

## Introduction

SHARON RUSTON

WHEN INTERVIEWED by the *Times* in August 2007 V. S. Naipaul said that English literature departments in universities should be closed down. Naipaul claimed that universities should only teach science and that they should only 'deal in measurable truth' (Appleyard 2007). This is a striking case of a man best known as a novelist denying the validity of the professional literary critic. One might draw a parallel with C. P. Snow's Rede Lecture in 1959, in which he too objected to 'literary intellectuals' (Snow 2005, 4). Why is it that literary critics engender such feelings in the authors they study and discuss? And, why is it that the study of literature (as opposed to the study of other humanities subjects) has so often been positioned antagonistically against science?

Certainly Naipaul's work, unlike, say, Ian McEwan's, is not especially interested in exploring scientific matters or methods, or any possible common ground between science and literature. His objection with English literature academics is that by publishing their ideas they 'distort' our view of things. The ideas they present are not popular or widely held: 'They're just ideas in grubby little textbooks that are stuffed in students' bags.' Closing down English departments across the world would have an immediate impact: 'It would release a lot of manpower. They could go and work on the buses and things like that' (Appleyard 2007). These few lines reveal some often-heard criticisms of the English academic: they have an unrealistic sense of their own importance; their profession is enclosed, self-sustaining and separate from the outside world; they could be doing something more useful. To a literary critic, though, the wording of that phrase, the 'grubby little textbooks' that we write for students, is fascinating and suggestive. It smacks of a kind of Leavisite-elitism that was clearly revealed in that critic's vitriolic response to Snow, accusing him of a 'vulgarity of style', his novels of evincing 'nonentity' on every page (quoted in Snow 2005, xxxiv).

How much has changed since C. P. Snow's lecture, which gave us the phrase 'two cultures' to describe the 'gulf of mutual incomprehension' that existed between 'literary intellectuals' who did not know the

Second Law of Thermodynamics, and scientists, who, with 'the future in their bones', found Dickens 'the type-specimen of literary incomprehensibility' (Snow 2005, 4, 15, 10, 12)? The *Observer* recently tested three writers, two scientists and two broadcasters on their knowledge of science (including the fatal question asked by Snow, of course) and their answers were interpreted by the newspaper 'to confirm the arts/science divide'.<sup>1</sup> It also seems that the elitist, snobby attitude of literature scholars Snow suffered under is still perceived, and that literature is being written out of some possible future reconciliation between literature and science. John Brockman, creator of *Edge*, and proponent of the 'third culture', uses Snow's very same phrase to describe the opponents of scientists: 'Literary intellectuals are not communicating with scientists. Scientists are communicating directly with the general public' (Brockman, 1991). Scientists are writing themselves, and there is no need, it seems, of the literary.

The terms 'literature' and 'science' are of course hugely contested, and rather than rehearse some of these well-known arguments, it might be useful to consider these words in their adjectival form, especially since these are the terms often used by protagonists in these debates. The word 'scientist' itself is at times used anachronistically in this volume, given that its first coinage was in the 1830s and that natural philosophy was the dominant term until the professionalism of science in the nineteenth century. What are we describing when using the word 'scientific' or 'literary'? Thinking about this form of the word takes us to the very heart of their properties, to their characteristics. To describe something as scientific might mean to consider it demonstrable, empirically proven, methodical, objective, or systematic. Calling something or someone literary, on the other hand, carries with it a whole host of assumptions, that they are not simply literate but well-read in classical literature. Leavis, with his clear sense of 'great' literature, would presumably not consider everything printed to be literary. Perhaps the continuing sense that English academics study only the canon of traditional writing is the reason that we are denied the possibility of swelling the numbers of the new 'public academics' that Brockman celebrates (1991). In fact, Brockman's definition of science as 'public culture', is one that most English academics would recognize. He describes these new scientists as 'taking the place of the traditional intellectual in rendering visible the deeper meanings of our lives, redefining who and

what we are' (1991). It could be regarded that literature does exactly this, and that it is the job of the literary critic to discover, explain, even 'render visible' the deeper meanings we find in literature?

