was always there, and the painter too' (pp. 30-31). This is a view of time that is spatialised so that the past is in fact not irrevocable, but accessible if one is able to perceive the space in which it is 'always there'. To the uninitiated, the effect of viewing a three-dimensional

²⁸⁵ See *FDNG*, pp. 74-116, particularly Henderson's discussion of 'simultaneity' in cubism, pp. 89-99.

representation of the fourth dimension results in a vision so 'teased out of all frankness by manipulation' that it does not appear to be coherent or representative of reality. However, for one who possesses 'a view of *all* the dimensions', such a text is representative of a higher, 'more real', reality. Mowbray asks of James's 'progeny': 'Do they indeed live and move and have their being?' (p. 379). His final verdict, which is negative, anticipates Wells/Boon's tirade against the "eviscerated people" of James's fiction (p. 99). It is therefore revealing that critics such as James and Woolf find exactly the same fault with Wells's fiction.²⁸⁶

Mowbray's complaint is that, in his later style, James attempts to depict not only what happened in any given situation, but also what *did not* happen, and we find that this idea is perhaps most explicitly worked out in another later James story, 'The Jolly Corner' (1908). The protagonist, Spencer Brydon, is concerned with the seemingly irrevocable nature of the past. It is only through his uncanny experiences resulting from a return to his childhood home that Brydon is able to resolve his sense of "something dreamed and missed, something reduced, relinquished, resigned", as Fleda would say. (*SP*, p. 196). In the following discussion, I will examine the ways in which the house in this story can be read in terms of spatialised time.

'The Jolly Corner' (1908)

Brydon, like George Dane, is concerned with the way in which certain decisions of his past have narrowed and circumscribed his present situation. Unlike Dane, he is not in a

²⁸⁶ See particularly pp. 97-101. After listing the perceived flaws in James's method of characterisation, Boon asks: "Have you ever known living human beings do that?" (p. 100). Woolf asks a similar question of Wells's fiction: 'What more damaging criticism can there be of both his earth and of his Heaven than that they are to be inhabited here and hereafter by his Joans and his Peters?'. Linking Bennett's fiction with Wells's, she delivers the verdict on both that 'life escapes; and perhaps without life nothing else is worth while'. See 'Modern Fiction', in *The Common Reader, First Series* (New York: Harcourt Brace, 1984), pp. 146-154, pp. 148-149.

state of desperation at the beginning of the story; however, the narrative develops in such a way that he is finally brought to a similar crisis point. Returning to his childhood home in New York after thirty-three years abroad, Brydon becomes obsessed with the idea of the man he could have been, or would have been, had he remained at home. Like Fleda, who can sense a presence, which she describes as 'a kind of fourth dimension' in the maiden-aunt's house, Brydon tells his companion, Alice Staverton, in reference to the 'ghostly' empty house of his childhood years: "For me it *is* lived in. For me it *is* furnished." At which it was easy for her to sigh, "Ah yes—!" all vaguely and discreetly; since his parents and his favourite sister, to say nothing of other kin, in numbers, had run their course and met their end there'.²⁸⁷ Although it is ambiguous as to whom Alice is referring, it is clear that—in Brydon's imagination—the current occupant of the house is in fact another version of himself, his 'American' self. The narrator, aligned with Brydon's point of view, distinguishes the presence of this 'other' self from Alice's possible allusion to his deceased family, observing that *they* 'represented, within the walls, ineffaceable life' (p. 447). The implication here is that—at this point, early in the story—Brydon considers his other self to be effaceable.

What begins as curiosity about 'the road not taken' becomes an obsession for Brydon as he spends more time in the New York of the early twentieth century, making nightly visits to his empty childhood home. 'Thus we watch the creation of Brydon's obsession', writes Richard A. Hocks,

and the incantatory repetition in the [...] lines—'If he had but stayed at home'—as well as James's expression that Brydon's condition begins first as an 'analogy' which eventually he is to 'improve on'

²⁸⁷ 'The Jolly Corner', in *The Novels and Tales of Henry James*, New York Edition, Vol. XVII (New York: Charles Scribner's Sons, 1909), pp. 435-485, p. 447, original emphasis. I will refer to this text as *JC*.

by a 'still intenser form,' makes clear at which end the process for reaching the quasi-supernatural must start from. (p. 202, emphasis removed)

It is this obsession with an unactualised past that, Hocks observes, leads Brydon to construct the vision of his alter ego near the end of the story, the sight of which nearly kills him. However, he recovers in the end, and although Brydon hasn't completely accepted this other self as a necessary aspect of his present self, as Hocks notes, 'now released from his obsession and capable of love, he will presumably do so rather soon' (p. 205). What is also apparent by the close of the story, and what is, according to Hocks, 'perhaps most significant in terms of James's development and grasp of the ghostly realm, [is that] he now seems less doubtful of its possible "independent" existence in his decision to allow both characters to participate in it' (p. 205).²⁸⁸ Both Alice and Brydon 'see' Brydon's other self in separate instances. While Dane has shadowy companions in the Place, it remains ambiguous as to whether these 'Brothers' are just other aspects of himself, his servant or the young writer. Dane's 'adventure of consciousness' is a solitary one, but both Brydon and Alice interact with this 'ghost' of Brydon's other self. The implication here is that the 'ghostly realm', or space or state of consciousness, has a more stable existence, one that is external to the imagination of a single subject. The other self, invented via analogy within Brydon's mind, has been externalised and reified into an entity that is observable to Alice as well.

Earlier I explored the possibilities of reading the 'quasi-supernatural' spaces of *The Spoils* and 'The Great Good Place' as places where the Jamesian 'centre of consciousness' is able to sense the authorial presence of James the author. For a Jamesian character,

²⁸⁸ Of course, there are a variety of alternative readings of this text. Hocks dismissively suggests the possibility, based on certain textual discrepancies, that 'Brydon is "himself the ghost" during that climatic night', meaning that the narration shifts its point-of-view from Brydon to his alter ego shortly before the confrontation scene (p. 207). J. A. Clair, in *The Ironic Dimension in the Fiction of Henry James* (Pittsburgh: Duquesne University Press, 1965), suggests that Alice Staverton has staged the entire affair. See pp. 17-36.

access to the authorial viewpoint can be described using the dimensional analogy in which a two-dimensional being is 'lifted' up to the third dimension of space. This omniscient view is one available to James as the author, and as we have seen in the case of 'The Great Good Place', occasionally he brings one of his centres of consciousness into contact with his own authorial consciousness. Such an experience for a Jamesian character is often figured in terms of the supernatural, but perhaps a more accurate description would be hyperreal. The perspective of James the author, 'a view of *all* the dimensions', would affect the Jamesian character as an intense, superhuman experience, because, as Donadio observes:

As James conceives the novel, the author's comprehensive awareness serves as the larger frame within which the account of the more or less unsuccessful efforts of individual characters to unravel the tangle of their lives is finally placed. As a consequence, there is a continuous implicit comparison between the limited 'points of view' of particular persons and what may be characterized as the impersonal, all-inclusive point of view, which does not simply exemplify one of the degrees of lucidity represented as humanly possibly by the story—for it lies always just beyond the reach of the capacities of even the most intense perceiver—but which remains at all times an unattainable ideal of total clarity and refinement of perception. (150-151)

However, this 'all-inclusive point of view' is not strictly impersonal for all of James's characters, such as Fleda Vetch and George Dane. These intense moments of awareness that they experience, of the 'life' beyond their narrative frame, are not sustainable. Dane returns to his study, to his life as a well-known and respected author, and Fleda, after witnessing the destruction of Poynton, remarks: "I'll go back" (p. 208). These encounters with the Jamesian consciousness are too intense for the merely human characters he creates, and, apparently, for some of his readers, as well. Mowbray complains that, after reading *The Wings of the Dove* within a twenty-four hour sitting, upon returning to the 'real' world outside of the text and James's consciousness, 'we shall be pardoned if we

feel like the resuscitated man who, after being rolled on a barrel, is expected to reveal something of the mysterious midway between this and another state of existence' (p. 379).²⁸⁹ Like Fleda and Dane, Mowbray struggles to find an adequate language to describe the experience of immersion in the Jamesian consciousness, which he jocularly implies, can be life-threatening.

Drawing on the work of Dorothea Krook and Ellen Tremper, Fogel highlights a notebook entry from 1895, where James first speculates on the possible 'germ' of a story that bears striking resemblances to 'The Jolly Corner'.²⁹⁰ In this notebook entry, from 5 February 1895, James describes an idea for a story upon the theme of 'too late', along the lines of Strether's character in *The Ambassadors*. However, James realises, his idea that "this Dead Self of the poor man's lives for him still in some indirect way' would make for a different narrative to Strether's: 'I've only to write a few words, however, to see that the 2 ideas have nothing to do with each other. They are different stories'".²⁹¹ In his original conception of what, Fogel argues, would become Brydon's encounter with his "Dead Self", James foresees that "he himself, the man, must, *in* the tale, also materially die—die in the flesh as he had died long ago in the spirit, the *right* one. Then it is that his lost treasure revives most—no longer *contrarié* by his material existence".²⁹² Brydon does not

²⁸⁹ Iser observes that this experience, which James refers to as 'having lived another life for a short while', was an effect of reading which, 'in the early days of the novel, during the seventeenth century [...] was regarded as a form of madness' (*IR*, p. 156).

²⁹⁰ D. M. Fogel, 'A New Reading of Henry James's "The Jolly Corner"', in *Critical Essays on Henry James: The Late Novels*, ed. by J. W. Gargano (Boston: G. K. Hall, 1987), pp. 190-203, p. 191. The texts he draws upon are D. Krook, *The Ordeal of Consciousness in Henry James* (Cambridge: Cambridge University Press, 1962) and E. Tremper, 'Henry James's Altering Ego: An Examination of the Psychological Double in Three Tales', in *Texas Quarterly* 19.3 (1976): 59-75. Both Krook and Tremper only mention this notebook entry in passing.

²⁹¹ *The Notebooks of Henry James*, ed. by F. O. Matthiessen and K. B. Murdock, quoted in 'A New Reading', p. 191.

²⁹² Fogel, p. 192, original emphasis. As Fogel notes here, in the original notebook entry James imagines the other self of his protagonist to be the 'right' one, the better self. In this same notebook entry James worries

actually die in 'The Jolly Corner', however. After encountering his other self he faints, and is revived later by Alice, who momentarily believes him to be dead. Brydon also describes his swoon as a sort of death: "It must have been that I *was* [dead]." He made it out as she held him. "Yes—I can only have died" (p. 480, original emphasis). As I shall argue below, the intrusion of the other self into the space of the house—which functions as a kind of frame for Brydon's 'adventure of consciousness'—is too intense an experience even for a Jamesian centre of consciousness. The encounter between Brydon and his other self is figured an explosive disruption of his understanding of space and time.

There are aspects of 'The Jolly Corner' that run parallel with a Hinton story, 'An Unfinished Communication', which I shall discuss in greater detail later in this section. It is significant that it is only after his own death in 'An Unfinished Communication' that Hinton's narrator is able to attain a 'higher consciousness' of every possible variation of his personality, of every life he could have lived—and according to the narrator's vision—actually *will* live. In his 'mysterious midway state between' his previous and his next existence, Hinton's narrator remarks: 'It has been coming over me in scenes which I thought were vivid memories, but now I know they are *actual presences*'.²⁹³ In the presence of these variations of the course of his life, the narrator watches himself sometimes erring, sometimes avoiding error. 'Once I did not turn back' from Natalia—the woman he loves but leaves in the main narrative—the narrator observes, 'leading her to a life which her intolerant spirit could not brook' (p. 176). The narrator carries 'that horror of betraying her' into another version of his life, where presumably, he does not commit

that this idea might provide for a rather banal story. Fogel proposes that James, 'in order to rescue the idea from banality', reverses the situation by making the other self the 'worst self' ('A New Reading', p. 192).

²⁹³ C. H. Hinton, 'An Unfinished Communication', in *Scientific Romances*, pp. 109-177, p. 173, original emphasis. I will refer to this text as *SR 9*.

the same error, but perhaps ‘maybe for a period, as I pass again and again in life [...] I may not see Natalia.’ (p. 176). However, each variation of his life is precious, ‘for it brings me nearer to her’ (p. 177). The narrator’s quest for a time when his and Natalia’s ‘souls can walk together perfectly’ is the teleological aim of his multiple lives, an end that is not so different from Brydon’s, with Alice. Brydon must first overcome his denial of his other life, the roots of which always already lie within his current life, within his ‘true’ self. At the end of the story, it is through Alice that Brydon is able to acknowledge the unity between these two selves: although he explicitly denies their shared identity, he also implicitly accepts that the occult vision that Alice has had of the other self is in fact *him*. In explaining her vision of the other self, the morning after Brydon’s encounter with him, Alice conflates ‘you’ with ‘him’ (p. 484).²⁹⁴ ‘On a personal level’, Hocks writes, ‘she is still ahead of him in realizing that Brydon [...] could not be dispossessed of the very qualities that had in fact sent him abroad’ (p. 205). That potential for progressive development is contained within both the other self and Brydon, as is the negative potential: ‘Alice, in other words, grasps the real meaning of an *alter ego* itself, the positive allegiances involved’. (Hocks, p. 205). Having reassimilated both selves at the end of the tale, Brydon, it is implied, is ready to acknowledge his feelings for Alice.

Returning to his childhood home and confronting the negative potential of his personality, Brydon completes a cycle of return, with variation. His return to consciousness in Alice’s arms is a sort of rebirth, as Fogel observes, and Alice’s final claim that “‘he is n’t—no, he is n’t—you!’” is not a straightforward denial of Brydon’s other self (p. 485 original emphasis). ‘Alice’s underlying message entails a shift in tense: the apparition was you, both as you might have been and as you were, but he is not you

²⁹⁴ Fogel, in ‘A New Reading’, also observes this conflation.

now' ('New Reading', p. 199).²⁹⁵ Thus the growth of Brydon's consciousness in this story follows the pattern of an upward, 'progressive' spiral, similar to that of the narrator in 'An Unfinished Communication', whose story ends on the dawn of a similar kind of 'rebirth'.

In his examination of the James brothers and time in *Henry James and the Abuse of the Past*, Peter Rawlings observes that 'for Henry James, objects, and especially houses, are often attractive because they spatialize and inscribe time in ways that disrupt linear, chronological models'.²⁹⁶ The house of Brydon's childhood, like the house that Ralph Pendrel inherits in *The Sense of the Past*, are both sites where time seems to become more flexible and open to overwriting. However, while the house in *The Sense of the Past* provides a site from which Pendrel is able to 'visit' the eighteenth century, the house in 'The Jolly Corner' has a slightly different role to play. What happens in Brydon's house, and in the modern, twentieth-century New York to which he returns, is, as Rawlings observes, 'less a travelling back, or a simple reversal of a sequence, and more the giddy experience of simultaneity as the unreality of time' (p. 147).²⁹⁷ The other self that Brydon encounters inhabits a stream of time that is separate from his own; the catalyst for this divergence, it is implied in the story, was Brydon's departure for Europe thirty-three years earlier. Like Hinton's narrator who is able to experience the simultaneous events of his past life, as well as those of his own other parallel lives as 'actual presences', Brydon

²⁹⁵ The reading of Brydon's return to consciousness at the end of the story as a rebirth a common one in James criticism. See, for example, Lustig, p. 225.

²⁹⁶ *Henry James and the Abuse of the Past* (Basingstoke: Palgrave Macmillan, 2005), p. 140. Rawlings's discussion of the James brothers and 'debates then current among scientists, philosophers of time, and grammarians' (p. 133), while highly suggestive, is flawed by his neglect of the discourse of the spatial fourth dimension, which was actually contemporaneous with the composition of the Jamesian texts he examines.

²⁹⁷ Rawlings makes a penetrating observation here about the spatialisation of time in James. However, his discussion is limited by his decision to use J. M. McTaggart's 'The Unreality of Time' (1908) as a primary text, implying that it may have been an influence on either or both of the James brothers. William James was in fact highly critical of McTaggart's work. See, for example, W. James, *A Pluralistic Universe: Hibbert Lectures at Manchester College on the Present Situation in Philosophy* (London: Longmans, Green, and Co., 1909), p. 140. I will refer to this text as *PU*.

encounters the presence of his simultaneously-developing other self. As a companion in the Place tells Dane, “I don’t speak of the putting off of one’s self; I speak only—if one has a self worth sixpence—of the getting it back” (p. 581). Brydon does not put off his other self, but his confrontation and acceptance of it—via Alice—allows him to grow as a human being. His encounter with his other self is not about denial then, but about acknowledging, and even reclaiming these seemingly latent aspects of himself. Both Dane and Brydon awake from their experiences with their consciousnesses enriched: they have become ‘more’ of who they were already.

In such experiences time *is* ‘unreal’; it is rendered as space, where multiple temporal realities may exist alongside one another. Hinton’s concept of the fourth dimension also implies that time is actually an illusion, being the way that humans with three-dimensional sensibility perceive the fourth dimension of space: each three-dimensional slice, or present moment, is actually just one aspect of a four-dimensional, ‘higher reality’. Brydon’s experiences within the house, on the climatic night of his encounter with his other self, are also compartmentalised: ‘the house, as the case stood, admirably lent itself; he might wonder at the taste, [...] which could rejoice so in the multiplication of doors—’ (p. 466). Brydon becomes obsessed with opening and closing these doors, pausing on thresholds and searching each open or closed doorway for clues to his other self’s movements through the house. In his own upward progression through the house, Brydon conscientiously leaves each door through which he passes open. Turning to descend back down the house, Brydon finds a door closed, and ‘with it rose, as not before, the question of courage—for what he knew the blank face of the door to say to him was “Show us how much you have!” It stared, it glared back at him with that challenge; it put

to him the two alternatives: should he just push it open or not?' (p. 467). Brydon decides that the closure of a door he remembers to have left open must signify the presence of his other self in the house, and that the other self is waiting behind the closed door. Deciding in favour of discretion—out of fear for his own sanity—Brydon leaves the door unopened and hastily begins his descent down the four levels of the house.

