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Jeanette Winterson's Enchanted Science

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Jeanette Winterson's Enchanted Science

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The cover photo shows Stefania Bonfadelli in *La Traviata* - Theo Tekstra, 1999



For the lady of the sloppy flans
and the man who risked what he valued



Abbreviations used

OAF	<i>Oranges Are Not the Only Fruit</i>
BFB	<i>Boating for Beginners</i>
TP	<i>The Passion</i>
STC	<i>Sexing the Cherry</i>
WOB	<i>Written on the Body</i>
GMA	<i>Great Moments in Aviation</i>
AL	<i>Art & Lies</i>
AO	<i>Art Objects</i>
GS	<i>Gut Symmetries</i>
TWOP	<i>The World and Other Places</i>
TPB	<i>The PowerBook</i>

CONTENTS

Introduction	vii
1 Science and Literature	1
Tensions and Vistas	2
Two Cultures	5
Understanding Science	9
The Influence Model	11
Deconstructing Difference	17
Defining and Demarcating	19
The Sokal Affair	28
Jeanette Winterson, Science and Literature	29
2 Enchantment as Resistance	35
An Outline of Historical Periods	35
Winterson and the Enlightenment	41
Winterson and Romanticism	53
Winterson and Twentieth-Century Modernity	61
Winterson and Postmodernism	66
Enchantment as Resistance	78
3 Place, Space and Uncertainty	81
Aesthetic Antidotes	81
Two Metaphors of Space and Place	89
Unstable Environments	97
Influence and Intertextuality	101
Creative Interpretations of Science	105
4 Time and History	107
The Notion of Time in Science and Literature	107
Simultaneity and Relativity	113
Time Travel	117
Strange Simultaneities	122

Eliot and Winterson	125
The Grid: Physics and History	131
Postmodernism and Time	133
Science and Literature Revisited	140
5 'Science has no Sex?' On Gender and Rationality .	143
Sameness Feminism	144
Deconstruction Feminism	145
Difference Feminism	152
The Male Gaze	158
Feminine Language, Feminine World	163
A Feminist Critique of Science	176
A Feminine Science	183
6 A Literary Critique of Medicine	185
Scepticisms	185
Surgery and Ethics	193
Paternalism and the Construction of Medical Reality	194
Two Physicians	196
A Medicine of Love	199
The Role of Literature in Medical Ethics and Medical Theory	203
Conclusion	207
Appendix I: Overview of Main Characters	211
Appendix II: Overview of Winterson's Novels	213
Bibliography	219
Samenvatting	235
Curriculum Vitae	243

INTRODUCTION

It used to be that the real and the invented were parallel lines that never met. Then we discovered that space is curved, and in curved space parallel lines always meet. (*TPB* 94)

Real and invented, the world of objects and the human imagination, science and literature, Jeanette Winterson weaves these apparent oppositions together in an oeuvre that celebrates the power of love, beauty and language. In an attempt to remove the barriers between the rational and the poetic, she mixes her opinions of consumerism with transcendent thought, incorporating brief treatises on such diverse topics as quantum physics, breast surgery, and communication technology, while echoing postmodern literary theory and quoting from Romantic poets such as William Blake and Modernist poets like T.S. Eliot. For Winterson, her art is a crusade against a predictable and unimaginative reality that denies that there is more than meets the eye.

Winterson was born in 1959, and grew up in Accrington, Lancashire, a Northern-England working class town, where she was raised by her adoptive father and mother. They were members of a Pentecostal church. Winterson grew up being told that she belonged to God and had been chosen by God, and that because he was empowering her, she could achieve anything (cf. Lord 1996). She was destined to become a missionary, and was already preaching at a very early age, which may explain the uncompromising tone of much of her writing. When she was sixteen she left home because her love for other girls was not tolerated. To earn a living, she worked in a variety of jobs, ranging from ice-cream van driver and make-up artist in a funeral parlour to domestic assistant in a mental hospital, experiences that enriched her imagination and provided her with much of the imagery she would use throughout her work. In 1978, she was admitted to St. Catherine's college at Oxford, where she studied English Language and Literature. It was here that she started reading Virginia Woolf, one of her main sources of inspiration. After leaving Oxford, she worked in a theatre for a while, until her first novel appeared, at age 26. Soon she found an enthusiastic audience. Her work was widely translated, and soon began to appear on syllabi of literature courses around the world. She earned herself a reputation not only for the beauty

of her stories but also for her often hostile attitude towards critics and for her wild lesbian love life. She lived in London until 1997, when she fell victim to a depression. She moved to the countryside together with her steady girlfriend, Margaret Reynolds. Since then, her attitude towards critics and academics has become milder. She started an interactive website and is still writing and publishing.