English can be seen as an amorphous discipline, one that it is difficult to define. In modern English departments, one can find the study of film, theory, performance, and much more, rather than solely the written word. What defines English might be the attention paid to the language used; literary criticism could be regarded as a method rather than an object of study. Many English academics have embraced the creation of a new discipline, cultural history, which is not necessarily limited to the printed text, and which has extended its purview to science as part of the culture of the past.

As far back as the debate between Matthew Arnold and T. H. Huxley in the 1880s the idea of what might be classed as literature was under debate. Arnold, responding to Huxley, wanted to be clear even then that by literature he did not mean simply *belle lettres*. In the title of his 1882 Rede Lecture, 'Literature and Science', he did not even mean English literature, but the classics. If you agreed with Arnold that the aim of culture was 'to know ourselves and the world', and agreed that the means to this end was 'to know the best which has been thought and said in the world', then one should read Euclid's *Elements* and Newton's *Principia* and learn about 'such men as Copernicus, Galileo, Newton, Darwin' (Arnold 1992, 458, 460). He continued with 'To know English *belle lettres* is not to know England', and accepted that 'In that best I certainly include what in modern times has been thought and said by the great observers and knowers of nature' (Arnold 1992, 461). It is perhaps important to note, though, that in his later discussion of classical literature he points out that some of the 'best' of the past has been written by men who 'had the most limited natural knowledge' (468). For Arnold, it is something else entirely that makes classical literature worthy of our study and, using a phrase that he repeats throughout 'Literature and Science', it is 'a suggestive power, capable of wonderfully helping us to relate the results of modern science to our need for conduct, our need for beauty' (468). The suggestiveness of literature, its ability to influence human conduct, seems primary for Arnold. His notion of 'culture', of course, was as a moral cure for the 'anarchy' he found in society.

In the same terms, and at around the same time, English as a university discipline was trying to justify its need to exist. E. A. Freeman, Regius Professor of History in Oxford, in 1887 objected to the creation of an English School at that university because 'we do not want ... subjects which are merely light, elegant, interesting. As subjects for

<sup>1</sup> 'The Panel', accompanying Adams 2007.

examination, we must have subjects in which it is possible to examine' (quoted in Moran 2006, 23). Implied here is the lack of 'measurable truth' that Naipaul finds in literary study, the idea that there is no right answer, or that all interpretations are subjective. Although Arnold did not support the establishment of English as a university subject his ideas were influential, particularly that of 'knowing' England through its literature. Joe Moran sees the turn away from so-called 'German' research and the promotion of literature 'as the prime purveyor of [English] national culture' by such figures as Arthur Quiller-Couch and I. A. Richards as part of the anti-German sentiment of the post-First World War period in the 1920s (2006, 38, 37).

Since its beginnings then, the academic discipline of English has debated, interrogated, questioned and challenged itself: its notion of what it is, what it is for, what is its value and worth, have constantly been questions it has asked of itself. These are questions that science has been less quick to ask itself and it is significant that the new science GCSEs being taught to students who are unlikely to continue with an education in science, which consider the 'social, political, economic and ethical dimensions of the subject' and equip students to 'evaluate science-related questions that they will encounter in real life', have been criticized for doing so. Asking such questions, according to a study that was published in March 2007, only encourages cynicism (Randerson 2007).

One possible definition of the discipline of English on which many now working in it may well agree, is that studying literature reveals the part that it plays in the formation of identities, such as, for example, national identity (it is, after all, called 'English'). One could argue that Naipaul has done well out of this aspect of the discipline, with the emergence of postcolonial criticism. Science has also been seen as playing a part in the formation of such identities. Huxley declared in the opening gambit of his debate with Arnold, on the occasion of a new science college opening in Birmingham in 1880, that 'modern literatures' should not speak for his age, the 'distinctive character' of which 'lies in the vast and constantly increasing part which is played by natural knowledge' (quoted in Arnold 1992, 460). C. P. Snow also regarded literary intellectuals as 'natural Luddites', who could not see the ameliorating benefits of the industrial revolution (Snow 2005, 22). In spite of having read Raymond Williams' work on the nineteenth-century novelists' complex engagement with the industrial revolution, Snow thought the class position of writers – 'The industrial revolution looked very different according to whether one saw it from above or below' – meant that they

could not see the primal benefits afforded by the progress in science and technology (Snow 2005, 27).<sup>2</sup>