Edel highlights the obvious autobiographical aspects of 'The Jolly Corner', claiming that in this story, James is 'laying the ghost' of his own past.²⁹⁸ Without wishing to reduce this text to autobiographical self-therapy, I agree with Edel that

the story is more than a revisiting of a personal past; it becomes a journey into the self, almost as if the house on 'the jolly corner' were a mind, a brain, and Spencer Brydon were walking through its passages finding certain doors of resistance closed to truths hidden from himself. (p. 314)

Of one door in particular, the closed one that signals to Brydon the presence of his other self, 'he knew—yes, as he had never known anything—that, *should* he see the door open, it would all too abjectly be the end of him' (*JC*, p. 471, original emphasis).²⁹⁹ Should the door open to reveal his other self, Brydon knows he will throw himself out the fourth floor window: 'he saw himself uncontrollably insanely fatally take his way to the street' (p. 472).³⁰⁰ Making his way noisily away from this door and down a flight of stairs, Brydon begins to see every door he encounters as a threat. It seems that the multiplication of space also implies the potential for the multiplication of parallel selves: 'the house, withal

²⁹⁸ Henry James, *The Master: 1901-1916* (Philadelphia and New York: J. B. Lippincott, 1972), p. 316.

²⁹⁹ S. B. Purdy argues that Spencer *does* absolutely deny his other self in *JC*, reading the antagonistic relationship as analogous to that between matter and antimatter. See *The Hole in the Fabric: Science, Contemporary Literature, and Henry James* (Pittsburgh: University of Pittsburgh Press, 1977), p. 49.

³⁰⁰ Were Brydon to perish in this way, he would bear a resemblance to Lionel Wallace, from Wells's story, 'The Door in the Wall' (1906). In this story, a first-person narrator recounts the story of his friend, Wallace, who is obsessed with rediscovering a green door in a garden wall through which he had once passed as a small child. The door led to 'another world' where Wallace experienced 'a keen sense of homecoming'. The story ends with Wallace falling to his death; after years of searching for the door, he mistakes a 'small doorway [...] cut for the convenience of some of the workmen' in a hoarding blocking off the high road from a 'deep near East Kensington Station'. See 'The Door in the Wall', in *The Complete Short Stories of H. G. Wells*, pp. 571-584, pp. 574 and 583.

seemed immense, the scale of space again inordinate; the open rooms, to no one of which his eyes deflected, gloomed in their shuttered state like mouths of caverns' (pp. 472-473). The space of the house has become like the consciousness of James the author, where not only the events that *did* actually happen for a character are present, but also events that *did not* happen.

That Brydon decides specifically at this point in the narrative to have the house torn down is significant. He imagines 'the clear delight with which he was finally to sacrifice it. They might come in now, the builders, the destroyers' (p. 473). Such an act of destruction would demolish the very foundation of Brydon's existence; it would be not only the ultimate act of revenge upon himself—by denying his other self—but it would also be a symbolic attack upon his creator, James. It is necessary, therefore, that upon reaching the ground floor, Brydon finds that another door—one he is certain he previously closed—'had been thrown far back' (p. 474). Brydon is finally confronted with his other self, who is at first hiding his face in his hands, presumably in anguish or shame. The other self drops his hands, however, and advances aggressively toward Brydon (p. 477). Lustig offers a reading of this encounter which is illuminating here: 'Brydon's other self stands at an open door looking inwards from the outer threshold of the fiction and the house in order to trap the expanding or escaping subjectivity' (p. 224). This forced encounter with his other self, this trapping of 'the expanding or escaping subjectivity' is protective as well as being restrictive: Brydon's unchecked rush out the front door of his childhood home could be as dangerous as the panicked jump from the window he had envisaged earlier, a fatal evacuation from the representational space of his own text. The house in 'The Jolly Corner' works as a sort of container for the uncanny borderland space between the

mimetic world of the text and James's consciousness as author. Like Dane, Brydon senses a presence somehow behind the scenes, closing doors left open, and opening ones left closed. It is significant that Brydon's climactic encounter with this other self is described as a penetration of boundaries: 'no portrait by a great modern master could have presented him with more intensity, *thrust him out of his frame* with more art' (JC, p. 475, emphasis added). Unlike Dane, who feels the unseen presence within the Place to be a calming and benevolent intelligence, Brydon's threatening other self does not remain hidden. Faced with 'a life larger than his own, a rage of personality before which his own collapsed', Brydon literally collapses. His individual personality is subsumed within the explosion of the encounter: 'his head went round; he was going; he had gone' (p. 477).

Brydon's awakening is figured as a reconvergence of the consciousness that has been dissipated throughout the very air of the house, like the settling of dust after an explosion:

In this rich return of consciousness—the most wonderful hour, little by little, that he had ever known, leaving him, as it did, so gratefully, so abysmally passive, and yet as with a treasure of intelligence waiting all round him for quiet appropriation; dissolved, he might call it, in the air of the place and producing the golden glow of a late autumn afternoon. (p. 478)

The collision of the parallel lives of Brydon and his other self appears to have resulted in the temporary dissolution of both. The Brydon that survives this encounter is a reconfiguration of the personalities of both selves, as illustrated by his acceptance of Alice's conflation of the two. Immersed in these diffused presences, Brydon feels that he can 'quietly appropriate' these selves and intelligences at will. Although Dane's excursion to the Place is a wholly comforting experience as opposed to Brydon's dangerous encounter in the house, both Dane and Brydon feel that they are in deeper possession of themselves at the end of their narratives. Looking around at the 'golden glow' produced by

the dissolution of his conflicting selves, Brydon feels that 'what he had come back *to* seemed really the great thing, and as if his prodigious journey had been all for the sake of it' (p. 479, original emphasis). Brydon has completed another arc of the spiral; he has come back around to himself, with 'a treasure of intelligence', or expanded consciousness.

Overcoming and time

In my examination of Wells and James, I have focused on their similar concern with consciousness-expansion and framing, approaching their texts within the context of hyperspace philosophy. While Wells seems to be concerned with raising reader awareness by overtly interrupting the reader's experience of the text with the splintering frame technique, James focuses on dramatising his characters' experiences of the temporary dissolution, or bending of the narrative frame. Wells fantasises about the development of a race of Overminds, or superhuman intelligences, whose consciousness would relate to human intelligence much in the same way that higher-dimensional beings relate to lower-dimensional beings. James has his own interest in highly-developed intelligences; his centres of consciousness often brush against the consciousness of James himself, an encounter that is experienced by the characters as secular, yet supernatural. The 'demonic' intelligence of these centres of consciousness allows them to traverse the borderland between James's consciousness and the represented space within the text. In their encounters with the Jamesian presence, James's centres of consciousness develop a greater sense of autonomy, as if they have learned from their author the art of self-construction. Henry McDonald describes this tendency in the Jamesian centres of consciousness: 'the source of the "active" morality embodied in James's tragic heroines and heroes is the self-submitting, self-creating artistic action of James himself' (404). The Jamesian protagonists

I have examined here mimic the creative activity of James as author; these are characters who 'overcome' themselves to become more like James, with his heightened awareness and creative agency. This pattern of 'self-submitting, self-creating' also mimics the pattern of the spiral, of Wells's return with variation. If, as James wrote to Wells, 'it is art that *makes* life, makes interest, makes importance for our consideration', then each expansion of the frame of the work of art, each completed arc of the spiral, is an act of self-overcoming for the Jamesian centre of consciousness.³⁰¹ McDonald similarly observes that 'James felt that we live in only to the degree we "exceed" ourselves, only to the degree we invest our hearts and minds in the hearts and minds of others and undergo a process of revolutionary self-transformation' (405). Here again we see a kind of transcendental materialism. The living, embodied self is not abandoned, but transformed.

In any aesthetic or discourse that is concerned with exceeding the self, time is naturally implicated, usually in terms of personal or cultural history. A common means of overcoming time is by rendering it imaginable or accessible as extension, which implies space. Both Wells and James imagine pasts that are 'visitable' as spaces, where simultaneous, subjective senses of reality are brought into collision, resulting in increased self-awareness and autonomy for the characters involved.³⁰² This desire for self-transcendence in these texts is modern in tone. What is striking about this brand of transcendence is that it is also materialistic: it is not a transcendence into a spiritual realm or a transformation of the self into the divine, but rather becoming more through selective,

³⁰¹ *Henry James and H. G. Wells*, p. 267, original emphasis.

³⁰² In his preface to 'The Aspern Papers', James remarks that 'I delight in a palpable imaginable *visitable past*—in the nearer distances and the clearer mysteries, the marks and signs of a world we may reach over to as by making a long arm we grasp an object at the other end of our own table' (*AN*, p. 164, original emphasis). The spatial metaphor of the table, 'the common expanse' here allows one to 'lean' across it, and 'so stretching, we find it firm and continuous', thus remaining in contact with the past (p. 164).

creative appropriation and reconfiguration of what is already present. Hinton's conception of the fourth dimension functions particularly well here, as a means of imagining a material space from which seemingly super-human feats of consciousness are possible. In Hinton's hyperspace philosophy, this space has always been an absent presence, like an invisible force or light ray. While he stresses the scientific validity of his theory of the fourth dimension, Hinton approaches it primarily as a thought-experiment, often expressing his ideas through speculative fiction. As Clarke observes, Hinton's quest for access to the fourth dimension of space is in part a product of the vogue for 'super-human types' at the turn of the century. To develop the capacity to think 'four-dimensionally' is to become like one of Boon's Overminds, to reach the level of awareness for which James's centres of consciousness strive. The ability to grasp the concept of the fourth dimension is therefore a means of transcending the perspective of the three-dimensional self with its temporally circumscribed consciousness and creative potential.

As I noted earlier, as early as his first romance, Hinton posits that 'four-dimensional beings [might] be ourselves, and our successive states the passing of them through the three-dimensional space to which our consciousness is confined' (*SR 1*, p. 18). In this cognitive leap, Hinton implies that three-dimensional experience of time is actually an illusion, resulting from the way that the artificially-limited human consciousness perceives the fourth dimension of space. He makes this view more explicit in a letter to William James in 1895:

In working with the 4 dimensional space hypothesis it became evident that the method of forming the working intuition of this extended space was to use time as the fourth dimension. To assume that matter had another dimension which is experienced by us as duration.³⁰³

³⁰³ Letter from Hinton to William James, dated 19 October 1895, p. 3, in *James Family Papers*. For the sake of clarity, I will continue to refer to Henry James as 'James', and William James as 'William'.

Thus Hinton sees time as a useful tool, if one allows that it is simply the way in which the human mind perceives the higher space of the fourth dimension. Working under the assumption that his '4 dimensional space hypothesis' is true—that a material fourth dimension of space actually exists—allows Hinton to reduce the phenomenon of time to a by-product of the limited capability of human consciousness to perceive this 'higher dimension' of extension. This is not transcendence in a traditional, spiritual sense, then: in another letter to William, Hinton refers to it as 'a higher *material* existence' (10 July 1897, emphasis added). This description falls into a more expansive reiteration of Hinton's thoughts on time:

We must get sensations of the higher. As you know I think that it is to be got by fusing extension and duration together making that unity which we may call the process thing—a higher material existence, simultaneous reality, which we apprehend as consecutive, given in fugitive nows. (p. 3)

In Hinton's hyperspace philosophy, the 'fugitive nows' are to the human mind what the two-dimensional 'slices' of a solid would be to a plane being's perception of the third dimension of space. Again, Hinton makes it clear that he believes the fourth dimension is spatial—it is *extension*—and its fusion with duration is simply a means to the end of apprehending the actual materiality of this higher space.³⁰⁴

According to Hinton, it is the assumption that space is limited to three dimensions that drastically limits the possibility for human apprehension of the fourth dimension of space. Here Hinton is again challenging Kant's 'apodictically certain' argument that the limitation of space to three dimensions 'cannot be shown from concepts, but rests

³⁰⁴ Hinton's treatment of duration as an effect of space is completely opposed to Bergson's theory of *la durée pure*. 'Pure duration', Bergson writes, 'is the form which the succession of our conscious states assumes' in a transcendental, unmediated state of experience. However, Bergson complains, confined within the material realm of extensity, 'we set our states of consciousnesses side by side in such a way as to perceive them simultaneously, [...] in a word, we project time into space'. See *Time and Free Will: An Essay on the Immediate Data of Consciousness*, trans. by F. L. Pogson (London: George Allen, 1913), pp. 100-101.

immediately on intuition, and indeed because it is apodictically certain, or pure intuition a *priori*' (Kant, p. 41). Hinton's project is thus in line with the spirit of William's 'will to believe'. In his 1896 lecture of the same title, William speaks as philosopher rather than as a scientist when he claims that, in science, 'the most useful investigator, because the most sensitive observer, is always he whose eager interest in one side of the question is balanced by an equally keen nervousness lest he become deceived'.³⁰⁵ Thus, he argues, it is important to temper one's desire for knowledge with a careful and sceptical self-awareness. As students of philosophy, however, William argues, we must treat of the idea of 'the fact', 'as a weakness of our nature from which we must free ourselves' (p. 466). 'Facts', or concepts, are themselves 'useful fictions', which must constantly be reassessed and reinterpreted in light of fresh evidence:

I live, to be sure, by the practical faith that we must go on experiencing and thinking over our experience, for only thus can our opinions grow more true; but to hold any one of them—I absolutely do not care which—as if it never could be re-interpretable or corrigible, I believe to be a tremendously mistaken attitude. (p. 466)

Aside from abstract comparisons, William continues, no axiom or *a priori* is immune to speculation and revision: 'There is but one indefectibly certain truth [...]—the truth that the present phenomenon of consciousness exists. That, however, is the bare starting-point of knowledge, the mere admission of a stuff to be philosophized-about' (pp. 466-467). All other systems of philosophy are 'but so many attempts at expressing what this stuff really is' (p. 467), William argues, and therefore none are safe from being measured and remeasured against this standard: 'The transcending of the axioms of geometry, not in play but in earnest, by certain of our contemporaries (as Zöllner and Charles H. Hinton) [...]

³⁰⁵ 'The Will to Believe', in *William James, Writings 1878-1899*, (New York: Library of America, 1992), pp. 457-479, p. 471. I will refer to *The Will to Believe and Other Essays*, as collected in the *Writings 1878-1899*, as *WB*.

are striking instances in point' (p. 467). Hinton's work on the fourth dimension then, according to William, has a role to play as a challenge to and reassessment of the 'absolute truths' of Euclidean geometry. Speculations on the fourth dimension are also, in William's reasoning here, less about geometry than they are about 'the phenomenon of consciousness'.

As a system of philosophy that attempts to express what the phenomenon of consciousness 'really is', Hinton's hyperspace philosophy works on a methodology similar to William's. As much as the philosophies of either William or Hinton could be described as systematic, both place emphasis on the importance of consciousness as *process*. The ambulatory or transitional nature of William's philosophical approach to consciousness is indicated early on in his writings, and it appears to develop naturally out of his psychological concept of the 'stream of consciousness'.³⁰⁶ I shall return to William's 'stream of consciousness' later in this section; at present, however, my focus will remain on William and Hinton's shared conviction that conceptual thinking can impose limits on consciousness, and therefore must be constantly challenged. Hinton makes this belief even more explicit in correspondence with William:

It is worthwhile to attempt to see [...] whether, that is, the limitations of our scientific knowledge are not due to a limitation of the hypotheses with which we set out—these hypotheses being formed in accordance with our sense impressions. The sense impressions give us certain confused perceptions which the geometrical axioms take and give that defective form to which is necessary for their use in clear thinking. [...] But the question whether it is exhaustive seems to me to point back directly to the axioms with which we start. If we have taken a limited perception all our results will bear traces of that limitation. (19 Oct. 1895, p. 2)

Here Hinton—using different terminology—identifies the symbiotic relationship between 'percepts' and 'concepts', the terms that William would use at the end of his life to address

³⁰⁶ Levin offers a similar reading of William, replacing the 'ambulatory relations' with 'the metaphysics of transition'. See especially pp. 45-66.

the same problem. William identifies percepts with sensation, and concepts with thought. However, 'concepts flow out of percepts and into them again, they are so interlaced, and our life rests on them so interchangeably and indiscriminatingly' that it is difficult to distinguish the two.³⁰⁷ Language fixes consciousness into ideas; it shapes what the senses intuit as percepts, and turns them into concepts. Both percepts and concepts are beneficial to human understanding, William acknowledges: 'we extend our view when we insert our percepts into our conceptual map', however, 'conceptual knowledge is forever inadequate to the fulness [sic] of the reality to be known' (p. 78). Again, there is a breakdown at the point of language, when it concretises concepts, bringing some aspects of reality into focus while negating others. In his philosophy, William wants a careful balance of both perceptual and conceptual consciousness, 'a view of knowledge' which he describes as ambulatory. Hinton enacts this ambulatory method throughout his *Scientific Romances* by offering the concept of the fourth dimension as a challenge to the currently accepted axioms of geometry that frame the perceptual world. Inevitably, he is replacing one limiting concept with another concept, which can in turn become limiting. Here is the contradiction that haunts the writings of both Hinton and William. The immediate purpose of Hinton's hyperspace philosophy, is however, twofold: to alert his readers to the existence of a higher dimension of space, which is misapprehended as time, and to deconstruct the epistemology that makes this misapprehension of the fourth dimension of space inevitable.

Hinton describes such deconstruction as 'unlearning' in his 1895 story, 'An Unfinished Communication'. He refers to this text specifically in his correspondence with

³⁰⁷ W. James, *Some Problems of Philosophy: A Beginning of an Introduction to Philosophy* (Lincoln and London: University of Nebraska Press, 1996), p. 47.