A remarkable side to Jeanette Winterson's writing is her notorious relation to the press. Winterson's debut in 1985 aroused much enthusiasm. The press were extremely excited. Her work was considered highly original. She won several prizes, and Gore Vidal called her "the most interesting young writer I have read in twenty years", which went a little to her head, as she repeatedly stated that Vidal was right. This attitude was not appreciated, and many critics turned against her (Gerrard, 1994); (Wolff, de 1995); (Barnacle, 1997); (Kemp, 1998).

Many literary works can be regarded as vehicles for their author's worldviews or political ideas. However, trying to prove that characters' opinions are in fact their author's, is usually a treacherous undertaking – it is easy to slip from biographical criticism into the biographical fallacy. The next chapters will show, however, that it is not difficult to see correspondences between the characters she creates and her own philosophical views. In fact, as Delia Falconer argues in "Bitter Harvest", Winterson often makes sure that we do not overlook them:

It is her attempts to play the author conspicuously within the books, to make her readers get their meaning (...) (Falconer 1997)

Her main characters are so forceful and larger than life that they often personify concepts or qualities, just like characters in allegories. The narrator's tone, the outcome of the book and metafictional passages clearly show the author's preferences. In that way, she expresses her condemnation of characters and principles that are unfavourable to her. Winterson's characters can be seen as models with an almost emblematic internal coherence. To a certain extent, they remain flat – they do not develop in the course of events. They are easily divided in heroes and their foes. In her introduction to *Great Moments in Aviation*, one of the few occasions where she openly discusses her literary strategies, Winterson herself claims that "I wanted to follow the fairytale convention. A heroine, a hero, a villain and a fairy godmother" (*GMA* xii). The idea that all of Winterson's

fictions are of an allegorical nature is also supported by the way well-known allegorical and mythical characters function alongside Winterson's own characters, suggesting the absence of any categorial difference between them. We come across a wide variety of biblical, mythical and fairy-tale characters: a sorcerer, Sir Perceval, Arthur, Artemis, Orion, Orpheus, Bathsheba, an orange demon, Zillah, Samson, The Queen of Heaven, The Blessed Virgin, Twelve Dancing Princesses, and so on. These characters always appear to come from a deeper reality, to have knowledge the other characters have no access to. The sorcerer, for instance, already knows the protagonist's name even though she has not introduced herself; the orange demon knows and travels through all the books ever written. Fortunata, one of the Twelve Dancing Princesses, functions as the protagonist's guide into a transcendent world. These characters just appear and disappear, dropping an opinion or showing how things 'really' are. They just announce themselves, putting forward an idea needed by one of the characters.

I believe that most of Winterson's novels can be read as fairy tales or allegories, encapsulating discussions about modernity and its countercultures. What stands out unmistakably, is that some characters represent a postmodern worldview, while others are ardently modern. Winterson's texts in the end become ambassadors for the imagination, for worlds of subjectivity, freedom and emotion, forcefully opposing those traditions that seek to establish law, objectivity, and order. Playfully mixing spheres and narratives, her work encompasses a thorough *Vernunftkritik*, an attitude directed against the grand narratives of the modern era – which would make Winterson a postmodernist. At the same time, she depicts a world of illusion where trapdoors and soothsayers hint at hidden worlds, which would make her a Romantic. That is why, in this thesis, I will draw parallels between Winterson's ideas and the bodies of thought of Romantic and postmodern thinkers – even though these are not specifically mentioned in her texts. I do this, not merely to compare, but to disclose the underlying level of her allegories. I will thus disclose the hidden discussion between Winterson's fictional characters, ambassadors of opposing worldviews.

You will find a table outlining the main characters in Winterson's fiction and the principles they represent in Appendix I. This includes a description of their functions in the books, that is, whether they stand out either as heroes, companions, and helpers, or as adversaries and villains. Appendix II contains an overview of Winterson's oeuvre, outlining the main story lines of Winterson's novels, introducing the characters and describing their allegorical functions.

Winterson's narrators show an unmistakeable and consistent sympathy for certain characters, a preference connected to the ideas they represent. Red-headed women for instance, are always addressed in such a loving tone that they become emblems of love and passion. *Written on the Body* contains several redheads, among them Bathsheba, one of the narrator's old loves: "Your red hair is blazing and you are saying, 'Make three wishes and they shall all come true. Make three hundred and I will honour every one' " (WOB 19). Louise has red hair as well: "If I were painting Louise I'd paint her hair as a swarm of butterflies. A million Red Admirals in a halo of movement and light" (WOB 29). In *The Passion*, we meet Villanelle, who, when she was born, had "A fine head with a crop of red hair and a pair of eyes that made up for the sun's eclipse" (TP 51). On top of the obvious and recurring approval of red-headed women in Winterson's fiction, her book covers and even her website show numerous red-haired ladies. In Winterson's feminist aesthetics the colour red is connected to its connotations in our western culture. Its intensity implies energy and vigour. It destroys optical calmness and thereby suggests revolutionary struggle. Red is associated with fire, warmth and blood, and creates a dramatic effect. Combined with femininity, in Winterson's work this colour symbolises an intense passion.