Huxley asked, what was the use of 'mere literary instruction and education' compared to 'sound, extensive, and practical scientific knowledge' (quoted in Arnold 1992, 458)? In the same manner, while Snow admits that 'Man doesn't live by bread alone', he pointed out that this 'is not a remark that one of us in the western world can casually address to most Asians, to most of our fellow beings, in the world as it now exists' (Snow 2005, 78–79). This utilitarian notion is one that Leavis reacted to, in his condemnation of, as Stefan Collini has put it, 'the "technologico-Benthamite" reduction of human experience to the quantifiable, the measurable, the manageable' (Snow 2005, xxxiii). It is a refrain that is still heard today; what is the point of literature? English students are never going to find a cure for cancer, but *Brave New World* presents a rather bleak view of a world with health but without culture.

In an attempt to articulate the *raison d'être* for literature and its critics, claims were made that many of us are now uncomfortable with: both science and literature have claimed to be the means by which to reach 'truth' in terms that religion had used in centuries previous. Arnold's insistence, for example, that literature could act as a moral guide and civilizing influence on our lives can seem like a recasting of the role religion once held. Even before religious doubt had gained its hold on British society, Wordsworth compared his projected poem *The Recluse* to a 'gothic church', and M. H. Abrams took this up in his 1971 book on Romantic poetry *Natural Supernaturalism*, finding secularized versions of traditional theological concepts in this and other writing of the period (Abrams 1973). If literature is the new religion ('spilt' or otherwise), then as John Cartwright has put it, 'literary critics become the new priests of culture' (Cartwright and Baker 2005, 270).<sup>3</sup>

Coleridge in his 1830 *On the Constitution of Church and State* imagined the formation of a 'clerisy', though he was not thinking here of literary critics, but more of, in Peter Allen's words, 'a permanently

<sup>2</sup> Stefan Collini tells us that Snow had read Williams' *Culture and Society*, which was published in 1958, the year before Snow's Rede lecture. Collini thinks that Snow's quotation of Coleridge, for example, comes from Williams' book, but in spite of this evidence finds that Williams' 'complex discussion of the literary responses to industrialism does not seem to have modified Snow's conviction that the champions of "culture" were all tainted with "Ludditism"' (Snow 2005, xxxv, n. 25).

<sup>3</sup> T. E. Hulme famously described Romanticism as 'spilt religion' (1970, 58).

endowed learned class', or 'an intellectual establishment' (Allen 1989, 485). Coleridge imagined that these figures would 'preserve the stores, to guard the treasures, of past civilisation, and thus to bind the present with the past' (Coleridge 1976, 43). The elitism of such a position, and the responsibility for deciding which were the 'stores' and 'treasures' that should be preserved, is one that Leavis took upon himself but which current English academics have found more problematic. The increased diversity of both students and staff in English departments has decreased the stranglehold that the canon of literature once had on curricula. The equally pervasive influence of postmodernism has made us more wary of speaking in terms of absolute truths, and few people these days would regard literature as containing some special, mystical quality.

Abrams' borrowing of his title from Thomas Carlyle's *Sartor Resartus* is a further possible point of connection between the study of literature and science, which is the study of nature. The idea that one can find the miraculous or the wonderful in the material and the everyday is something both literature and science have claimed for themselves at different times. Often stemming from Darwin's final passage of *Origin of Species*, where he declares upon contemplating the entangled bank, 'there is a grandeur in this view of life', popular science writers have made it their career to enthuse the public with a sense of wonder at the natural world. Stephen Jay Gould's title *Wonderful Life* comes from Frank Capra's film *It's a Wonderful Life*. The wonder of both texts is primarily amazement at the historical concept of contingency, where seemingly insignificant events are understood to have radically and irrevocably led to the present. As Gould points out, this 'great theme of contingency in history' has been 'imposed' because of discoveries such as those made at the Burgess Shale 'upon a science uncomfortable with such concepts' (Gould 2000, 14).