James on the practical value of assuming ‘that matter had another dimension which is experienced by us as duration’: ‘The difference in the view of the world, the aspect which things come to[,] were from this assumption incorporated and made familiar as I have expressed in “Stella,” partially, & more fully in “An Unfinished Communication” (19 Oct. 1895, p. 3). ‘An Unfinished Communication’, was originally published in 1895 as a companion-piece to ‘Stella’, and it was reissued as part of Hinton’s Second Series of *Scientific Romances* in 1896.³⁰⁸ ‘An Unfinished Communication’ is perhaps the most experimental of Hinton’s fictions, in both form and content. Here, Hinton appears to be attempting to deal with the same paradoxes that haunted William under various guises, such as how the individual will can cope with the idea of determinism, and ‘how can what is *actually* one be *effectively* so many?’ (*PU*, p. 202, original emphasis). The solution to these problems, for Hinton, is to be found in the fourth dimension; in ‘An Unfinished Communication’, he expresses what he sees as the highest implication of his hyperspace philosophy, ending the story with a description of a dialectics of universal being and individual becoming. Hinton builds to this conclusion through a series of spatialised temporal jumps in narrative, ending with a vision which is common not only to Hinton and William, but to another philosopher who was concerned with overcoming determinism and the relationship between the ‘one’ and the ‘many’, Friedrich Nietzsche.³⁰⁹

³⁰⁸ The 1895 edition of this text at the University of Harvard Library was previously owned by William James. It is unmarked.

³⁰⁹ Nietzsche first mentions eternal recurrence in *The Gay Science* (1882), although his most extended treatment of the idea is in the text I will examine, *Thus Spake Zarathustra*. I will refer to this text as *TSZ*. The first three sections of *TSZ* were published individually in the 1880s and collected into one volume in 1887; Nietzsche finished the fourth and final section in 1885, but it was not published until 1892.

Nietzsche and history

I have already alluded to Nietzschean ideas of overcoming, and the overman in my discussion of Wells and Henry James. In his study of Nietzsche and James, Donadio outlines the shared influences and network of ideas between these two writers, particularly emphasising the work of Emerson and William.³¹⁰ Broadly speaking, Nietzsche is also concerned with the past and its role in the imagination's construction of values, the self and 'reality'. In his essay, 'On the Uses and Disadvantages of History for Life' (1873), Nietzsche addresses the importance of the ability to forget the past for the general health and happiness of humanity: 'He who cannot sink down on the threshold of the moment and forget all the past, who cannot stand balanced like a goddess of victory without growing dizzy and afraid, will never know what happiness is—worse, he will never do anything to make others happy'.³¹¹ According to Nietzsche, modern culture is in the process of being poisoned by an excess of history, of defining itself in terms of the past. In a later section of this essay he describes the deadening sense of weight of the past on the present: 'In the end, modern man drags around with him a huge quantity of the indigestible stones of knowledge' (p. 78). One way to escape this burden, Nietzsche proposes, is to live unhistorically: to experience each moment as individual and unconnected to every other moment, a process of constant forgetting. This is how animals experience life, Nietzsche claims, and thus it is problematic for the advancement of human civilisation. The other extreme, living suprahistorically, is a mode of seeing the entire history of the world, which offers a block-universe and deterministic view of all the past

³¹⁰ In his discussion of James and Nietzsche, McDonald disagrees with Donadio's emphasis on 'James and Nietzsche's supposed affinity with Emersonian transcendentalism' (394-395).

³¹¹ F. Nietzsche, 'On the Uses and Disadvantages of History for Life', in *Untimely Meditations*, ed. by D. Breazeale, trans. by R. J. Hollingdale (Cambridge: Cambridge University Press, 1997), pp. 57-123, p. 62. I will refer to this text as *UM II*.

and future.³¹² Like the encounter with simultaneous time streams that nearly kills Brydon, Nietzsche acknowledges that the suprahistorical viewpoint is beyond the capacity of the human mind, and is therefore just as problematic as living unhistorically: ‘we may use the world “suprahistorical” because the viewer from this vantage point could no longer feel any temptation to go on living or to take part in history; he would have recognised the essential condition of all happenings’ (p. 65).³¹³ Surely the solution for modern humanity, Nietzsche concludes, is a combination of both:

The antidote to the historical is called—the unhistorical and the suprahistorical [...]. With the word ‘the unhistorical’ I designate the art and power of forgetting and of enclosing oneself within a bounded horizon; I call ‘suprahistorical’ the powers which lead the eye away from becoming towards that which bestows upon existence the character of the eternal and stable. (p. 120)

What Nietzsche is proposing here is the careful maintenance of a dialectical tension between complete immersion in the passing of time and its extreme opposite, complete transcendence of time. Grosz offers a similar interpretation of Nietzsche’s essay, also observing that ‘a being largely dominated by memory and the past is one for whom the present and its possibilities of action are curtailed’.³¹⁴ Thus Nietzsche would view the Spencer Brydon of the first part of ‘The Jolly Corner’, with his obsession for the lost potential of his other self, as a typical example of the modern man who is burdened by the past. This kind of relationship with the past is, for Nietzsche, a key factor in what he views

³¹² William protests against the block-universe view as a monistic, deterministic trap: ‘The only way to escape from the paradoxes and perplexities that a consistently thought-out monistic universe suffers from as from a species of auto-intoxication [...] of the block-universe eternal [...] is to be frankly pluralistic and assume that the superhuman consciousness, however vast it may be, has itself an external environment’ (*PU*, p. 310-311).

³¹³ Donadio argues that the ideal ‘lucid reflector’ in James’s fiction ‘corresponds closely to Nietzsche’s “supra-historical” man’ (p. 143). There are also parallels between Nietzsche’s unhistorical and suprahistorical viewpoints and Bergson’s successive and simultaneous treatments of time. See *Time and Free Will*, particularly pp. 99-104.

³¹⁴ E. Grosz, *The Nick of Time: Politics, Evolution, and the Untimely* (Durham, NC and London: Duke University Press, 2004), p. 116. I will refer to this text as *NT*. Grosz and I differ in our readings of Nietzsche’s eternal recurrence, however.

as the problematic decadence of modern culture. Matthew Rampley argues this point succinctly, claiming that Nietzsche views as problematic ‘the temporal logic of modernity’ where ‘time and history are problems to be overcome’.³¹⁵

In ‘On the Uses and Disadvantages of History’, Nietzsche begins to define what he sees as this problem of ‘the temporal logical of modernity’, claiming that the modern will desires to exact revenge on the past, and, by implication, life itself. ‘Leaving behind the past thus also means losing access to the future’, Grosz writes, and again, Brydon’s denial of his other self comes to mind (*NT*, p. 117). Brydon’s desire to exit the house of his past is described at one point by James as, literally, an impulse to self-destruction. After his terrifying descent down the floors of the house, Brydon reaches the final flight of stairs to the ground level, and ‘the ease increased with the sight of the old black-and-white slabs’ of the tile floor in the foyer. In the previous sentence, these slabs are referred to as ‘the marble squares of his childhood’ (p. 473). Brydon has reached both the bottom level of the house of his past, and his own personal past. The relief that Brydon feels is appropriate: not only is he nearer to his escape from the house that has suddenly become terrifying to him, but he is also in a space that reminds him of his own life as a child. The child, Nietzsche writes, exists at first in a state of forgetfulness, thus beginning life unburdened and happy, but ‘then it will learn to understand the phrase “it was”’: that password which gives conflict, suffering and satiety access to man so as to remind him what his existence fundamentally is—an imperfect tense that can never become a perfect one’ (*UM II*, p. 61). Before Brydon can escape his own ‘it was’—and by implication deny his own past as contained within the spaces of the house and in the person of his other self—the other self steps into the space of their mutual childhood and forces a confrontation.

³¹⁵ Nietzsche, *Aesthetics and Modernity* (Cambridge: Cambridge University Press, 2000), p. 148.

Nietzsche's early figuring of 'it was' anticipates a speech that his Zarathustra makes concerning time:

Willing liberateth: but how call ye that which putteth even the liberator in chains?

'Thus it was'; so it is named, the Will's teeth-gnashing and loneliest wailing.

Impotent against that which is done, it an evil onlooker of all that is past. [...]

[The will] is wroth that time runneth not backwards. 'That which was' is named the stone which it cannot roll away.

Therefore it heaveth stones in wrath and indignation [...].

Thus Will, the liberator, became a torturer: on all that can suffer it taketh vengeance because it cannot enter the past. [...]

And now cloud upon cloud rolled over the mind, until at length madness preached: All things perish, therefore, all things are worthy to perish!³¹⁶

For the will that seeks revenge on the past—on that which is also a precondition of life—the only way to overcome the past is through annihilation, denying its existence altogether. Therefore this sort of resentment, an attempt to overcome the past, leads to what Nietzsche views to be the sense of cynical and decadent nihilism that is plaguing modern, Western culture. Nietzsche's concern is with finding a way to allow enough space for present and future creativity while preserving a sense of the past necessary to the preservation of life. This space is created by a consciousness powerful enough to combine the unhistorical and suprahistorical sensibilities. At stake here is an important distinction observed by Grosz:

The most central element in Nietzsche's conception of life is the question of time, time as that which connects, runs through, things and processes and conjugates itself as past, present and future. He is interested in how conceptions of the past affect or relate to our concerns in the present and future, with the question of history, with which he begins his erstwhile explorations of time. Time, however, cannot be reduced to history. History is that mode of writing the past that makes it accessible to and relevant for the present. (*NT*, p. 113)

³¹⁶ F. Nietzsche, 'Of Redemption', in *TSZ* (London: J. M. Dent and Sons, 1950), p. 127. See also Rampley's discussion of this section and its relation to nihilism, pp. 149 and 215-41.

History, then, is just one means of figuring the way in which the passage of time affects life. The limitation of history is that it is a *narrative* of the past, written in light of the present, and, as Grosz continues, 'Nietzsche wants to develop a history, a *reading* of the past, not just in light of the present, but for the future' (pp. 113, emphasis added). It is important that Grosz highlights the creative aspect of Nietzsche's approach to 'reading'. We have already seen how Hinton calls upon his reader to be 'creative' in constructing a conception of the fourth dimension. Similarly, Donadio observes that the Jamesian central consciousness is 'both active and passive [...]: it *creates* as it records by ceaselessly weighing, selecting and organizing the various aspects of the experience' (p. 136, emphasis added).³¹⁷ As with James and Wells, the spatialisation of time allows Nietzsche to imagine an alternative to the historical narrative of the past. If the will 'taketh vengeance because it cannot enter the past', then making the past into a *space*, imagining a 'visitable past' is another means of overcoming resentment.

Nietzsche's suprahistorical perception, which sees all time as a space where all the possibilities inscribed within it have already been fulfilled, 'leads the eye away from becoming' towards being, or the stability of the eternal. This stability is necessary for the development of human traditions and cultures, of science and art. This model of perception parallels Hinton's four-dimensional sensibility. Hinton's spatialisation of time transforms becoming into being: time has become a phenomenon of matter, and a consciousness not limited to three dimensions would be able to see that what—in three

³¹⁷ The creative aspect of the Jamesian consciousness in constructing the past is also the foundation of Rawlings's study, which takes 'James's "obscure hurt," [...] broadly interpreted and freely construed', as 'a point of departure and return for an exploration of aspects of the theory and practice of James as a historiographer, epistemologist, and grammarian and philosopher of time' (p. xviii). The 'obscure hurt' referred to here is the one incurred by James while fighting a fire in Newport, Rhode Island, in 1861.

dimensions—is thought to be temporality, is actually an already-established whole.³¹⁸ The three-dimensional consciousness of time as ‘fugitive consecutive nows’ is akin to the experience of Nietzsche’s unhistorical animals. Therefore, for Hinton, the development of four-dimensional vision, or suprahistorical sensibility, should be the goal of the human race. However, once attained, the human race will no longer be ‘human’, but something more. In fact, according to Hinton’s later writings, human beings actually are four-dimensional beings already, and therefore with proper training and discipline, they will be able to actualise their true capabilities, becoming able to cope with a four-dimensional view of reality. Hinton takes a democratic approach to developing this four-dimensional sensibility; it is a capability with which all are born, and ‘it only requires a certain amount of care to build up mental models of higher space existences’.³¹⁹ These ‘mental models’ are supposed to aid in the development of an ‘inner’ sense of vision, with which ‘we can organize our power of seeing in higher space, and [...] we can form conceptions of realities in this higher space, just as we can in our ordinary space’ (*NET*, p. 70). While Hinton believes that true perception of this ‘higher space’ on a mass scale will lead to an intellectual and moral revolution, he tempers the final vision of ‘the realized results of ages of the higher transverse growth’ in ‘An Unfinished Communication’ by returning his narrator to a three-dimensional, analogically unhistorical, view of reality (*SR 9*, p. 176). There is a similar tension here between being and becoming to that which we see in Nietzsche’s dialectic of unhistorical and suprahistorical sensibilities.

³¹⁸ Hinton defers the completion of this ‘whole’, however, both in ‘An Unfinished Communication’ and elsewhere. In another romance from the second series of *Scientific Romances*, Hinton acknowledges the probability that there are ‘many dimensions’ to space, exceeding four. See ‘Many Dimensions’, in *Scientific Romances Second Series*, pp. 27-44. I will refer to this text as *SR 7*.

³¹⁹ *NET*, p. 49. In this same text, Hinton also proposes the possibility that some ‘molecules’ in the human brain are capable of four-dimensional movement. See pp. 48-50.

This tension is also at the foundation of Nietzsche's use of the idea of eternal recurrence in *Zarathustra*, the book in which Nietzsche provides his most thorough expression of this concept. In his study of *Zarathustra*, Robert Gooding-Williams describes the book as a quest-story about the eponymous character's struggle to create new values in what he views as a bankrupt time and culture. Like Rampley, Gooding-Williams reads *Zarathustra* as a text in which 'Nietzsche treats modernism as a philosophical problem' (p. 3). Both Gooding-Williams and Rampley appear to be working with a conception of modernity that derives from Pound's injunction to artists to 'make it new'. Gooding-Williams writes: 'According to this concept, to call a poem, a painting, or philosophical treatise "modern" is to advert to the advent of the new; it is to assert that there has been a creative break with the past' (p. 3). If we interpret this desire to break with the past, or to deny history as exemplified in Nietzsche's description of the will's rage against 'it was', then another dimension of Nietzsche's understanding of the problematic nature of modernity becomes apparent: actions performed in the service of denying history are still actions that are defined by that conception of history. This critique of modernity does not make Nietzsche a postmodernist, as some critics would like to assert, however: although Nietzsche is suspicious of the drive to escape the past—and of the existence of a transcendental 'other' that such an escape implies—his dialectic of the unhistorical and suprahistorical indicates that he still believes in the need for the illusion of the possibility of temporal displacement, or ahistoricity.³²⁰ The desire to break with the

³²⁰ See Rampley, p. 239, who addresses this issue in terms of the 'sublime' and Lyotard. There have been numerous, and often contradictory, discussions of Nietzsche as a postmodernist. Famous examples include Paul de Man's discussion of Nietzsche and language in *Allegories of Reading* (New Haven: Yale University Press, 1979), pp. 103-118; Michel Foucault's essay, 'Nietzsche, Genealogy, History', in *Language, Counter-Memory, Practices* (Ithaca: Cornell University Press, 1977) and Derrida's *Spurs: Nietzsche's Styles* (Chicago: Chicago University Press, 1979). See also *Nietzsche as Postmodernist: Essays Pro and Contra*,

past implies a linear model of time and Nietzsche's concept of eternal recurrence—by proposing a counter-model of circularity and repetition—opposes this model. Rampley argues convincingly that Nietzsche proposes the idea of eternal recurrence as a thought-experiment, in order to see 'how "incorporation" of the idea of Eternal Recurrence would *change* and *alter* human thinking and practices' (p. 149, original emphasis). However, the desire to reconfigure the ways in which a particular culture perceives or performs is still in line with a project that places a premium on originality. Although perhaps paradoxical, it is not surprising, to find in Nietzsche's critique of modern culture symptoms of his own modernity.³²¹

Hinton is similarly concerned with changing the ways in which people think and act. However, he and Nietzsche appear to differ on one fundamental point: the existence of universal truth that is founded in turn upon a transcendent 'reality'. In fact, both Hinton and Nietzsche undermine their opposing viewpoints on several occasions. While Nietzsche claims that 'there are no eternal facts, just as there no absolute truths',³²² Hinton—though he consistently defers conclusion in his writings—often implies that, in his mind, the fourth dimension of space represents an absolute 'reality'. This contradiction in Hinton between deferred conclusion and absolutism is further complicated by the fact that Hinton also appears to be a nominalist. He writes:

Every word we use has so wide and fugitive a meaning, and every expression touches or rather grazes fact by so very minute a point, that, if we wish to start with something which we do not know, and

ed. by C. Koelb (Albany: State University of New York Press, 1990), for a sampling of debates concerning Nietzsche and postmodernism.

³²¹ Habermas even goes so far as to locate Nietzsche at the foundation of the Modernist 'glorification of [the] spontaneity of the moment and the new', and 'the anarchical intention [...] to explode the continuum of history'. See 'The Entwinement of Myth and Enlightenment: Re-Reading *Dialectic of Enlightenment*', in *New German Critique* 26 (1982): 13-30, 25.