In general, Winterson's heroes are sensitive people, often travellers and searchers, exploring the world around them. They are on a quest for beauty and will cross boundaries to find it. They are, in that sense, revolutionary because they have the desire to go beyond what is already known, the passion to go beyond what is common. With that, they embrace uncertainty. The beauty they hope to find there demands a letting go, an escape from old values, as well as an openness and a passionate determination. The antagonists in Winterson's work display the exact opposite characteristics. They do not seek anything except stability, order, and law-like certainty and in some cases are mainly interested in power or money. Winterson's preference for the first set of characters and characteristics is not only evident from the passionately poetic language and visionary images with which she describes them in her fiction, but is confirmed in her non-fiction, essays and journalism. In my interpretation of Winterson's novels I have consulted the numerous interviews she gave over the years, and the essays and other writings that she has published. Also, Winterson's website, www.jeanettewinterson.com, proved to be a valuable source of information about her personal political opinions.

Winterson's characters do not necessarily cease to exist on the last page of one of her books. *The Dancing Princesses*, for instance, only really fully come to

life in *Sexing the Cherry*, but one of them seems to already appear briefly in the earlier *The Passion*: “One day he saw a young woman flying past, her clothes flying out behind her” (TP 97). Although many women in Winterson’s novels are able to float, only the Dancing Princesses are actually able to fly. This anonymous single flying female might be one of them. *The Passion* also introduces Villanelle, the daughter of a boatman. In *Art & Lies*, she and her linguistic alter ego, the poetic form, briefly return: “There is a quatrain at my chin and a sonnet on each breast, Villanelle is the poise of my hands” (AL 63). Likewise, Louise, an adult in *Written on the Body*, spends her childhood in *The Passion*: “One little girl who always followed me around pulled at my hand, her eyebrows close together with worries. ‘Will you kill people, Henri?’ I dropped down beside her. ‘Not people, Louise, just the enemy.’ ‘What is enemy?’ ‘Someone who’s not on your side’ ” (TP 8 and cf. TP 79). In this way, Winterson’s seven novels published so far become a closely knit body of work with a consistent message:

I’ve said that the seven books make a cycle or a series, and I believe that they do from *Oranges* to *The PowerBook*. And they interact and themes do occur and return, disappear, come back amplified or modified, changed in some way, because it’s been my journey, it’s the journey of my imagination, it’s the journey of my soul in those books. So continually they must address one another. And you don’t know that at the time. You only know that when you’ve done enough of them. But that’s why I say it is a series, and that’s also why I say it’s finished now with *The PowerBook* and there has to be new beginning. Whether or not I’ll go on quoting myself in this new beginning, I don’t know. (Winterson 2003a)

The appearance of Louise in *The Passion* is a case in point. In *Written on the Body* we encounter Louise as the wife of Elgin. She is having an extramarital affair with the anonymous narrator, whose sex is undeclared. Elgin is aware of his wife’s adulterous relationship. When she appears to be ill, Elgin – who is a cancer specialist – believes that she has cancer of the blood. Indeed, the test results he comes up with back him up in this. Some readers of the book believe that Elgin is trustworthy. The text in *Written on the Body*, however, contains passages that raise doubts concerning Elgin’s trustworthiness. It is in fact not at all clear if Louise really is ill, or if she is only declared ill. Elgin’s diagnosis might just amount to blackmail. It is no coincidence, then, that in *The Passion* this theme of ‘knowing the enemy’ is also tied up with the character of Louise.

We also see how an existential problem, such as uncertainty, can be experienced by various characters in different novels. Little Jeanette in *Oranges Are Not the Only Fruit* feels uncertain: "I wasn't quite certain what was happening myself, it was the second time in my life I had experienced uncertainty" (OAF 98). At the end of the novel, she chooses for a life that embraces that feeling, leaving behind the certainties of the black-and-white binary structured world created by her mother. Jordan, a boy from *Sexing the Cherry*, is confronted with exactly the same turning point in his teens: "Running away from uncertainty and confusion but most of all running away from myself. (...) And then I saw that the running away was a running towards" (STC 80). Different characters seem to converge at similar points, sharing identical insights, which makes them not so much owners of personal views, but rather, allegorical personifications of qualities.