The committed atheist Richard Dawkins, who describes himself, presumably, in his first chapter's title 'A deeply religious non believer', has also set himself to the task of reminding people of 'the sense of wonder in science' (Dawkins 2006; 1998, xii). Dawkins considers this sense to be 'a deep aesthetic passion to rank with the finest that music and poetry can deliver', and in his book *Unweaving the Rainbow: Science, Delusion and the Appetite for Wonder* is intent on proving that literature does not have a monopoly on inspiring feelings of awe (Dawkins 1998, xxii). From the other side of the fence (if there really is a fence) Emeritus Professor of English at Rutgers University George Levine's most recent book, *Darwin Loves You: Natural Selection and the Re-enchantment of the World*, takes for its title the commonplace (particularly in America)

bumper-sticker 'Jesus Loves You' (Levine 2006). Clearly Levine wants to show that as much comfort can be drawn from the natural world as is from the spiritual one by those who believe in it. Levine's efforts are to disprove Max Weber's claim that science robs the world of meaning and value, and to emphasise that Darwin had this same sense of wonder in the world he saw before him.

Darwin has been one of the most suggestive scientists and science writers to fiction writers, poets, and literary critics. He has arguably been the most important scientist in the development of a new interest in the connections between literature and science. Nearly all of the essays in this collection refer to the work of Gillian Beer (author of *Darwin's Plots*) at some point and her work has been hugely influential: her insistence that the relationship between literature and science is one of 'interchange rather than origins and transformation rather than translation' can be seen throughout this volume (Beer 1990, 81). There have been a number of important critics on the cultural history of science, including, among others, Roy Porter, Simon Schaffer, John Gascoigne, Ludmilla Jordanova and Patricia Fara. The essays contained represent the possibilities of engagement between the two cultures, rather than a dismissal of the 'literary' in the invention of a 'third culture'. As Snow hoped: 'The clashing point of two subjects, two disciplines, two cultures – of two galaxies, so far as that goes – ought to produce creative chances' (Snow 2005, 16). These creative chances have been seen in much interesting work produced by such contemporary writers as Michael Frayn in *Copenhagen*, Tom Stoppard in *Arcadia*, Ian McEwan in *Saturday*, and the poetry of Daniel Abse, Deryn Rees-Jones and Helen Clare. In Britain alone, the creation of the British Society of Literature and Science in 2005, the Liverpool University Centre for Poetry and Science in the same year, and the fact of this volume testify to the developing interest in the connections and exchanges possible.

The essays contained in this volume could never have represented all of the historical periods of literature or science; neither the many genres of literature nor subjects of science; and not the multitude of possible methodologies that might be used in considering the relationship between the two. Yet in their multiplicity of text and methodology they demonstrate the complexity of literature, science, and the interfaces between them. Elaine Hobby's essay '“Dreams and plain dotage”: The Value of *The Birth of Mankind* (1540–1654)' makes a scientific text her subject, to which she applies the methods of literary criticism, and in fact all of the essays reveal this exercise to be primary to their purpose. All authors here approach the texts in question, whether scientific or



literary or critical, with an attention that is alive to the way things are said alongside the meaning of what is said. In David Amigoni's essay '“The luxury of storytelling”: Science, Literature and Cultural Contest in Ian McEwan's Narrative Practice', Darwin's use of stories as a means of communicating science is lambasted by Joe Rose, a scientific journalist in McEwan's novel *Enduring Love*. Contrary to Rose's view, which pits 'the power and attractions of narrative' against 'judgement', theoretical underpinning, definition of terms, and demonstrable evidence, Amigoni finds that in McEwan's novels narrative continues to exert a power and an authority.