³²² F. Nietzsche, *Human, All Too Human*, trans. by R. J. Hollingdale (Cambridge: Cambridge University Press, 1986), p. 2, emphasis removed.

thence process in a certain manner, we are forced away from the study of reality and driven to an artificial system, such as logic or mathematics, which, starting from postulates and axioms, develops a body of ideal truth which rather comes into contact with nature than is nature. (*NET*, p. 9)

Thus, although Hinton also critiques the artificiality of the structures used in Western epistemology to describe and make assumptions about the nature of reality, he also believes in the existence of an absolute reality, or 'nature', that one might directly apprehend via the '4 dimensional hypothesis'. For Hinton, this reality is not an abstraction; it is simply imperceptible to the three-dimensional human consciousness. In fact, Hinton writes in 1896, 'by passing deeper and deeper into absolute observation of matter, and familiarity with it'—by searching for signs of the fourth dimension—humans can catch 'a glimpse of a higher world, which is no abstraction, or fancy, or thought, but which our realities are the appearances' (*SR* 7, p. 42). Thus in Hinton's hyperspace philosophy, there exists a material 'reality' which so exceeds the third dimension that it makes the current, apparent human 'reality' seem like a mere abstraction by comparison. However, like Nietzsche's critique of modernity that challenges the possibility of transcendence and absolute values, Hinton's transcendental materialism is full of internal contradiction. This coincidence could be seen as superficial, especially in light of similar contradictions that arise within philosophical texts from the same period that attempt to combine occult or metaphysical speculations with scientific discourse.³²³ It is by examining the similarities between Hinton's expression of the fourth dimension in 'An Unfinished Communication' and Nietzsche's ideas about space, time and eternal recurrence in 'On the Uses and Disadvantages of History' and *Zarathustra*, that a clearer picture of the growing modern fascination with over-coming in relation to space, time and consciousness emerges. First,

³²³ See, for example, *UU*. Nietzsche also attempted to construct a scientific 'time-atom' theory at the time that he was writing 'On the Uses and Disadvantages of History'. See C. Crawford, 'Nietzsche's Overhuman: Creating on the Crest of the Timepoint', *Journal of Nietzsche Studies* 30 (2005): 22-48.

however, it will be helpful to examine the context of early responses to Nietzsche's work in Britain and the United States and Hinton's own personal background.

Nietzsche's early reception in the English language

The first complete translation of one of Nietzsche's books did not appear in the English language until 1895.³²⁴ There are few examples of discussion of Nietzsche or his ideas in print before this time. In his study of Nietzsche's reception in English and American literature, Patrick Bridgewater cites Max Nordau's negative reaction to Nietzsche in *Degeneration*, which was translated into English in 1895, as the earliest extended treatment of the philosopher in English.³²⁵ In an updated essay on this topic, Bridgewater offers earlier examples of possible influence and direct mention of Nietzsche: 'the earliest echo of Nietzsche's thought in English literature appears in George Gissing's *The Unclassed* in 1884; the earliest direct references occur in George Egerton's *Keynotes* and John Davison's *Sentences and Paragraphs*, both of which appeared in 1893'.³²⁶ Donadio notes that Henry James's friend, Thomas Sergeant Perry, wrote a favourable review of Nietzsche's *Untimely Meditations* in the July 1875 issue of the *North American Review* (pp. 17-19).³²⁷ Bridgewater also fails to discuss Havelock Ellis, who was another early English reader of Nietzsche, as David S. Thatcher notes in his earlier study of Nietzsche's reception in England.³²⁸ Ellis first encountered Nietzsche's writing around

³²⁴ *The Case of Wagner* appeared in English in 1895. *TSZ* was not translated until 1896. See Thatcher's 'Dates of Appearance' list after the preface to his *Nietzsche in English, 1890-1914: The Growth of A Reputation* (Toronto and Buffalo: Toronto University Press, 1970).

³²⁵ P. Bridgewater, *Nietzsche in Anglosaxony: A Study of Nietzsche's Impact on English and American Literature* (Leicester and New York: Leicester University Press, 1972), p. 11.

³²⁶ P. Bridgewater, 'English Writers and Nietzsche', in *Nietzsche: Imagery and Thought, A Collection of Essays*, ed. by M. Pasley (London: Methuen, 1978), pp. 220-258, p. 226.

³²⁷ Donadio, pp. 17-19. T. S. Perry, in his review in the 'Critical Notices' of the *North American Review* (July 1875): 190-193, offers a favourable, though somewhat prosaic reading of *Unzeitgemässe Betrachtungen*.

³²⁸ See Thatcher, pp. 93-120.

1885, at the same time that he and Hinton were friends (Thatcher, p. 95). It was not until 1896 that Ellis commented, favourably, on Nietzsche in print, in the journal *The Savoy*.³²⁹ Both Bridgewater and Thatcher fail to notice Hinton's 1895 story, 'An Unfinished Communication'. Although Hinton does not explicitly mention Nietzsche or use the phrase 'eternal recurrence', a close analysis of this text strongly suggests that either Hinton and Nietzsche had a mutual influence, or that Hinton had encountered Nietzsche's ideas at some point prior to writing it.³³⁰ Because Nietzsche had not been translated to English at the time that Hinton was writing 'An Unfinished Communication', it seems likely that Hinton was able to read German well enough to absorb Nietzsche's main arguments about history and eternal recurrence.³³¹ There is evidence to support this speculation: Hinton uses German in the text of 'An Unfinished Communication', one of his characters—an Austrian woman—speaks only in German and is not translated.³³² Hinton also quotes Kant in the original German in *A New Era of Thought* (pp. 79-80). There is further evidence that the Hinton household was familiar with the German language in a 1901 book of poems published by Hinton's wife, Mary Boole Hinton: one of the poems is titled 'After Death (Founded on passage in the Zend Avesta)'.³³³ A

³²⁹ T. Gibbons, *Rooms in the Darwin Hotel: Studies in English Literary Criticism and Ideas 1880-1920* (Nedlands: Western Australia University Press, 1973), p. 37. Ellis's essay on Nietzsche is reprinted in his *Selected Essays* (London: J. M. Dent and Sons, 1936), pp. 1-54. Ellis's wife, Edith Ellis, also wrote a book in 1910, in which she discusses Hinton's father, Edward Carpenter and Nietzsche. Edith Ellis describes James Hinton as a precursor to Nietzsche. See *Three Modern Seers* (London: Stanley Paul, 1910).

³³⁰ See Webb's introduction to the *Scientific Romances*. Webb also observes the similarities between the ideas expressed in 'An Unfinished Communication' and Nietzsche's idea of eternal recurrence, p. v.

³³¹ The main setting for 'An Unfinished Communication' is the United States, in New York and New England, suggesting that Hinton composed the story sometime between his arrival in America, around 1892, and the original publication date of the text, 1895.

³³² See *SR 9*, especially pp. 169-171.

³³³ See M. B. Hinton, *Other Notes* (Washington, DC: Neale Publishing, 1901), p. 40. The reference here is to Fechner's *Zend-Avesta*, which has never been completely translated into English. The text was reissued in German in 1901, and fragments of it have been translated into English after this date, for example in appendices to Fechner's *The Little Book of Life After Death*, trans. by M. C. Wadsworth, with an introduction by W. James (Boston: Little, Brown, 1907).

biographical description of Hinton from *The Gopher*, a publication at the University of Minnesota where Hinton lectured briefly in the 1890s, states that Hinton studied in Berlin after completing his undergraduate degree at Oxford in 1876.³³⁴ While this is the only mention of Hinton's possible sojourn in Germany within his extant biographical records, the possibility that Hinton lived in Berlin for a period of time is also implied by the fact that his semi-autobiographical narrator in 'An Unfinished Communication' has lived in Vienna as a young man. Hinton similarly transposed Yokohama and Hong Kong in 'Stella', making his—again, semi-autobiographical—Stedman exile himself and his wife in China for a period of years.

In citing this circumstantial evidence, I simply wish to highlight the context of Hinton's situation during the last three decades of the nineteenth century. While such speculation does not offer conclusive support for Hinton's familiarity with Nietzsche's writing, my purpose here is to further flesh out Hinton's personal history, since he remains an obscure figure. In the following pages, I will use examples directly from Hinton's 'An Unfinished Communication' to offer a more substantial comparison of the ideas of Hinton and Nietzsche. It is possible, of course, that since—as Bridgewater notes—'Nietzsche's ideas [...] were commonplace at the time', the thoughts Hinton expresses in 'An Unfinished Communication' are similarly a product of his late-nineteenth-century cultural context ('English Writers', p. 223). Indeed, it is possible to make the case, as Bridgewater does, that W. B. Yeats had already touched upon the idea of eternal recurrence in his poetry.³³⁵ My focus in the following discussion is on highlighting the ways in which

³³⁴ See *The Gopher* XII (1899): 37. See also Henderson, *FDNG*, p. 26, note 62.

³³⁵ Bridgewater, 'English Writers', p. 230. Though there may be similarities between Yeats's cyclic poetry and the idea of eternal recurrence, Thatcher notes that there is no indication that he read Nietzsche until 1902. See also p. 139.

Hinton's text corresponds to Nietzsche's ideas concerning the linear conception of time and modern epistemology as philosophical problems; both men deal with this problem through reconfiguring space and time. As Stephen Donadio notes, speaking of Henry James and Nietzsche, it is important 'to connect recurring patterns' in the thinking and writing of these two men, because

taken together, the lives and works of these two ostensibly alien figures provides us with a way of grasping the far-reaching and pervasive implications of the momentous shift [...] which occurred in Europe and America in the course of the nineteenth century, and which is ultimately responsible for producing the complex and often contradictory cultural phenomenon we have come to identify as modernism. (pp. 7-8)

I am therefore building on Donadio's idea, by bringing Hinton and, shortly, William James, into this network of 'recurring patterns'. By examining Hinton alongside Nietzsche and William, we can see early examples of the growing trend at the turn of the century of embracing new models of space and time in the service of art and science, and by examining these writers through the discourse of hyperspace philosophy, we open up a fresh perspective on the literature of this period.

'An Unfinished Communication' (1895)

In considering the correspondences between Nietzsche's ideas and Hinton's hyperspace philosophy, as expressed in 'An Unfinished Communication', we find a shared key element: the concept of 'unlearning'. Nietzsche frequently mentions unlearning in positive terms, and in 'On the Uses and Disadvantages of History', he uses the words *verlernen* and *vergessen* often. Both words are commonly translated into English as 'to forget'; however, both Oscar Levy, who provided the first translation of Nietzsche's complete works in English, and R. J. Hollingdale, who has more recently translated Nietzsche for Cambridge University Press, differentiate between *verlernen* and *vergessen*

by rendering the former as 'to unlearn' and the latter as 'to forget'. 'To unlearn' seems to be the more literal translation of *verlernen*. The use of these two different words implies a difference between ways of dealing with history, between active and passive abandonment of the past. To 'unlearn' something is to actively take it to task in order to alter its effect on one's present perception, as opposed to forgetting, which seems to imply an involuntary, unhistorical relationship to the past. For example, in the first edition of *Zarathustra*, Nietzsche appears to imply that unlearning is a conscious activity: 'Verlernte er den Geist der Rache und alles Zähnefnirchen? [Can the will unlearn the spirit of revenge and teeth-gnashing?]'.³³⁶ Turning to 'An Unfinished Communication', we see that the concept of unlearning plays a major role in the plot development. This story is told as a first-person narration of a middle-aged man who is overcome by the 'sordid details' of his personal history, and the squalid quarter of New York in which he finds himself (p. 109). Walking down a street in the city, the narrator dimly registers the multitude of advertisements for 'professors in the last stage of indigence' until an unusual sign catches his eye, which reads: 'MR. SMITH, UNLEARNER' (pp. 109-110).

The narrator finds the idea of unlearning exciting, and the plot of the story hinges on his quest to find the Unlearner. The narrator's reaction to the advertisement is worth quoting at length:

How pleasant it would be to let pass away some of the verbiage I learnt at school—learnt because teachers must live, I suppose. The apeing [sic] and prolonged caw called grammar, the cackling of the human hen over the egg of language—I should like to unlearn grammar. The sense came over me [...] of how much I should owe to any man who would rid me of what I learned at college—that plastering over the face of nature, that series of tricks and devices whereby they teach a man knowing nothing of reality to talk of it as if he did. There passed before my mind that pallid series of ghosts,

³³⁶ Also *Sprach Zarathustra: Ein Buch für Alle und Keinen* (Leipzig: C. G. Naumann, 1904), p. 208. This text is an impression of the first edition.

ghosts of what had once been one man's living [...] the books by which professors—because they must live, I suppose—keep younger men from life and work.

A gleam of hope came over me that I might forget my philosophy lectures and the teaching of that bespectacled Doctor of all the sciences, who always turned the handle the wrong way, while he told us the principles by which things go.

[...] If all these were to sink and disappear from me, then perhaps I should be face to face with something not a spectre, not an instance and example of a phase, a formula, a barren set of words.

(pp. 110-111)

Although we see an important difference here between Hinton's philosophy and Nietzsche's scepticism about the existence of a 'true', naked 'nature' or 'reality', there are similarities that are even more striking.³³⁷ Late in his life, Nietzsche claims that mathematics 'dissolves the world into formulas', and defines science as 'the attempt to create a common sign-language for all phenomena, for the purpose of easier calculability and hence mastery of nature. However'—according to Nietzsche—'this sign-language, which brings together all observed laws, explains nothing'.³³⁸ Here we can observe a resemblance to Hinton's interpretation of epistemology and language, that it 'plasters over the face of nature' with descriptions that tell nothing of the actual 'reality' of nature. Nietzsche similarly derides the burgeoning of such 'scientific' discourse in 'On the Uses and Disadvantages of History', writing that

science has certainly been pushed forward at an astonishing speed over the past decades: but just look at the men of learning, the exhausted hens. [...] They can only cackle more than ever because they lay eggs more often: though the eggs, to be sure, have gotten smaller and smaller (though the books have got thicker and thicker). (p. 99)

³³⁷ It is important to keep in mind, as Bridgewater notes, that contemporary English writers' reception of Nietzsche 'is essentially one of subjective reactions and creative misunderstandings' ('English Writers', p. 223). Therefore, if Hinton is influenced by Nietzsche here, it is not improbable that he could be unintentionally contradicting some of his ideas.

³³⁸ *Nachgelassene Fragmente: Frühjahr bis Herbst 1884*, Vol. VII₂ of *Nietzsche Werke: Kritische Gesamtausgabe*, ed. by G. Colli and M. Montinari (Berlin and New York: Walter de Gruyter, 1974), p. 25[308]. In giving this quotation in English, I have checked my own translation against the same passage, which is quoted in O. Ryogi's essay, 'Nietzsche's Conception of Nature from an East-Asian Point of View', trans. by G. Parkes, in *Nietzsche and Asian Thought* (Chicago: Chicago University Press, 1991), pp. 200-213, p. 202.

There is a sense here—which is mirrored in Hinton's narrator's speech—that the production of science and knowledge for the sake of institutionalised consumption, rather than the pursuit of practical knowledge and action, is crippling the spirit of youth and innovation with the dead weight of the past. The 'younger men' who are kept from 'life and work' by this burden in Hinton's text are akin to Nietzsche's 'youth' in 'On the Uses and Disadvantages of History': these are 'that first generation of fighters and dragon-slayers' who must create a space for the next generation 'to grasp that culture can be something other than a *decoration of life*, that is to say at bottom no more than dissimulation and disguise' (*UM II*, pp. 121, 123, original emphasis). Nietzsche's suspicion of the existence of an absolute reality is rendered ambiguous in this statement by the implication that culture *decorates* life, which in turn implies a deeper reality beyond the disguise. Here again, one discerns an echo of Nietzsche within Hinton's desire to strip away the decorative masks of language and science and get at a 'truer' substance beneath, 'to be face to face' with something more than 'a barren set of words'.

The narrator's quest to find the Unlearner is, at the beginning, founded in a nihilistic desire to deny the past, and, therefore, existence. He experiences the same sense of desperation as George Dane at the beginning of 'The Great Good Place', of being crushed or smothered by a proliferation of culture. However, Hinton's narrator is also an inversion of Dane: while Dane's feelings of being overwhelmed are due to his worldly success, the narrator of 'An Unfinished Communication' is brought down by his failures. Dane wishes to be forgotten by the world; Hinton's narrator seeks to forget the world. Both men, like Spencer Brydon, desire to somehow escape the circumscription that the past has placed upon their present and future selves. In a conversation with the Unlearner,

the narrator asks for help in forgetting his personal history. However, the Unlearner differentiates between 'unlearning', which is his domain, and 'forgetting': "[...] wherefore forget? What you have been is the food on which your soul lives. Think how closely connected memory and self-consciousness are; snap the last chord of recollection and you would lose the sense of personal identity" (p. 120). The narrator's desire to forget is, then, the desire not for unlearning, but oblivion: "I do not want these stale moralities," I said; "we are fettered and bound by the past, and oblivion—utter oblivion—is a cheap price to pay for freedom" (p. 120). His request to be able to forget is a form of *reactive* nihilism, driven by resentment, or the desire to wreak revenge on the bond of the past, by denying its existence, and life.³³⁹ This revenge-denial is one extreme in the will's range of possible reactions to the frustration of its inability to transcend time, or history. As the Unlearner notes, the narrator's nihilistic drive for oblivion—if successful—would place him outside the range of the human in a negative sense; snapping the connections between memory and consciousness would turn him into a sort of unhistorical animal.

In his recognition of his own education as a philosophical problem that stems from an accumulation, or superabundance, of history, Hinton's narrator is akin to Nietzsche's Zarathustra, who seeks to unwill the past. Through his contact with the Unlearner, Hinton's narrator grows to recognise the possibility of enacting a sort of 'active' nihilism, which is life-affirming. Rampley observes the creative aspect of this active nihilism, writing that it results from 'the recognition of the perspectivism of interpretation, acceptance of the contingency of knowledge, and the recognition that "knowledge" is interpretive will to power' (p. 219). This re-cognition is only possible if one is able to first unlearn the perspective from which time appears to follow a linear model. This new

³³⁹ See Rampley, who discusses reactive and active nihilism, especially pp. 13-49, and 215-241.

perspective is analogous to the suprahistorical viewpoint that Nietzsche describes in ‘On the Uses and Disadvantages of History’. In ‘An Unfinished Communication’, it is the view from the fourth dimension of a spatialised totality of the past and future that allows the narrator to unlearn—which is itself reinterpretation of knowledge—rather than simply forget: the difference here is between re-writing and erasing.³⁴⁰ Both Hinton and Nietzsche imagine a solution to the ‘problem’ of time, or history, by spatialising it, by proposing an alternative perspective from which one can view it. Reconfiguring time as space allows Nietzsche and Hinton to create what Grosz describes as ‘a more adequate history’, which ‘would always rewrite the past, not only from the vantage point and interests of the present, but more significant, from the interests of a future yet to be born. It would reveal its own untimely location’ (*NT*, p. 124). I shall now turn to explore how Nietzsche and Hinton construct such ‘untimely’ locations in their two most experimental fictional texts.

The spatialisation of time in *Zarathustra* and ‘An Unfinished Communication’

In *Zarathustra*, Nietzsche proposes a spatialised version of time in order to render his idea of eternal recurrence understandable. In the section ‘Of the Vision and the Riddle’, Zarathustra tells of a dream in which he comes upon a gateway he calls “‘Moment’”: “‘From this Gateway called Moment a long, unending road runneth back—behind lieth all eternity’”, he tells his audience (p. 142, emphasis removed). This infinitely long road also stretches from the gateway in the opposite direction, representing the future. In his dream, Zarathustra approaches the gateway while climbing up a steep mountain

³⁴⁰ Rampley’s claim that Nietzsche’s form of active nihilism contains a ‘crucial element’ of ‘the absence of nostalgia for anything metaphysics might regard as “true knowledge”’ is problematic in light of Nietzsche’s remarks about science and language, which I quoted above (Rampley, p. 219). Likewise, Hinton contradictorily views the fourth dimension as granting access to ‘true knowledge’, but he grounds this belief in a transcendent, absolute reality by making it a physical space: ‘To think of ourselves as any other than things in space and subject to material conditions, is absurd’, he writes in 1888 (*NET*, p. 94).

path. A dwarf, which represents the ‘Spirit of Gravity’, or the sense of the past, weighs him down on this climb (p. 140). Seeing the gateway and the two roads, Zarathustra questions the dwarf: “Believest thou, Dwarf, that these roads controvert one another *eternally?*” (p.142, original emphasis). The dwarf’s response is to threaten Zarathustra’s hopes of surmounting the past with the idea of the eternal recurrence of the same: “Time itself is a circle” (p. 142). As Heidegger points out, Nietzsche’s thought of eternal recurrence is ‘the thought that is hardest to bear’, and Zarathustra’s imagining of time as a place, or a road, allows him to visualise this both conceptually difficult and emotionally crushing idea.³⁴¹ His ability to grasp this idea is part of his ‘going-under’. When he asks himself, “must not we all return eternally?”, he is horrified with this newly-understood possibility: “Thus spake I and ever more softly! For I feared mine own thoughts and the thoughts behind my thoughts” (p. 142). Here, in Zarathustra’s imaging of eternal recurrence, there is no room for change:

‘Must not all that *can* have run already run this road? [...] And if all hath already been [...] must not this Gateway also have previously existed? [...] For all that *can* run—even the length of this long road—*must* run it yet again’. (p. 142, original emphasis)

The emphasis on ‘can’ here highlights the problem of eternal recurrence of the same: if it exists, then there is no possibility of creating anything new because all that could be created—the future—has *always* already existed, and always will. The spatialised view of the entirety of time is a suprahistorical one; such a viewpoint is a strong antidote to the linear model of time and the obsession with regaining a lost past. However, Nietzsche argues that this broad view of time also precludes the possibility of any will to action just as much as the linear model of time, with its denial of the past.

³⁴¹ Heidegger, p. 44. Nietzsche titles the section of *The Gay Science*, where he first introduces the idea of eternal recurrence, ‘Das grösste Schwergewicht’. As Donadio notes, this title is translated as ‘The Heaviest Burden’ by Levy, and ‘The Greatest Weight’, in Kaufmann (p. 35).

Rampley argues that Nietzsche uses the idea of eternal recurrence of the same as a sort of thought-experiment, an attempt to 'avoid the onset of nihilism' by countering the linear model of time which assumes that 'all volitional acts have to accept the past as the absolute other of the present, as absolutely irrecoverable' (p. 149). However, Zarathustra's image of the present moment as a moveable gateway along the track of time is problematic in that it similarly precludes access to the past. Gooding-Williams explains this paradox:

To suppose one's will were ensconced within an eternal, present moment, would be to deny, in effect, that one's will could ever cease to will what it was willing at that moment, for whatever it was willing at that moment it would have to will eternally. [...] From the viewpoint of such a will, human being-in-time would involve [...] no capacity to revalue and redeem passions of the sort that claimed generations past. (p. 225)

Thus the view from the gateway is an unhistorical one. Zarathustra, as Rampley notes, challenges the priority of this 'fugitive now': "are not all things thus knotted so fast together that this moment draweth after it *all* that is to come? *And therefore* itself also?" (p. 142, original emphasis). The gateway-perspective is an illusion; the present moment is never entirely divorced from the past or the future. Zarathustra's gateway anticipates William's 'specious present', which he describes in an oft-quoted passage from *The Principles of Psychology*: here William argues that the present moment is 'no knife-edge, but a saddle-back, with a certain breadth of its own on which we sit perched, and from which we look in two directions into time'.³⁴² Rampley observes that, implicit in 'Nietzsche's discussions of Eternal Recurrence, is a questioning of time into heterogeneous "aspects"' (p. 151). Both William and Hinton question the 'knife-edge' or 'fugitive nows' of temporality as well.

³⁴² W. James, *The Principles of Psychology, Authorized, Unabridged Edition* (New York: Dover, 1950), Vol. I, p. 608. I will refer to this text as *PP*.

What is important in the gateway scene is how Zarathustra's spatialised vision of time allows him to understand the present moment as a site that is created by the past, and that the mere existence of the present moment precludes any real possibility of denial of the past. One's realisation of this fact is based entirely on having gained a suprahistorical perspective, which is accessible—in the case of both Zarathustra and Hinton's narrator—through the spatialisation of time. Such a vision of the present moment, as Rampley convincingly argues, makes 'now' the place where

the past is always being refigured, but its content never remains the same. *Amor fati* logically follows from this. Far from being a fatalistic acceptance of everything that has been, it is an affirmation of everything that has been in light of the recognition that the meaning of history can always change depending on the content of the present. (p. 152)

Here the present moment is far from being the site of absolute denial of the past, of passive forgetting. There is an active 'unlearning' here, of the metaphysical desire for transcendence of time and space altogether. This 'paradoxical impulse', as Grosz describes it, 'to know what one must forget, to know in order to forget it', is the unlearning that allows Hinton's narrator to 'make something positive of this past without betraying it, repeating it or continuing it, to produce a future that both breaks with the past yet at the same time refuses to disown it' (*NT*, p. 119).³⁴³

Returning again to Hinton's text, we can observe a similar vision of recurrence, as well as a tension between the unhistorical and suprahistorical, or becoming and being. The narrator seeks out the Unlearner in a remote coastal village in New England. After the conversation with the Unlearner from which I have quoted above, the Unlearner advises the narrator to visit an even more remote village along the coast. The narrator spends

³⁴³ Grosz argues that this impulse 'seems to be the very condition of all radical politics [...] In other words, at stake in this Nietzschean problem of the force of history is the degree to which the status of resistance (of the present/the future) is linked to, revives and transforms the power (of the past)' (*NT*, p. 119).

several days in this village until one afternoon, when he is out walking on the beach, he is caught in the incoming tide and drowns. While he is drowning, the narrator experiences recurrences of his life to date; however, after he has died, he begins to experience something very similar to Nietzsche's eternal recurrence.³⁴⁴ The scenes that comprise the narration after the death of the narrator have an untimely, almost cinematic, quality to them. Time is collapsed into space in these scenes, in a way similar to Zarathustra's narration of his dream in 'Of the Vision and the Riddle'. Gooding-Williams describes the nature of the instantaneous cuts from one time and place to another in this section of *Zarathustra*: 'Because these cuts [...] seem to take *no time* at all, they evoke the impression that all [...] times are the same time' (p. 228, original emphasis).³⁴⁵ Time is fixed in these visions, depicted as a space from which one can view the totality of history. Like Nietzsche's suprahistorical thinker, for whom 'the past and present are one, [...] a motionless structure of value that cannot alter and a significance that is always the same', Hinton's four-dimensional visionary narrator at the end of the story is able to envision his entire history, depicted as abrupt 'jump-cuts' from one time and place to another (*UM II*, p. 66). First the narrator is a child in England, then a young man in America, then a student at Cambridge, an adult in Vienna, in New York City, and finally, the New England coast. The narrator's ability to re-envision his life in such a manner forces him to

³⁴⁴ Hinton is also playing on the convention that a drowning person will see their entire life 'flash before their eyes'. F. C. S. Schiller draws on this convention as well, writing that 'if the body is a mechanism for inhibiting consciousness, [...] it will be necessary to invert also our ordinary ideas on the subject of memory. It will be during life that we drink the bitter cup of Lethe [...]. And this will serve to explain [...] the extraordinary memories of the drowning and the dying generally'. See *The Riddles of the Sphinx: A Study in the Philosophy of Evolution* (London: Swan Sonnenschein, 1891), p. 296. Schiller's text, in his discussions of consciousness, the 'Real', time and becoming, runs parallel to Hinton's hyperspace philosophy, and may have influenced Hinton's 'An Unfinished Communication'.

³⁴⁵ See also Frank, who, drawing on discussions by Eisenstein and Robbe-Grillet on the cinematic montage, observes that 'the juxtaposition of disparate historical images in Joyce, Pound, and Eliot also transforms the past into the present of the indicative; and in doing so they turn history into myth'. Frank also cites Cassirer's definition of the mythic mode of thought, which is based upon 'a lack of differentiation between foreground and background in its pictures of reality' (p. 78).

acknowledge and accept the painful elements of his past that he wished to deny at the beginning of the story. In a vision of his own 'down-going', the narrator encounters what he calls his 'intimate self', which he describes as a 'Pan creature'.

This 'intimate self' appears to be the base, sensual side of the narrator, and he observes that this creature is a fundamental component of human nature: 'As I walk, I see one and another of his kind following or arm in arm with men like myself, and I know that this city is full of them' (p. 167). The narrator denies this side of himself three times in his vision, but the creature undermines the narrator's ability to transcend himself, telling him that such attempts make him "endlessly wretched [...] you know you have no joy in life save for me, and all you think or do is to give me pleasure" (p. 167). The narrator challenges this attempt at a total appropriation of his personality; however, he also accepts the 'Pan creature' as a part of himself, replying "It is not so," I say. But he is close to me; he takes my arm familiarly; I know I shall never be rid of him and *do not want to*" (p. 167, emphasis added). In acknowledging and accepting this culturally proscribed aspect of himself, the narrator offers a damning indictment of the duplicity of his own culture's values, invoking the 'Victorian' language of virtue:

I know that this friend; this part of me, had fooled me; [...] when I thought my motives were so different. [...] This Pan creature [...] weaves the exhalations of earth into the shapes he wills, [...] assumes the garb of *pity, duty, sacrifice*, speaks in the name of *utility, common sense, sanctity*, and whatever he finds will gain his ends. (p. 170, emphasis added)

Having gained a 'higher' perspective on his life, and having unlearned some of the word-masks that decorate and disguise problematic aspects of human nature, the narrator's vision of the recurrence of the events of his life expands even further. The recurrences of his life have allowed him to unlearn the linear model of time, and the revenge-driven nihilism that results from such a model: 'Yet though the bond—the fetter of

unalterability—is on me, all feeling of loss and of the irrevocable passes away, for all are here; once together I know for ever together’ (p. 174). Here, like Nietzsche, Hinton dramatises the effect of the experience of eternal recurrence for the purposes of examining its impact on the thoughts and behaviour of his human subject. The experience of eternal recurrence for Hinton’s narrator, the liberation from the feeling of irrevocability, alters his perspective even further: ‘But watching closely with so eager a curiosity, I see that each of us [in each scene of recurrence] is not doing exactly the same—and see, our lives are altering’ (p. 174). This is not eternal recurrence of the *same*, but eternal recurrence with variation; the past is constantly altering. Here is another challenge to what Wells calls the ‘cyclic delusion’; the pattern described here is instead a spiral, where nature repeats, but always with variation. This is the sort of eternal return that, in Deleuze’s words, ‘does not make *everything* come back. It is still selective, it “makes a difference”’.³⁴⁶ Hinton places a similar emphasis on the creative aspect of making a difference in eternal recurrence in ‘An Unfinished Communication’, as his narrator explains: ‘I feel that sudden touch which Nature lays on all those that die, saying to them, “Know! I am ever changing, altering. With me everything is in a state and stage of development. I allow not anything to be cast in a rigid mould, *not even thy past life in thy imagination*’ (p. 174, emphasis added). The past is thus open to reinterpretation and appropriation through human consciousness and creativity. The will cannot change ‘it was’ by travelling back along the successive line of time, but within a simultaneous, spatialised time, it is always already present in each moment.

This suprahistorical view of time is also a dissolution of individualised, ‘fugitive nows’. The drawback of such a perspective, for Nietzsche, is the corresponding dissolution

³⁴⁶ G. Deleuze, ‘The Simulacrum and Ancient Philosophy’, in *LS*, pp. 253-279, p. 265, original emphasis.

of the self that occurs here. 'Imagine the extremest possible example of a man who did not possess the power of forgetting [...]: such a man would no longer believe in his own being, would no longer believe in himself', Nietzsche writes (*UM II*, p. 62). Hinton's immersion of his narrator in the sea in the eternal recurrence sequence of the story mirrors a verse from Zarathustra's song, 'The Seven Seals':

'If I be fain for the sea and for all that is of the sea's kin, and fainest yet when in its raging it flouteth me—

If that lust of search be within me that driveth sails towards undiscovered lands; if there be a seafarer's lust in my lusting—

If ever my rejoicing cried aloud: The shore hath faded! Now is the last fetter fallen from me—

The boundless surgeth about me, far yonder gleam space and time'. (*TSZ*, pp. 205-206)

Gary Shapiro discusses Nietzsche's 'eroticization of space' in *Zarathustra*, particularly with regard to the depiction of the material world as an object of desire, and imagery involving the sea. In this love-song to the sea quoted above, Zarathustra depicts being adrift upon 'boundless' surging waters as a condition of the ability to 'see' space and time. Immersion in this vision is liberating: the fetters fall from Zarathustra as he escapes a linear model of time. According to Shapiro, in this song:

The boundless sea is not so much a place as the condition which makes all places possible [...]. The imagery of this verse of the song suggests that space and time, the two forms of the Kantian transcendental aesthetic, have been collapsed into the single form of space [...]. Now it is space, not the linear time of the Kantian transcendental aesthetic, which offers the sheer availability of all places.³⁴⁷

The condition of being able to perceive the fourth dimension seems, for Hinton, to offer a similar availability to the expansiveness of the whole of space which encompasses time.

³⁴⁷ G. Shapiro, *Nietzschean Narratives* (Bloomington: Indiana University Press, 1989), p. 96.

The narrator's individual, timely self dissolves into the boundless site of an eternal refiguration of consciousness and 'the past' here.³⁴⁸

Fechner and William James's 'mother-sea' of consciousness

It is by turning to William James that we can identify the deeper resonances of the sea metaphor in Nietzsche and Hinton. It is likely that the common source for all three men comes from the German mathematician and mystic, Gustav Fechner. Fechner, as I noted previously, was one of the earliest writers to use the dimensional analogy to describe a spatial fourth dimension, in his *Vier Paradoxa* (1846). He was also a key figure in the development of psychology as a science, and according to M. E. Marshall, his theory of psychophysics 'provided experimental psychology with one of its first and most lasting methods of quantitative description'.³⁴⁹ Fechner was also based in Leipzig during the years that Nietzsche was studying there.³⁵⁰ Like Charles Dodgson, Fechner published both academic and satirical texts, using the pseudonym, Dr. Mises, for the latter variety. However, in the later years of his life, the interests of Fechner and Dr. Mises converged and he produced a number of mystical writings published under his own name. William, though familiar with Fechner's psychological text, *Elemente der Psychophysik* (1860), was—as Marshall illustrates—dismissive of Fechner and his theories during the years that he was writing the *Principles of Psychology*. 'You know I always thought his psycho-

³⁴⁸ Hinton ends this story with the dissolution of the Unlearner into boundless space as well: 'Behind the visions of my unfinished, ended life, I see the figure of the Unlearner, not standing as he did that day upon the sands, but receding, becoming larger, more and more remote, till he is like that space which lies beyond aught we can ever think of' (p. 177). Elihu Vedder's surreal painting, *Memory* (1870), comes to mind here. For a relevant discussion of this painting and dissolution with reference to consciousness and temporality, see K. Flint, 'Painting Memory' in *Textual Practice* 17.3 (2003): 527-542, especially 537-539.

³⁴⁹ M. E. Marshall, 'William James, Gustav Fechner, and the Question of Dogs and Cats in the Library', in *Journal of the History of the Behavioral Sciences* 10.3 (July 1974): 304-312, 304.

³⁵⁰ Nietzsche attended the University of Leipzig from 1864 to 1869, where Fechner was employed as a professor of physics somewhat intermittently, due to an eye injury sustained during his experiments in optics. However, Fechner was an active member of the intellectual community in Leipzig, and it is probable that Nietzsche encountered him, or at least his ideas, during his studies there.

physic as moonshiny as any of his other writings' William wrote to G. Stanley Hall in 1880.³⁵¹ It was not until the last decade of the nineteenth century, which R. B. Perry describes as 'James's period of reform and evangelism', that William begins to read and appreciate Fechner for his philosophical and mystical ideas, as expressed through his highly figurative language (II, p. 208).