McEwan's *Saturday* more than any other recent novel perhaps dramatizes the clashing of two cultures, in the characters of Henry Perowne, a middle-aged, well-off brain surgeon, his famous poet father-in-law, Grammaticus, and his fledgling poet daughter, Daisy. The lack of comprehension, and barely concealed dislike, between Perowne and Grammaticus seems to confirm the completely different world views of the scientist and the literary intellectual; while Perowne has been criticised for his smugness, the poet is arrogant, pompous, inexplicably moody, and a drunk, seeming to confirm many widely held opinions of his type. Yet, in the novel, reciting Matthew Arnold's poem 'Dover Beach' aloud at a critical moment distracts the attention of a dangerous and unstable man who declares it 'beautiful' and indeed it is literature that saves the day (and then science that saves the man). As Amigoni discusses, this episode asks, what does literature do? What can it achieve? What is its proper place in the history of civilization?

In 'Evolution, Literary History and Science Fiction', Brian Baker takes as his subject literary critical modes, examining, for example Joseph Carroll's 'rhetoric' in making both evolutionary psychology and the humanist methods of practical criticism seem quite simply as though they are common-sense, or even 'correct'. Baker also considers Franco Moretti's use of 'quantitative modelling', itself a scientific method, to see how such a technique bears up under close scrutiny. Moretti is unable to adequately explain why when applying this method to the SF genre it fails to account for the longevity of this particular genre, its refusal to become extinct and to revive in similar but related forms. Baker's essay asks why it is that biological method (used to such different ends by such critics as Moretti and Carroll) are so influential in literary theory: 'The question we must ask is: why (biological) science, and why now?'

The application of 'literary and critical techniques to analyse such features as metaphor and tone' in Hobby's essay is coupled with reading the scientific text, in this case *The Birth of Mankind*, historically. Hobby

considers the textual history of this book, which had appeared in many guises and languages. She argues that the book in the form in which she deals with it most tells us about the world it was received by, thus correcting some misunderstandings about early-modern life and relationships. Not only this, the book also proves that some of our now commonplace assumptions about gender, coming from Michel Foucault through Thomas Laqueur, are similarly unfounded. Instead *The Birth of Mankind* 'reimagines' the female body in surprising and complex ways, refusing to accept the mistaken assumptions of the past.

The use of science in the representation and even formation of gender stereotypes is at issue in a few of the essays included here. My own essay 'Natural Rights and Natural History in Anna Barbauld and Mary Wollstonecraft' looks at how both of these writers turned to science to find support for their conviction that there were natural rights, whether female or male, orthodox or dissenter. The idea of what was 'natural' to women was supported then, as it is still now, by the evidence drawn from the animal world. Wollstonecraft used such evidence to her own advantage, comparing woman in her civilized condition to a domestic animal who had been forced and trained into behaving in a way that is not natural. The women she sees around her are therefore merely unnatural versions of what they could be, with overly refined, delicate and unhealthy constitutions. Amigoni's essay similarly points out that McEwan's *Saturday* explores the competing claims of 'biological determinism and indeterminate, proliferating social and cultural meanings'.

While many essays deal with broadly biological sciences, Alice Jenkins and Katy Price write about the hard sciences, mathematics and physics respectively. Jenkins' essay 'George Eliot, Geometry and Gender' asks us to remember just how influential the study of Euclid was, taught as it was to many generations of pupils. She reveals his presence in the 'metaphors, structures and key words which shape an extraordinary number of Victorian literary, political and polemic writings'. Considering the novels of George Eliot specifically, geometry is used 'to suggest the fixedness' of such systems as gender difference. Certainly it seems that there were many men of the period who would have sympathized with poor Tom Tulliver in *Mill on the Floss*, who has such trouble with his lessons in Euclid. One of the 'Novel Possibilities' of Einstein's theories that is presented in Price's essay also involves the debunking of the 'hated Euclid' whom it is hoped 'may have been talking through his hat all these years about the parallel lines that never meet'. For Tom's sister, the precocious Maggie (as was the case too, it seems, for Marian Evans herself), learning Euclid promised but failed to bring the 'mascu-

line wisdom' that would help her find contentment and relieve her frustrations. Jenkins also discovers more about the nature of the teaching of Euclid in such institutions as the Ladies College, and the reformist pedagogical aims of its mathematics teachers.

According to Jenkins Euclid was used as a 'mental exercise' to clear and order the minds of adolescent boys; similarly physics is used to 'establish a tension between messy human passions and cold abstraction' in Dorothy L. Sayers' *Documents in the Case*. Marital and other relationships are signified by characters' reactions to Einstein's theory of the fourth dimension in Katy Price's essay 'On the Back of the Light Waves: Novel Possibilities in the "Fourth Dimension"'. Price's essay uses a range of contemporary popular writing about the subject, including essays in *Punch* and reports in the *Times* that show the world was alive to the comic possibilities of these theories. Price finds that what she calls the 'mixing up' of scientific and social themes enables discussion of both rather than writing this off as simply 'bad science'. Almost all of the essays deal with the representation of science as 'truth' whether the texts they examine challenges this or not. One (female) character in Sayers' *The Documents in the Case* declares poetry one of the 'only true realities after all'. This character is not, however, a mouthpiece for Sayers herself. Price finds that relativity is used both as a subject and a method in Sayers' novel, and ultimately, as is also the case in 'Absolutely Elsewhere' there is a solution to the mystery.

Jill Rudd's essay 'From Popular Science to Contemplation: The Clouds of *The Cloud of Unknowing*' also considers popular science writing, this time from the medieval period. She finds evidence that the clouds which feature in a fourteenth-century mystical treatise, *The Cloud of Unknowing*, are not solely metaphorical (there to represent forgetting and unknowing) but can be identified with discussions of clouds in contemporary books of science, such as *Sidrak and Bokkus* and *On the Properties of Things*. Such findings remind us that 'the blending of scientific and literary modes recently advocated by Gould' has been going on for far longer than the nineteenth century. The particular place of clouds in literary texts, and their seemingly 'automatic' association with metaphor, gives them a special status, which, as seen in the recent work of Richard Hamblyn 'make claims for meteorology as a literary form as much as a science'.

Martin Willis's essay considers both gender and national identity in his essay 'Le Fanu's "Carmilla", Ireland, and Diseased Vision'. As with other essays in this collection, he points out that 'science never remains unadulterated when it enters the public sphere, and that public under-

standings of science, as well as misunderstandings, are just as much a part of science as the theoretical and experimental work of the scientist'. Willis argues that in Le Fanu's gothic tale 'disease' is situated in the body of the Other, or, in the body that represents foreign-ness, in this case, the Irish and the female. Using medical theory from the period Willis reads and tests the story against competing ideas of how disease was caught and transmitted. He reminds us that science often works on the level of the imagination, where, in this case, the public cannot actually see the enemy ('the parasite or the dust mote'), which can only be seen by the use of the microscope and finds in the 'construction of a microscopic world' 'a process of myth-making'.

All of the essays in this collection testify to the idea that we can find in both literary and scientific texts common ground, common purpose and common means. Wordsworth in the opening to *The Recluse* declared that he would be writing 'On Man, on Nature, and on Human Life/Musing in solitude'. Abrams also chose these lines with which to open his critical book *Natural Supernaturalism* (1971). Surely these are the subjects of both literature and science and the essays contained here find wonder and awe in all texts dealing with them. We should neither dismiss the literary from the scientific nor the scientific from the literary and I hope that, using Snow's phrase, this collection proves that from contemplation of the two, we can 'produce creative chances'.

### Works Cited

- Abrams, M. H., 1973 (1971). *Natural Supernaturalism: Tradition and Revolution in Romantic Literature*. New York: W. W. Norton.
- Adams, Tim. 2007. 'The New Age of Ignorance'. *The Observer*, 1 July. <http://observer.guardian.co.uk/review/story/0,2115519,00.html> <date accessed: 11 September 2007>
- Allen, Peter, 1989. 'Morrow on Coleridge's Church and State', *Journal of the History of Ideas* 50: 3 (July–September): 485–89.
- Arnold, Matthew, 1992. 'Literature and Science', in *Matthew Arnold: A Critical Edition of the Major Works*, ed. Miriam Allott and Robert H. Super. Oxford: Oxford University Press.
- Beer, Gillian, 1990. 'Translation or Transformation? The Relations of Science and Literature', *Notes and Records of the Royal Society of London* 44: 81–99.
- Brockman, John, 1991. 'About Edge', *Edge*. [http://www.edge.org/about\\_edge.html](http://www.edge.org/about_edge.html) <date accessed: 11 September 2007>
- Cartwright, John and Brian Baker, 2005. *Literature and Science: Social Impact and Interaction*. California: ABC-CLIO.