It is Fechner's sea-metaphor that especially seems to have gained William's later appreciation. This metaphor first appears in the second volume of Fechner's *Elemente der Psychophysik*, which has never been translated into English. William quotes from Fechner at length in his 1897 lecture on human immortality, offering his own translation of the relevant passages. In the passage that William quotes, Fechner describes his theory of the threshold of consciousness by using the image of a wave. William refers to this image variously as the 'wave scheme' and the 'mother-sea' of consciousness.³⁵² Fechner offers a diagram of a sinusoidal waveform criss-crossing over a horizontal line, explaining:

'So far now as we symbolize any system of psycho-physical activity, to which a generally unified or principal consciousness corresponds, by the image of a total wave rising with its crest above a certain "threshold," we have a means of schematizing in a single diagram the physical solidarity of all these psycho-physical systems throughout Nature, together with their psycho-physical discontinuity. [...] In each wave the part that rises above the threshold is an integrated thing, and is connected with a single consciousness. Whatever lies below the threshold, being unconscious, separates the conscious crests, although it is still the means of physical connection'.³⁵³

In Fechner's metaphor, when transferred to waves on the sea, the crest of each wave represents an individual human consciousness that is connected, below the surface, to all

³⁵¹ R. B. Perry, I, p. 19. Marshall also quotes this letter, 304.

³⁵² See W. James, 'Human Immortality', pp. 1117, note 6, and 1118.

³⁵³ G. T. Fechner, *Elemente der Psychophysik*, Vol. II, Chapter XLV, pp. 526-547, translated and abridged by W. James in 'Human Immortality', pp. 1113-1117, p. 1116, note 6. Marshall notes that this is 'the very passage from the *Psychophysics* to which [William] had rather scathingly referred in the *Principles* apropos of Fechner's defence of mind-stuff' (307). It is not my intention here to offer a point-by-point examination of the contradictions between William's overall approach to psychology and Fechner's; however, a lucid discussion of these differences can be found in Marshall.

other waves through the larger body of water from which they are shaped. William's interpretation of Fechner's metaphor is perhaps best given in his own words, which directly succeed his lengthy quotation of Fechner:

One sees how easily on Fechner's wave-scheme a world-soul may be expressed. All psycho-physical activity being continuous 'below the threshold,' the consciousness might also become continuous if the threshold sank low enough to uncover all the waves. The threshold throughout nature in general is, however, very high, so the consciousness that gets over it is of the discontinuous form. (p. 1117)

William uses Fechner's metaphor to explain the 'transmission theory' of mind-brain relations, which argues that rather than creating consciousness on site, the brain acts as a 'receiver' for consciousness, which is transmitted from a source outside of the human body. Lowering the threshold of waking consciousness allows the individual consciousness to perceive its own continuity with the 'world-soul' or a unified source of consciousness from which other human brains also channel their individualised consciousnesses: the shared foundation of each individual wave is allowed to surface. The transmission theory also has the advantage of offering an explanation for human experiences that fall outside the ken of the 'production theory'—which states that the brain produces consciousness—such as intense religious experiences, or the 'supernatural' experiences explored by psychical researchers: 'we need only suppose the continuity of our consciousness with a mother-sea, to allow for exceptional waves occasionally pouring over the dam', William argues (pp. 1118-1119).

While Nietzsche uses the metaphor of the sea perhaps most superficially of the three writers, for Hinton and William this metaphor plays a key role in expressing their

sense that there is something 'out there' beyond apparent reality.³⁵⁴ William constructs his own metaphor—which anticipates Henry James's 'house of fiction'—to explicate the transmission theory, asking his audience to imagine that 'our brains are colored lenses in the wall of nature, admitting light from the super-solar source, but at the same time tingeing and restricting it' (p. 1112). The brain works then as a framing device, a lens that both focuses and distorts nature. The word 'nature' here can be used interchangeably with 'higher reality', the 'mother-sea' of consciousness or Hinton's fourth dimension.

During the vision of recurrence, after he has drowned in the sea, Hinton's narrator experiences an uncanny vision of 'Nature' stripped bare. In this vision—and it is unclear whether this is a mystical experience from the narrator's actual history, or a 'new' event that is interjected into the recurrence scenes—the narrator finds himself walking near Central Park in Manhattan, 'while in my ears floats the music I have just heard, changing itself into scenes and the rapid passing of figures' (p. 161). The narrator is transported to 'the spacious courts of heaven', where St Paul and St Simeon Stylites sit in judgement (p.

³⁵⁴ There can be little doubt that Hinton had Fechner's metaphor in mind when he wrote 'An Unfinished Communication'. As I have noted, the fact that Mary Boole Hinton was inspired to write a poem based on Fechner's *Zend-Avesta* suggests strongly that Hinton was aware of Fechner and his work. Also, Hinton's *Unlearner* employs a similar sea-metaphor: "Look at the sea", he tells the narrator, "from here we can see a multitude of small waves; if we were on a high eminence we should see the larger ocean billows on whose surface merely these small disturbances are. From a still greater height we should see the great wave of the tide, whose great sweep might mean life or death to a swimmer, buffeting the little waves. Is it not the greater tides that you should strive to learn, forgetting the momentary disturbances? [...] There is a certain heedlessness and recklessness which defeats its own end, a desire of grasping the all which lays hold on nothing. [...] What you have been is the food on which your soul lives. Think how closely connected memory and self-consciousness are; snap the last chord of recollection and you would lose the sense of personal identity" (SR 9, p. 119). This passage, which foreshadows the narrator's death by drowning, also appears to draw directly from Fechner's metaphor, which William translates: "We may represent such a long period as that of the slowly fluctuating condition of our general wakefulness and the general direction of our attention as a wave that slowly changes the place of its summit. If we call this the *under-wave*, then the movements of shorter period, on which the more special conscious states depend, can be symbolized by wavelets superposed upon the under-wave, and we can call these *over-waves*. They will cause all sorts of modifications of the under-wave's surface, and the total wave will be the resultant of both sets of waves. [...] In each wave the part that rises above the threshold is an integrated thing, and is connected with a single consciousness" (p. 1116, note 6, original emphasis).

161). A figure approaches the two saints; 'she is covered all over and hides her face. She bears a bundle in her arms' (p. 162). Inside the bundle that she empties before St Paul:

There was nothing and yet everything—everything that men have seen of colour in the sunset or in the deep sky. There was the grace of the dappled limbs of the fawn, the lines of strength of the tiger, the wonderful green of the forests, the all-burying forests in their wonderful mazes, the delicate blue of the distance, the depths of the ocean, the semblance and likeness of everything that has been on earth. There, without the substance and body of them, there were the grace and beauty of human countenances, the bloom on the cheeks, the vermeil lips, the glance of loving, passionate, ardent, alluring eyes, and the quiet, long, still gaze of dark eyes. There was the glamour and grace and beauty of all that man has ever loved to gaze upon—the tendril-crowned boy Bacchus, in his radiant appeal to the eye, was there, though he was not. There were the flash of white limbs through translucent water, the raised arms of Venus, her head waving like a flower between them. All was there; not the substance of things, but the show of them—all colour all sights; and the wonderful-voiced woman spoke. Her speaking was like a song, like all the music that ever sounded, like all the sounds that ever were, so rich and full and deep it was—calming, soothing, passion-arousing, awakening, mocking, loving, enticing—the cadence of wind-swept forests, the laughing of a girl all were in it as she said, 'All these are not mine, and I have taken them, all the sounds of my voice, and these I have brought here. Henceforth I will be mute and without all these. Oh, judge me.' (p. 163).

This woman, who is described in the language of high Romanticism, is the personification of Nature, or the force that had 'bedecked herself' as Nature. She describes herself as simply the one whom "at creation [was] to keep the busy atoms dancing, to turn and twist them on their moving course" (p. 164). However, over the course of time, she claims, she has taken on the names and inventions of humanity, designating herself, in language, as "Nature and beautiful and wonderful" (p. 164). These words and concepts have nothing to do with her, the woman states, and she wishes to "henceforth [...] be mute and without all these" (p. 164). In the narrator's vision, Nature's naked return to earth marks the dawning of a new era for humanity: 'In all the visible world, in all the joys and beauties of the earth, she began to be herself. [...] No longer in all his joys did man perpetually grasp his own imaginations and beyond them—emptiness; no longer did he chase the mask of

pleasure for its own sake' (p. 165). The figure personified as 'Nature' is actually the force of motion that supports life and creativity in the universe, and here again we observe the difference between forgetting and unlearning, as Deleuze notes that 'there is a vast difference between destroying in order to conserve and perpetuate the established order of representations, models, and copies, and destroying the models and copies in order to institute the chaos which creates' ('The Simulacrum', p. 266).

However, this deconstruction of 'Romantic' word-masks immediately precedes the narrator's other, damning indictment of 'Victorian' values, in which he learns to embrace his 'intimate self'. The desire for transcendence of the human, to see Nature stripped bare, to—using William's language—get at the pure perceptual sensation beneath conceptual thinking, is thus tempered by the following vision of the baser 'Pan creature' whose function is to disguise reality, and the narrator's acceptance of this side of himself. These revelations are made possible by the narrator's higher vision at the end of the story, his immersion in the 'mother-sea' of consciousness. It is interesting that, having achieved this 'four-dimensional' sense of vision, Hinton returns his narrator to a 'three-dimensional' existence. Considering that Hinton devoted his career to making the fourth dimension accessible to his readers, why does he have his narrator step back from this 'higher vision'? His experience of recurrence, the recovery of the past through his realisation of his capacity to reconfigure it, leads, as Rampley notes in the case of *Zarathustra*, to *amor fati*. 'An Unfinished Communication' is the story of the narrator learning to love his fate through a balancing act similar to Nietzsche's dialectic of suprahistorical and unhistorical viewpoints. Hinton's narrator interrupts his rhapsodical description of his experiences of recurrence with the following observation: 'But I long to pass from this wide

consciousness; for, while I have it, I am not in the work of altering my life. To do that I must give up this wide view, and, plunging in it part by part, let all else of my life save the present seem like mere memory or expectation' (p. 175). For Hinton, this 'wide consciousness', like Nietzsche's suprahistorical sensibility, is not conducive to action. The possibility for active engagement with the present, and thus life, involves a descent into the unhistorical, something that can only be experienced 'part by part'. Just as Zarathustra must experience a 'down-going', Hinton's narrator must return to a consciousness that is bounded by the horizon of the three-dimensional perception of space, with a separate, extensionless time. Like a Jamesian centre of consciousness, Hinton's narrator senses

the will that acts along the whole line, the will whose body is the whole life—that I catch, fragmentarily present here and there in my life—that will, shown, not in great things, but in minute, almost invisible changes, that will is what I prize and treasure, for it is the means whereby my life alters, the means by which it is what it has become. (pp. 174-175)

It is through careful and subtle attention that one is able to 'guess the unseen from the seen', a sort of will-to-create that Hinton's narrator finds through his 'untimely' contact with the Unlearner, who is 'like that space which lies beyond aught we can ever think of' (p. 177). Thus, for both Nietzsche and Hinton, these visions of recurrence function as useful thought-experiments, fictions that allow the individual to develop a sense of subjectivity and agency within the incomprehensibly endless relations of the greater narrative of temporality.³⁵⁵ William also saw this necessity, as evinced by his theory of the 'will to believe' as a challenge to determinism. William's 'will to believe' implies the construction of a 'useful fiction'. Thus, as we have seen with Jamesian centres of consciousness, there is a common impulse that is perhaps most aptly described as a will to

³⁵⁵ Similarly, Henry James notes in his preface to *Roderick Hudson* that 'really, universally, relations stop nowhere, and the exquisite problem of the artist is eternally but to draw, by a geometry of his own, the circle within which they shall happily appear to do so' (*AN*, p. 5, original emphasis).

authorship. By becoming a creator of fictions, one mimics the actions of a higher being, whether that being is represented as the author, God, the superhuman or four-dimensional.

In drawing on William's use of the Fechner sea-metaphor to examine Hinton's 'An Unfinished Communication', I have avoided addressing explicitly William's relationship to Hinton. While it is impossible to determine the extent—if any—that Hinton's ideas influenced William, from examining the archival evidence of their relationship alongside the writings of the two men, it is possible to identify a shift in Hinton's thinking that places it more in line with William's ideas, suggesting that William may have influenced Hinton's hyperspace philosophy. For the remainder of this section, I will examine the similarities between their ideas, arguing that the two men approached near a convergence of thinking about the 'many and the one', which changed again with William's reading of Henri Bergson in the twentieth century.

Hinton and William James

The relationship between Charles Howard Hinton and William James has never been fully explored. There is little remaining evidence of their correspondence: only eleven letters from Hinton to William appear to be extant, and no letters from William to Hinton are catalogued anywhere. William referred to Hinton by name in print only once.³⁵⁶ There is also little remaining documented biographical information for Hinton in general. In the following pages I will compile this information, along with published, textual evidence from Hinton and William, in order to assess their relationship. It is

³⁵⁶ See 'The Will to Believe', as I have quoted earlier in this section. William also mentions Hinton, in passing, to F. C. S. Schiller in a letter dated 2 September 1904. The reference is, however, of superficial interest: 'P. S. In a letter from C. H. Hinton yesterday, he says: "The academic mind secretes thought and contempt together, in about equal proportions." Good!' (R. B. Perry, II, p. 505). Schiller received his BA from Balliol College at Oxford in 1886, where Hinton was also a student. Hinton graduated in 1876, but returned to Oxford later for his MA, finishing shortly before his move to Japan, in 1886 (Ballard, pp. 16 and 42). Thus, it is possible that they may have known each other, and as I have noted above, there are obvious parallels between Schiller's *Riddles of the Sphinx* and Hinton's hyperspace philosophy.

important to include this descriptive, biographical information because much of it is previously unexamined, and thus it is necessary to establish the context of my subsequent discussion of their ideas.

The extant letters from Hinton to William date from 1892 until the former's death in 1907. It seems likely that they met or corresponded at some time before the first letter, and it is certain that William was familiar with Hinton's writing by the end of the 1880s. We can also find clues as to the nature of their relationship, by examining the letters from Hinton to William. Obviously, this was not a close friendship, either emotionally or intellectually; however, there is evidence that William felt kindly toward Hinton. In a letter dated 26 April 1895, Hinton asked William for a letter of support for his application to a lecturing post at Dickinson College in Pennsylvania. The tone of this letter is formal, and it is uncertain how William responded as there is no record of his reply, nor is there evidence of Hinton ever actually working at Dickinson College. However, in the next letter in the collection, dated 19 October 1895, Hinton writes: 'I have left your last letter of suggestion unanswered for so long because the offering on my part to give such a course of lectures as you suggest would be an act of presumption' (p. 1). The lectures to which Hinton refers here are the Lowell Lectures at Harvard, and as the letter implies, William appears to have encouraged Hinton to secure them.³⁵⁷ That Hinton and William also met in person at least twice is also documented in the letters. On 30 October 1895, Hinton playfully writes that 'seeing you pleasant as it was awoke a great many unprofitable

³⁵⁷ In this same letter, he asks William to 'suggest this subject to Mr Lowell', referring to what he would have liked to lecture upon: "The axioms of geometry what they are and their significance in an epistemological point of view" (p. 1). In another letter, from 30 October 1896, he refers to them again, saying 'the Lowell Lectures would have been just the thing for me' (p. 2). Hinton's refusal to apply for the Lowell Lectures, even though it was apparently an opportunity he desired, is puzzling. In the 1896 letter he claims that he had had neither the time nor the money to make an application. Ballard speculates that there may have been other factors at work, as well, such as 'a fear of subjecting his system to top-flight criticism' and concern about having his past exposed (pp. 57-60). I agree with Ballard here.

thoughts. It was so strange that a professional being should have any interest in what I do' (p. 1). Again, nearly a year later Hinton remarks, in reference to William's wife, 'I had a very delightful evening at your house when I was in Boston. I saw the luminary whose beams you reflect so splendidly to the world' (10 July 1897, p. 11). William apparently loaned, or gave, Hinton money as well. In a letter dated 12 August 1898, Hinton tells him:

I find that I can just about make both ends meet here. But we have had a bad spell of typhoid with two of the boys & a good deal of other sickness. Happily all are well now. But I want to try to get something to do this summer. If you hear of anything you'll let me know. Under the circumstances you see for the present your loan must remain a gift. (p. 3)

Finally, in the letter from Mary Boole Hinton to William, shortly after Hinton's death, she thanks him for his support, writing that 'your letter is one I deeply appreciate,—as also the way in which you *stood by him* while he lived'.³⁵⁸

In intellectual matters, the letters from Hinton to William also reveal a few clues to the tenor of their relationship. Hinton labours his conception of the fourth dimension in most of his letters to William; however, he occasionally goes on other interesting tangents. In one letter he—in an amused and sceptical tone—relates the story of how one of his friends, a Mr White, was hypnotised by an acquaintance who had taken too seriously a story that Hinton had written for an unnamed society at Princeton. Hinton had suggested, in a story that sounds similar to 'An Unfinished Communication', that

just as in the body are the records of all the past physical planes through which the organism has gone in its development so in the consciousness are traces of all the past conscious life which lies back in a line from that consciousness. And by right suggestion it could be recalled. This of course was pure assumption—a postulate of a microphone of consciousness reaching back to the ur consciousness. But the man took it seriously and set to work to take [Mr White] back to the geologic antecedents of his conscious being, or to the primordial cell.

Well you might expect they didn't get him back beyond his babyhood. (19 Oct. 1895, p. 4)

³⁵⁸ This letter from M. B. Hinton is included in the same collection at Houghton Library, Harvard University. 2 December 1907, p. 1, original emphasis.