- Coleridge, S. T., 1976. *On the Constitution of the Church and State*, ed. John Colmer. *The Collected Works of Samuel Taylor Coleridge*, ed. Kathleen Coburn, vol. 10. New Jersey: Princeton.
- Dawkins, Richard, 1998. *Unweaving the Rainbow*. Harmondsworth: Penguin.
- Dawkins, Richard, 2006. *The God Delusion*. London: Black Swan.
- Gould, Stephen, 2000. *Wonderful Life: The Burgess Shale and the Nature of History*. London: Vintage.
- Hulme, T. E., 1970. 'Romanticism and Classicism', in *Romanticism: Points of View*, ed. R. F. Gleckner and G. E. Enscoe. New Jersey: Prentice-Hall: 55–65.
- Levine, George, 2006. *Darwin Loves You: Natural Selection and the Re-enchantment of the World*. New Haven: Princeton University Press.
- Moran, Joe, 2006. *Interdisciplinarity*. The New Critical Idiom. London: Routledge.
- Randerson, James, 2007. 'New Science GCSE Fosters Cynicism Among Pupils, Says Study', *The Guardian*, 1 March.  
<http://education.guardian.co.uk/gcse/story/0,,2023788,00.html>  
 <date accessed: 16 September 2007>
- Snow, C. P., 2005 (1959). *The Two Cultures*. Introduction by Stefan Collini. Cambridge: Cambridge University Press.

## From Popular Science to Contemplation: The Clouds of The Cloud of Unknowing

GILLIAN RUDD

THIS ARTICLE deals with the clouds which give the medieval mystical treatise *The Cloud of Unknowing* its name. Rather than being solely metaphorical, the clouds of forgetting (beneath the contemplative) and unknowing (above and affected by light) have much in common with clouds as explained by contemporary books of popular science, such as *Sidrak and Bokkus* and John Trevisa's *On the Properties of Things*. This demonstrates how these medieval texts exemplify the blending of scientific and literary modes recently advocated by Gould (2003).<sup>1</sup> In general, these religious and scientific texts combine factual observation, deduction and religious interpretation with direct human response to the natural world to arrive at a whole understanding of the physical and metaphysical world. In this these works share common ground with current green thinking.<sup>2</sup> Broadly speaking, greens promote the value of the non-human in terms which do not require 'nature' to be subservient to, or have existence solely within, a human value-system.

Clouds appeal: witness the popularity of Richard Hamblyn's *The Invention of Clouds* (2001) and Gavin Pretor-Pinney's *The Cloudspotter's Guide* (2006). Both can be classed as 'popular science' since they address a general audience by providing hard scientific (meteorological) information alongside lighter matter: in Hamblyn's case biography, in Pretor-Pinney's joyous appreciation of natural phenomena.<sup>3</sup> Each attests

<sup>1</sup> In *The Hedgehog, the Fox and the Magister's Pox: Mending the Gap between Science and the Humanities* Stephen Jay Gould uses the adage *multa novit vulpes, verum echinus unum magnum* ('the fox knows many things, but the hedgehog one big thing') as a hook for his argument that sciences and humanities must blend strategies and rhetorics to create a needful wholeness (2003, 1–8).

<sup>2</sup> The terms 'green', 'ecological' and 'environmentalist' are almost exchangeable. A good introduction is Garrard (2004). I suggest how ecocriticism might be applied to medieval literature in *Greenery: Ecocritical Readings of Late Medieval English Literature* (2007).

<sup>3</sup> *Wikipedia* (itself arguably an example of the genre) defines popular science as writing by experts for non-experts. It is thus distinct from science journalism