However, they did, Hinton writes, 'regress' the man to his childhood, where he was unable to speak until they told him that 'he was a child in everything except faculty of speech. That he could speak & describe but was a child in everything else' (p. 5). Hinton relays a few of the reported memories of the man, and then asks William: 'Now do you think there is anything to be got as to the first impressions of childhood in this manner? Would this give a true means of observing a child's mind or would it merely be Mr White's present ideas of what a child could think & feel?' (p. 5). Here the relationships between the consciousness and the subconscious, and between representations of 'reality' and 'reality' itself arise, subjects to which both William and Hinton devoted much of their adult lives.

They also read and discussed each other's work. Hinton notes reading William's collection, *The Will to Believe and Other Essays*, writing 'I found [...] your book so full of éspirit so fascinating I've brought it to the seaside to read and hasten to send my acknowledgments' (10 July 1897, p. 1).³⁵⁹ Hinton apparently asked William's opinions on work in progress: in another letter he thanks him 'for your criticism. I must embody the thing in a longer story with a plot and other motives' (12 Aug. 1898, p. 1). The fact that this letter was found in William's copy of Hinton's book, *The Fourth Dimension* (1904) is also curious, suggesting that William may have referred back to the topic previously under discussion upon reading Hinton's later published work.³⁶⁰ There is a copy of Hinton's 1906 pamphlet, 'A Language of Space' within the collection of documents pertaining to

³⁵⁹ Hinton does not refer to this text by name anywhere in the letter; however, I feel safe in assuming that it is *WB*. Firstly, the timing is appropriate. Hinton also mentions issues within the letter that correspond to the actual text of *WB*, the most explicit of which is Hinton's reference to 'the Brockton murder'. 'I'm sorry for the effect that Brockton murder had on you [...]' Hinton writes (p. 8). In an essay in the *WB* collection, William refers to this same crime: 'Hardly anyone can remain entirely optimistic after reading the confession of the murder at Brockton the other day [...]'. W. James, 'The Dilemma of Determinism', in *William James, Writings 1878-1899*, pp. 566-594, p. 577.

³⁶⁰ In the top margin of the first page of this letter is pencilled: 'Formerly laid in in [sic] James's copy of Hinton's *The Fourth Dimension*'.

Hinton in the William James papers at Harvard, and the copy of *Stella and A Unfinished Communication: Studies of the Unseen* at the Harvard University Library previously belonged to William as well.

The earliest documented evidence of Hinton's relationship with William is a letter from 1892, written shortly after Hinton first arrived in the United States. Although the tone of this letter is more formal than that of Hinton's later correspondence with William, this is not a letter of introduction. Hinton refers to 'Japanese prints' he has sent William earlier, and he writes of his theory of the fourth dimension in a manner that implies that they have previously discussed the matter. He writes:

As soon as I landed in America or very soon after I heard that you had gone abroad. I was very sorry as I had looked forward to having a talk with you. The whole 4 di. theory has turned right round in my mind. For the geometry of the thing it is right to imagine ourselves indefinitely flat in the 4th dimension. But that there are in nature no two dimensional beings shows that [,] there being assumed higher space [,] we must be higher space beings in a higher space world in contact with higher space existences. Now that means that our limitation must be one of consciousness. (5 Oct. 1892, p. 1)

The key phrase here is 'there being *assumed* higher space'. While in the first series of *Scientific Romances*, completed in 1886, Hinton was often clear about the hypothetical nature of the concept of the fourth dimension, as his career progressed, he became increasingly adamant about the actual existence of a fourth dimension of space. The material reality of the fourth dimension is also an issue upon which William and Hinton differed. There is no documented evidence that William ever supported or believed in the fourth dimension of space; however, he addressed the idea in his philosophy lectures at Harvard. In a letter to Carl Stumpf, dated 26 November 1882, William writes: 'I read your *Aus der vierten Dimension* with lively interest and admiration. Where did it appear? I should like the reference for the use of my students. I make a couple of them work up that

subject in an essay every year'.³⁶¹ Shamoon Zamir gives further, more explicit, evidence that William was familiar with Hinton's hyperspace philosophy before 1892. In his study of W. E. B. Du Bois, Zamir discusses the remaining fragments of a story Du Bois wrote as a student at Harvard, titled 'A Vacation Unique', where he uses hyperspace philosophy to discuss race relations in America. Zamir writes that 'the phrase "Fourth Dimension" which recurs in "A Vacation Unique," is a direct reference to C. H. Hinton's "What Is the Fourth Dimension?" (1884), the first of Hinton's *Scientific Romances* and a text that, according to Du Bois's notebook, James referred to and adapted in his lectures on ethics'.³⁶² Zamir offers further analysis of Du Bois's class notes, writing:

James picked up the relativist and ethical implications of Hinton's argument, suggesting that 'we live in a 4th moral dimension separating us from animals' (P4). This fourth moral dimension is the realm in which the will to believe negotiates its defence of a conditional, 'common sense' God against the 'absolute' God of 'speculative' theories such as Martineau's (P4).³⁶³

Apparently, William used the dimensional analogy to discuss human morality and ethics. While William seems to have found Hinton's conception of the fourth dimension a useful hypothesis, nowhere in his published writings does he appear to ever take it seriously as a material 'reality', as Hinton did. Although William's letters to Hinton are not available, it

³⁶¹ Quoted in R. B. Perry, II, p. 61. The translation for this essay title is 'From the Fourth Dimension'.

³⁶² S. Zamir, *Dark Voices: W. E. B. Du Bois and American Thought, 1888-1903* (Chicago and London: University of Chicago Press, 1995), pp. 49-50. As I have noted earlier, Hinton's first romance actually appeared first in 1880 as an essay in *Dublin University Magazine*. The notebook to which Zamir refers contains Du Bois's lecture notes from his 'Philosophy 4' course, which he took under William in 1889. In light of these two sources, it seems likely that William and Hinton had briefly met or corresponded earlier than the letter of 1892. In the 1892 letter, however, Hinton addresses William as 'Mr. James', as opposed to the more familiar 'My dear James' of later correspondence. I would suggest, therefore, that an earlier, brief exchange occurred between William and Hinton, likely relating to Hinton's text and William's incorporation of it into his philosophy lectures. Ballard speculates that Hinton and William may have met through Shadworth Hodgson, when William was traveling in Europe during 1882 and 1883 (p. 49). William and Hodgson corresponded frequently, and he did meet with Hodgson during this trip. Hodgson had been a member of the Metaphysical Society, and a friend of James Hinton; he wrote the preface for the *Chapters on the Art of Thinking* (1876), edited by Charles Howard Hinton.

³⁶³ Zamir, p. 50. I leave Zamir's citation, '(P4)' within this excerpt to emphasise that the quotations contained therein come from Du Bois's 'Philosophy 4' course notebook—and therefore presumably, William—rather than Hinton's text.

is apparent this difference of opinion was a topic of discussion between them. Near the end of his life, Hinton wrote to William:

As a minor art I have practiced what I call 'investigatory fiction' and lately I have made a discovery of method which makes a whole lot of uncompleted attempts possible to be completed. I send you the theory. I don't know if you can lend your mind to the spatial considerations involved. It is so strange the only thing I know of that I can call thinking is space thinking and its [sic] the only way of thinking you refuse.³⁶⁴

Here Hinton observes what appears to be a fundamental difference between his and William's thinking; however, in the following pages I will explore not only the differences between the writings of these two men, but also where they overlap, appearing at times to address and respond to each other.

An examination of the correspondences between the writings of Hinton and William might begin—as one would expect—with a look at their writings on space-relations. However, William found this subject a tedious one, writing to G. Stanley Hall in 1879 that 'I am composing a chapter on space for my psychology and find I have to re-read about all I ever read on that driest of subjects, which seems an awful waste of precious time' (R. B. Perry, I, p. 16). Nearly a decade later, William was still struggling with his thoughts on space, writing to Carl Stumpf that 'space is really a direfully difficult subject! The third dimension bothers me very much still' (p. 70). At issue here are conflicting psychological theories concerning depth perception, between Associationist and Sensationalist psychologies. In an 1879 essay, 'The Spatial Quale', William takes to task the Associationist argument, which denies that the three-dimensional perception of space is in fact based on unmediated sensation (p. 83). James sided with the

³⁶⁴ 1907a, p. 2. I quote here from an undated letter fragment. Hinton probably never sent William the particular theory to which he refers; this fragment, along with another, mostly repetitive fragment, was included with the letter to William from Mary Boole Hinton on 2 December 1907, after Hinton's death. This fragment is listed as the first of two undated letters, ca 1907. I will refer to these as 1907a and 1907b.

Sensationalists, developing what R. B. Perry describes as ‘the doctrine of nativism’ (p. 81). ‘The most important application of the doctrine of nativism’, Perry writes, ‘was to the perception of space, James taking the view that all three dimensions of space are directly sensed, and not constructed or inferred’ (p. 81). William reached this position before he published his two-volume textbook, *Principles of Psychology* (1890). In the *Principles*, William challenges the ‘Platonizing school in psychology’, which, he claims, argues that ‘position, for example can never be sensation, for it has nothing intrinsic about it [...]’ (II, p. 149). Rather, William argues:

Rightness and leftness, upness and downness, are again pure sensations differing specifically from each other, and generically from everything else. Like all sensations, they can only be indicated, not described. If we take a cube and label one side top, another bottom, a third front, and a fourth back, there remains no form of words by which we can describe to another person which of the remaining sides is right and which is left. We can only point and say here is right and there is left, just as we should say this is red and that blue. [...] Thus it appears indubitable that all space-relations except those of magnitude are nothing more or less than pure sensational objects. (II, pp. 150-151, original emphasis)

William agrees with Kant here, that humans immediately intuit space and space-relations, but he writes in a footnote that Kant ‘is wrong, however, in invoking relation to extrinsic total space as essential to the existence of these contrasts in figures. Relation to our own body is enough’ (p. 151). It appears that William therefore would have disagreed with Hinton’s attempts to ‘cast out the self’ in the sense of intuiting the ‘absolute relations’ of space without reference to the three-dimensional, human body. However, both Hinton and William work from the same premise here, that space relations are sensations intuited by the human body, and are nearly inexplicable outside of this reference point. In ‘Casting out the Self’, Hinton writes:

If we suppose that we are putting up the cubes in one room while another person is putting up cubes in an adjoining room; if we can tell him what we are doing, using the words right and left, he will be

able to put a block exactly like ours. But if we do not allow ourselves to use the words right and left, but speak to the other person as if he were simply an intelligence without having the same kind of bodily organization as ourselves, we should find that, supposing he could put up the block of cubes, it would be a mere matter of chance whether he had put up the block as we had put it, or whether he had put it up in an [mirror] image way. (SR 5, p. 220)

Like William, Hinton takes a Sensationalist approach to space. This approach is complicated by Hinton's increasing belief in the 'reality' of the fourth dimension, and that humans were themselves four-dimensional beings.

At the point of publication of 'Casting out the Self', in 1886, Hinton was still tentative about the probability that human beings were four-dimensional beings themselves: 'Now, *if* there are beings who live in a four-dimensional world, they must feel as habituated to it as we do to ours' (SR 5, p. 224, emphasis added). Although Hinton hypothesises that human consciousness could be four-dimensional as early as his first romance, here he steps back, offering the suggestion that four-dimensional beings might exist, but clearly differentiating them from humans. Hinton speculates that the consciousnesses of these beings are so much more developed than human consciousnesses, that a human adult—with great effort—may only be able to understand the thought-processes of a four-dimensional child. The three-dimensional body of the human is something to be overcome here; hence the need to 'cast out' the three-dimensional bodily self in order to be able to think in four dimensions. In fact, Hinton concludes in 'Casting out the Self' that the three descriptive expressions, "Casting out the self"—"Seeing as a higher child"—and thirdly, "Acquiring an intuitive knowledge of four-dimensional space" are almost identical in meaning (p. 227). It is not until his later publication, *A New Era of Thought* (1888), that Hinton begins to argue consistently in favour of the material existence of the fourth dimension of space, and for human four-

dimensionality, and it was only after ‘the whole 4 di. Theory [...] turned right round’ in Hinton’s mind that he would approach the task of getting ‘sensations of the higher’ space through the experience of duration. By believing that the human is actually a four-dimensional being, Hinton’s drive to ‘cast out the self’ is not about “‘the putting off of one’s self’”, but rather, as George Dane’s companion tells him in the Place, “‘if one has a self worth sixpence—of getting it back’” (p. 581).

Judging from William’s relative lack of interest in space-relations, and the Du Bois evidence that William incorporated Hinton’s first romance into his philosophy lectures on ethics, it seems more appropriate to explore William’s interest in Hinton’s hyperspace philosophy for its philosophical and ethical implications, rather than its value for science or psychology. Indeed, James does not mention the fourth dimension anywhere in his chapter on ‘The Perception of Space’ in the *Principles*. It is possible that he may have been originally drawn to Hinton’s work during his period of struggle with space perception, only to decide that Hinton’s ideas function better as thought-experiments than as science. This conclusion is supported by the fact that when the fourth dimension does make an appearance in the *Principles*, it is in a discussion of free will and determinism in the chapter ‘Will’. After stating his belief ‘that the question of free-will is insoluble on strictly psychologic grounds’, William concludes that, on a personal level, each must settle this question in some manner: ‘taking the risk of error on our head, we must project upon one of the alternative views the attribute of reality for us; we must so fill our mind with the idea of it that it becomes our settled creed’ (II, pp. 572-573). William notes that, personally, he has settled in favour of freedom, but that ‘since the grounds of his opinion are ethical rather than psychological, he prefers to exclude them from the present book’ (p.

573). William directs his reader here to the ethical considerations of free will in his essay, 'The Dilemma of Determinism'. However, William continues, it is worth making a few comments upon 'the logic of the question' within the *Principles* (p. 573). William outlines what he calls the '*fatalistic argument* for determinism', calling it 'radically vicious' (574, original emphasis). To the believer in this argument, William writes, "all is fate [...]. It is hopeless to resist the drift, vain to look for any new force coming in; and less, perhaps, than anywhere else under the sun is there anything really mine in the decisions which I make" (p. 574). However, this is not truly an argument in favour of determinism, William observes, because

there runs throughout it the sense of a force which might make things otherwise from one moment to another, if it were only strong enough to breast the tide. A person who feels the *impotence* of free effort in this way has the acutest notion of what is meant by it, and of its possible independent power.

How else could he be so conscious of its absence and of that of its effects? (p. 574, original emphasis)

The sense of something missing or lost is inconceivable to the true determinist, William argues; one has to be aware of the possibility of free will in order to miss its presence. It is 'not the *impotence* but the *unthinkability* of free-will' that determinism affirms (p. 574, original emphasis). There is a neat logic to William's argument here: one hears echoes of Whewill's declaration that mathematics is a science of 'necessary truth'. By conceiving of the possibility of free will, fatalism undermines determinism: 'it strongly imagines the *very possibility* which determinism denies (p. 574, original emphasis).

What is interesting in William's discussion of determinism and fatalism is his description of the space from which the 'useful fiction' of free will might originate as a kind of fourth dimension. Determinism, William writes,

admits something phenomenal *called* free effort, which *seems* to breast the tide, but it claims this as a *portion of the tide*. The variations of the effort cannot be independent, it says; they cannot originate *ex nihilo*, or come from a fourth dimension; they are mathematically fixed functions of the ideas

themselves, which are the tide. Fatalism, which conceives of effort clearly enough as an independent variable that *might* come from a fourth dimension, if it *would* come but that it *does not* come, is a very dubious ally for determinism. (p. 574, original emphasis)

The fourth dimension here serves a practical purpose; it assists in fulfilling a deep personal need to believe in free will. As has been well-documented by his biographers and critics, a crucial turning-point in William's own life occurred when he began to believe in the plausibility of free will. After a long period of battling depression and suicidal thoughts—what he would later describe as suffering as a 'sick soul'³⁶⁵—in the spring of 1870, he wrote his famous diary entry:

'I think that yesterday was a crisis in my life. I finished the first part of Renouvier's second "Essais" and see no reason why his definition of Free Will—"the sustaining of a thought *because I choose to* when I might have other thoughts"—need be the definition of an illusion. At any rate, I will assume for the present—until next year—that it is no illusion. My first act of free will shall be to believe in free will. [...] After the first of January, my callow skin being somewhat fledged, I may perhaps return to metaphysical study and skepticism without danger to my powers of action. For the present [...] I will go a step further with my will, not only act with it, but believe as well; believe in my individual reality and creative power'.³⁶⁶

William's acceptance of free will is hypothetical here; it is a 'useful fiction' that allows him to develop a sense of self. By simply conceiving of free will, William creates the possibility for its existence, and by acting as if free will exists, he confirms its existence. Also, by creating the useful fiction of the free will, William becomes an author/creator in his own right. It is likely that Hinton's belief in the fourth dimension developed out of a similar crisis as I have previously noted.³⁶⁷ Significantly, William's only explicit mention

³⁶⁵I refer to William's discussion of his own depression, under the guise of a 'French correspondent' in 'The Sick Soul', in *The Varieties of Religious Experience: A Study in Human Nature* (New York and London: Collier Macmillan, 1961), pp. 114-142, specifically pp. 138-139.

³⁶⁶ Quoted in Matthiessen, *The James Family*, p. 342, original emphasis.

³⁶⁷ There is further evidence of this crisis in *NET*, where, describing how he came to the study of 'Higher Space' Hinton writes, "I found myself in respect to knowledge like a man who is in the midst of plenty and yet who cannot find anything to eat", continuing that 'in this perplexity I was reduced to the last condition of despair'. See pp. 8 and 12.

of Hinton in print is in his 1896 lecture, 'The Will to Believe', from which I have quoted above.

The 'stream of consciousness' and the fourth dimension

Aside from what might be a superficial interest in Hinton's hyperspace philosophy as a useful fiction, there are deeper correspondences between the idea that 'relations end nowhere', as particularly expressed in Hinton's idea of the 'fugitive nows' and William's 'stream of consciousness'. According to William, in human consciousness there exists 'a community of self' that 'the time-gap cannot break in twain, and is why a present thought, though not ignorant of the time-gap, can still regard itself as continuous with certain chosen portions of the past' (*PP*, I, p. 239). While at times the shock of the introduction of a new object or a trauma to the consciousness may result in a sense of confusion that appears to be a break in consciousness, William argues

that very confusion is a mental state [...]. The transition between the thought of one object and the thought of another is no more a break in the *thought* than a joint in a bamboo is a break in the wood. It is a part of the *consciousness* as much as the joint is a part of the *bamboo*. (p. 240, original emphasis)

Awareness of a break in consciousness is still a form of consciousness, William argues, arriving at a similar conclusion regarding space relations in 'The Perception of Space' chapter of *Principles*. Referring the reader back to this chapter on space in 1907, William remarks that 'I well remember the sudden relief it gave me to perceive one day that *space*-relations at any rate were homogenous with the terms between which they mediated. The terms were spaces, and the relations were other intervening spaces' (*MT*, p. 79, original emphasis). Like space, human consciousness is only broken into discrete units by conceptual thinking, concretised through language:

Consciousness, then, does not appear to itself chopped up in bits. Such words as 'chain' or 'train' do not describe it fitly as it presents itself in the first instance. It is nothing jointed; it flows. The images of the 'river' or the 'stream' are the metaphors by which it is most naturally described. In talking of it hereafter, let us call it the stream of thought, of consciousness, or of subjective life. (*PP*, I, p. 239)

It is partially 'the habit of language' that has led to a misunderstanding of the 'structure' of consciousness. Consciousness, in William's argument, is in fact structureless in any traditional sense. Transitions between 'states' of consciousness are states of consciousness in themselves.

Both Sensationalists and 'Intellectualists'—proponents of subjective and objective approaches to studying consciousness, respectively—are wrong, in William's argument (p. 245). Relations between different 'states' of consciousness end nowhere, 'and no existing language is capable of doing justice to all their shades' (p. 245). Language fixes consciousness into ideas; it shapes what the senses receive as percepts, and turns them into concepts. It is these relations between states of consciousness that conceptual thinking overlooks, William argues, continuing that 'we ought to say a feeling of *and*, a feeling of *if*, a feeling of *but*, and a feeling of *by*' (p. 245, original emphasis). Hinton also wants to understand higher dimensions of space through the examination of space relations, as expressed through the dimensional analogy, and his cube exercises:

To begin it, we take up those details of position and relation which are generally relegated to symbolism or unconscious apprehension, and bring these waste products of thought into the central position of the laboratory of the mind. We turn all our attention on the most simple and obvious details of our every-day experience, and thence we build up a conception of the fundamental facts of position and arrangement in a higher world. (*NET*, p. 97)

It is through exploring these 'waste products of thought'—the unexamined experience of duration, of the oft-disregarded conjunctions that connect the conceptual—that the fourth dimension will be understood because, for Hinton, the fourth dimension functions as a higher organising principle. It is only observable however, like William's stream of

consciousness, within the minute interstices between the objects, concepts and sensations of apparent reality.

While Hinton's hyperspace philosophy was certainly influenced by the Intellectualist, or 'Platonizing' school of thought that William so often criticised throughout his career,³⁶⁸ in Hinton's later writings—especially those composed after he settled in the United States—there is a trend of movement away from the idea of transcending the self in order to access a realm of pure thought, to a paradoxical blend of materialism and transcendentalism. This shift is marked by Hinton's increasing belief that the human self is in fact four-dimensional; thus, the path to the fourth dimension is to be accessed *through* the experiences of the self, rather than through a denial of it. There are intimations of Hinton's strengthening empiricism in his pre-1892 writings: in the last text he wrote before his departure from England, *A New Era of Thought*, he claims that 'there is, it must be confessed, one way in which it may be possible for us to think without thinking of things in space. That way is, not to abandon the use of space-thought, but to pass through it' (pp. 94-95). This conclusion is followed by over one hundred pages of complicated 'practical work', the first extended series of cube exercises in Hinton's *oeuvre*. Here Hinton asks the reader to put to practice his hypothesis that the transcendence of space is to be accomplished through working within it. The ambiguous ending of 'Stella'—the failure of her experiment in self-transcendence through invisibility—is also indicative of this shift. It is in his later writings, however, that

³⁶⁸ Including the 'anti-sensationalism' of T. H. Green, Professor of Moral Philosophy at Balliol, while Hinton was a student. Ballard argues that Green was an important influence on Hinton's thought. See *PU*, pp. 277-279 and Ballard, pp. 15-16. While Green may have been an early influence on Hinton, as I argue here, in his later years, Hinton became more concerned with the role of the senses in perceiving 'higher space'.

Hinton's approach to experiencing and understanding the fourth dimension most resembles William's ambulatory approach to knowledge.

Shortly after his arrival in the United States, in the same 1892 letter where Hinton claims that 'the whole 4 di. theory has turned right round in my mind', he continues on to add: 'Here is the possibility of a different view of permanent things and a moving consciousness. I have developed the idea a little & will send you something about it' (5 Oct. 1892, p. 2). As I have noted, the American setting for 'An Unfinished Communication' suggests that the story was written after Hinton arrived in the United States. This story seems a likely candidate for Hinton's experimentation with the idea of 'permanent things and a moving consciousness'. The suprahistorical, four-dimensional view of time that the narrator experiences at the end of the story is balanced by the narrator's realisation that he must plunge back into the sensational experiences of his life in order to be actively involved in moulding it, because 'it is changing—the whole of it' (p. 174). The 'past' here is visitable; it is superimposed upon the present, and it is through present action that the past is rewritten. William constructs a similar view of temporality in his *Principles*, writing that there 'is a sort of *perspective projection* of past objects upon present consciousness, similar to that of wide landscapes upon a camera screen' (I, p. 630, original emphasis). Thus the past is always contained within the framing device of the present moment of the individual subject; 'please observe, however', William adds, 'that the reproduction of an event' as memory 'is an entirely different psychic fact from its direct perception within the specious present as a thing immediately past' (p. 630). The recollection of the more distant past in the present consciousness is not an exact recurrence of that past state of consciousness, but rather a *new* state of consciousness that revises this

previous state. It is recurrence with alteration, or as William's friend Benjamin Blood writes: "the same returns not, save to bring the different".³⁶⁹ The past here is a palimpsest that is constantly being rewritten within the present moment.

However, the narrator in 'An Unfinished Communication' is given a view of future 'recurrences' of his life as well. It is this experience of 'higher consciousness' that seems to be the life-altering event of the story; it is what allows the narrator to learn to love both his will and the 'fate' that it creates. This state of 'higher consciousness' is not a break in consciousness, but rather a combination of perceptual and conceptual knowledge, of suprahistorical and unhistorical perspectives. The narrator simultaneously *views* all the possible parallel lives that he has lived or will live, but he is also *experiencing* them. Although the end is constantly deferred and never specifically described, this vision is a teleological one: the last sentence of the story depicts the Unlearner telling the narrator that "Thou shalt attain *at last*, but so much must first be done" (p. 177, emphasis added). It is implied that a sense of—in William's words—the 'cash value' of this message will carry over into the everyday consciousness of the narrator when he leaves this 'wider consciousness'.³⁷⁰ The explicit end will be forgotten—the communication will remain unfinished to the consciousness within the 'specious present'—but the narrator will be able to sense, in some indefinable way, both the future and the past in the 'minute, almost

³⁶⁹ Quoted in William's preface to *WB*, pp. 447-452, p. 448. In the last essay published in his lifetime, William recalls his relationship with this odd mystic, writing of Blood's 1874 pamphlet, *Anæsthetic Revelation*: 'I forget how it fell into my hands, but it fascinated me so "weirdly" that I am conscious of its having been one of the stepping-stones of my thinking ever since'. See 'A Pluralistic Mystic', in W. James, *Memories and Studies* (New York: Greenwood Press, 1968) pp. 371-411, p. 373. See also G. William Barnard, *Exploring Unseen Worlds: William James and the Philosophy of Mysticism* (Albany: State University of New York Press, 1997), especially pp. 29-34, for a comparison of the ideas of William and Blood.

³⁷⁰ William uses the phrase 'cash value' throughout his *Pragmatism: A New Name for Some Old Ways of Thinking* (London: Longmans, Green: 1907). In his pragmatic philosophy, it refers to the practical consequences of an idea or experience.

invisible changes' of his recurrent lives (pp. 174-175). There are intimations of these 'sensations of the higher', William implies, in his earlier, psychological writings, as Levin notes:

As long as a thought process has a dramatic unity, as long as its tensions are being guided toward resolution, we can continue to follow it. [William] James even calls the mind 'at every stage a theatre of simultaneous possibilities' (PP 1:277), hinting that thinking has a dramatic structure. [...] In James's description, the dramatic structure of thought guides the process of thought almost without our being aware of it. A thought has a functional beginning, middle, and even if, in the middle, we have lost clear sight of the beginning and cannot yet wholly guess the end. (pp. 51-52)

The dramatic unity of the narrator's consciousness at the end of 'An Unfinished Communication' is provided by his suprahistorical, four-dimensional view of his life. It is through the transitions of his 'moving consciousness' over the 'fixed things' of the 'mother-sea' of consciousness that the narrator is able to sense this 'wider view', which guides the 'higher transverse growth' of his self, almost without his awareness of it from within his embodied viewpoint in the three-dimensional, present moment (*SR 9*, p. 176).

While William's 'dramatic structure of thought' implies, Levin observes, 'that rational thought depends on psychological processes that include a prerational dimension' (p. 50), it is only in his later philosophical writings that he attempts to explore what this 'prerational dimension' might entail. As has been well documented, William was deeply involved with the American and British branches of the Society for Psychical Research, serving as president of the British SPR from 1893 to 1895. He personally researched several cases of alleged supernatural occurrence, and although he did not accept his subjects' descriptions of these experiences at face value, he found these personal encounters with things beyond natural or normal 'reality' useful in studying the human mind. Levin observes that, in William's writings,

in experience, the beyond is situated at the always permeable margin between what we only later classify as subjective and objective realms of material or ideal realities. Though James does not name his excess God, he is endlessly fascinated with people who experience it as an influx of divinity. (p. 58)

William, in short, devoted a significant portion of his time to studying and speaking with those people who, were they characters in a novel, would likely make appearances as Jamesian centres of consciousness. William became increasingly convinced in his later years that these supernatural encounters were indicative of something else 'out there', whether another dimension of consciousness, or another dimension of 'reality'. It is not surprising, then, that in 1897, William turned to Fechner's sea metaphor, because—in William's own words—'we need only suppose the continuity of our consciousness with a mother-sea, to allow for exceptional waves occasionally pouring over the dam' ('Human Immortality', pp. 1118-1119).

William's renewed interest in Fechner, which—as Marshall convincingly argues—stems from his fascination with the 'mother-sea' metaphor, would lead him to contradict some of his earlier ideas outright in the pages of *A Pluralistic Universe*. This text is a complicated one to approach within the context of Hinton's hyperspace philosophy. Within its pages, William's language most closely approximates Hinton's descriptions of higher thought and higher space: 'May not you and I be confluent in a higher consciousness and confluently active there, tho [sic] we know it not?', he asks (p. 290). However, within this same text William also offers his most outright denial of any belief in the material existence of hyperspace. This denial, influenced by Bergson's privileging

of time over space, is indicative of the popular shift away from Hinton's conceptualisation of the fourth dimension that would occur with the rise of Relativity Theory.³⁷¹

³⁷¹ Although there are several reasons for the occlusion of hyperspace philosophy and the rise of Bergson's writing in the twentieth century, a simple contributing factor that should not be overlooked is Bergson's lifespan (1859-1941). Unlike Hinton, Bergson was able to engage with Einstein's work, relating it to his own ideas. See, for example, Bergson's *Duration and Simultaneity: With Reference to Einstein's Relativity Theory* (1922), trans. by L. Jacobson (Indianapolis: Bobbs-Merrill, 1965).

Conclusion

In 1941, an admirer of Hinton's stories and his cube exercises, Jorge Luis Borges, wrote that 'Hinton has a place assured in the history of literature'.³⁷² However, as I have noted, by the middle of the twentieth century, Hinton and his hyperspace philosophy had been consigned to obscurity. William James's discovery of the writings of Henri Bergson, and his disavowal of higher dimensionality in *A Pluralistic Universe*, is indicative of this shift.³⁷³ Although in this text William frequently employs spatial metaphors such as Fechner's 'mother-sea', and describes a belief in the possibility of 'higher consciousnesses' in language that is very similar to Hinton's, he also clearly states:

I prefer bluntly to call reality [...] where things *happen*, all temporal reality without exception. I myself find no good warrant for even suspecting the existence of any reality of a higher denomination than that distributed and strung-along and flowing sort of reality which we finite beings swim in. [...] I have now to confess [...] that I should not now be emancipated, not now subordinate logic with so very light a heart [...], if I had not been influenced by a comparatively young and very original french [sic] writer, Professor Henri Bergson. (pp. 213-214, original emphasis)

In many ways, Bergson's early career runs parallel to Hinton's. His three major texts, *Time and Free Will* (1889), *Mind and Matter* (1896) and *Creative Evolution* (1907), were published at the same time that Hinton was writing; however there is no evidence that Hinton encountered Bergson's work, or that he was able to read French.³⁷⁴ Had he encountered Bergson, it seems likely that Hinton would have found his concept of *la durée pure* deeply opposed to his own hyperspace philosophy.

³⁷² J. L. Borges, 'Relatos Científicos', in *La Biblioteca de Babel, Prólogos*, my trans. (Buenos Aires: Emecé Editores, 2000), pp. 49-53, pp. 53-53.

³⁷³ William had read and corresponded with Bergson previous to the 1908 Hibbert Lectures, which were published as *PU*. Bergson sent William a copy of his *Matter and Memory* in 1898, and they began corresponding in 1902. They met for the first time in 1905. See G. W. Allen, *William James: A Biography* (New York: Viking Press, 1967), p. 435, and R. B. Perry, II, pp. 599-617.

³⁷⁴ Bergson's work began appearing in English translation only after Hinton's death. *Time and Free Will* was first published in English in 1910. *Matter and Memory*, *Creative Evolution* and *Laughter* appeared in 1911.

Bergson's theory of 'pure duration' is fundamentally opposed to hyperspace philosophy. While he shares Hinton's concern about the tendency of language and conceptualisation to limit human consciousness, Bergson sees the spatialisation of time as the primary flaw in Western epistemology:

When we make time a homogeneous medium in which conscious states unfold themselves, we take it to be given all at once, which amounts to saying that we abstract it from duration. This simple consideration ought to warn us that we are thus unwittingly falling back upon space, and really giving up time. (p. 98)

Bergson argues that temporal movement, or duration, is heterogeneous and thus cannot be broken into discrete units. Motion occurs in time, and 'there are two elements to be distinguished in motion, the space traversed and the act by which we traverse it, the successive positions and the synthesis of these positions. The first of these elements is a homogeneous quantity: the second has no reality except in a consciousness' (p. 112). This is distinct from Hinton's 'permanent things and a moving consciousness' in an important way. In Bergson's philosophy, there are no 'permanent things'. The 'homogeneous quantity' of space is in fact imposed upon the human intuition by the intellect. The only 'reality', for Bergson, is that which exists in consciousness, the heterogeneous, 'strung-along and flowing sort of reality' that the logical mind treats as homogenous when it divides it into discrete units. Thus, while Hinton argues that duration is the way in which the mind encounters the fourth dimension of space, Bergson believes that applying spatialised thinking to the experience of temporality is in fact artificial and limiting.

The past, for Bergson, is not 'visitable': 'as if this localizing of a *progress* in space did not amount to asserting that, even outside consciousness, the past co-exists along with the present!' (p. 112, original emphasis). As I have argued throughout this study, the co-existence of the past is precisely what Hinton's hyperspace philosophy implies. The

hyperrealism of hyperspace philosophy oscillates between that of the surface, or the simulacrum, and the *sui generis* of the transcendent 'reality'. Indeed the very methodologies of 'ambulatory relations' and the 'Arabic method of description' imply a spatialised way of thinking. The mind cannot 'move through' experiences, constantly reassessing and revising, unless these experiences are imagined to inhabit a 'space', just as a reader cannot fill in the 'gaps of indeterminacy' of a text unless the text exists in the physical realm.³⁷⁵ I have described Hinton's hyperspace philosophy as a kind of transcendental materialism, and throughout my discussion of the dimensional analogy and framing, the emphasis has been on the *textual* nature of Hinton's project:

It is generally said that the mind cannot perceive things in themselves, but can only apprehend them subject to space conditions. And in this way the space conditions are as it were considered somewhat in the light of hindrances, whereby we are prevented from seeing what the objects in themselves truly are. [...] There is in so many books in which the subject is treated a certain air of despondency—as if this space apprehension were a kind of veil which shut us off from nature. But there is no need to adopt this feeling. The first postulate of this book is a full recognition of the fact, that it is by means of space that we apprehend what is. Space is the instrument of the mind. (*NET*, p. 2)

Although composed and published before Bergson's first book, Hinton's remarks here anticipate and challenge Bergson's critique of the spatialising tendency of the human consciousness. While Hinton views the assumption that space is limited to three dimensions as a 'veil' over the 'true' face of nature, he does not seek to transcend the material, spatial realm entirely. It is, Hinton argues throughout his work, how humans encounter the world, the means by which consciousness is possible. Therefore, at a fundamental level, Hinton's hyperspace philosophy is a celebration of the technology of representation, of the means—as Jenkins identifies it, 'spatial practice—'with and through which' he and his contemporaries thought.

³⁷⁵ Even electronic texts must be mediated through a screen—often referred to as a 'reader'—before the human reader can encounter them.

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