Falling from rooftops without dying is another example of an experience shared by many of Winterson's characters. In *Art & Lies*, Picasso wants to kill herself that way. She mysteriously remains alive. In *Sexing the Cherry*, an unnamed person also survives a fall:

A young girl coming home along a slippery and frayed line of rope missed her footing and fell into the blank space below. There was a cry of horror from everyone who saw it, but the girl did not drop and crack on the ground, she floated. (STC 97)

Fortunata, one of the Twelve Dancing Princesses in *Sexing the Cherry*, does not fall to her death either. " 'Do you remember', said another sister, 'how light she was? She was so light that she could climb down a rope, cut it and tie it again in mid-air without plunging to her death. The winds supported her' " (STC 60). Similarly, in a short story called "The Mistletoe Bride" (2002), the narrator almost dies when she is locked up in a heavy box, but is miraculously released, not knowing what "final power" ("The Mistletoe Bride", page 8) aided her. Liberated by a strange transformation, she seizes the opportunity to start another life. These heroes are there for the writer to express the strength of what lies beyond the reality we know, the strength of what cannot be conceived. Or, as the narrator explains: "They say that no one can choose the day of their death, but perhaps there is a day where we can choose life" ("The Mistletoe Bride", page 8). This often happens in Winterson's novels: a revolutionary turn in someone's life that leads to a kind of rebirth, a new lease on life.

To make sure that the reader cannot mistake her intentions, Winterson includes visionary scenes at the end of each of her novels, intended to emphasise which ideas have been ‘victorious’ and which have been ‘defeated’. Another of her strategies involves the insertion of philosophical passages that are not uttered by any of the characters and do not fit into the narrative. These passages are almost metafictional at times and, even though they are often unconnected fragments, they serve as philosophical foundations for the novel. In *The PowerBook*, for instance, we come across the following passage:

There is always the danger of automatic writing. The danger of writing yourself towards an ending that need never be told. At a certain point the story gathers momentum. It convinces itself, and does its best to convince you, that the end in sight is the only possible outcome. There is a fatefulness and a loss of control that are somehow comforting. This was your script, but now it writes itself. Stop. Break the narrative. Refuse all the stories that have been told so far (because that is what the momentum really is), and try to tell the story differently – in a different style, with different weights – and allow some air to those elements choked with centuries of use, and give some substance to the floating world. (TPB 53)

These poetical opinions do not appear in the book just because one of the characters in *The PowerBook* is a writer. These insights are applicable to all of Winterson’s fiction and are certainly part of Winterson’s personal poetics. Breaking the narrative is the very essence of *Art & Lies*, and ‘refusing the stories that have been written so far’ is one of the creative forces at work in *Written on the Body*, embodied in the recurring phrase “It’s the clichés that cause the trouble” (WOB 10; WOB 71). In passages such as these, Winterson is both priding herself on the innovative strength of her writing and revealing her aims to establish a sense of the unusual and the eccentric, or of the miraculous.

At times, the metafictional remarks are echoed by characters later on in the text, or even in other novels. This gives them a meaning beyond the temporal parameters of a single narrative. In this way, certain ideas are allowed to gain importance. It makes the reader aware that these ideas are not merely characters’ personal or local beliefs, but that, rather, these ideas are principles on which Winterson’s work is founded. Principles such as freedom, for instance, as we can see in *The PowerBook*, where Ali explains the potential of cyberspace: “You can be free just for one night” (TPB 4). This echoes the life style of the Twelve Dancing Princesses in *Sexing the Cherry*, who fly to an enchanted city every night (cf. STC

95). Escaping from the confines of everyday life is what guides many of Winterson's characters – Henri, who chooses to exchange a quiet rural life for adventure in *The Passion*, Gabriel Angel, who leaves on a boat to start a new life in England in *Great Moments in Aviation*, and Picasso, Sappho and Handel “each fleeing a dead city” (AO 160) in *Art & Lies*.

Absolutism is one of the ideas that Winterson wants to emasculate. Already in an early work like *Oranges Are Not the Only Fruit*, there is a discussion between an absolutist (Elsie) and a relativist (Jeanette). By seeking to destabilise the absolute, celebrating the unexpected and the unpredictable, Winterson, through the characters she uses as her advocates, is continuously seeking to “undermin[e] our usual way of seeing” (AO 54). Indeed, in Winterson's novels, what is absolute should always be regarded with suspicion.

‘I admire her.’
‘You are an absolutist then.’
‘What’s one of those?’
‘All or nothing.’
‘What else is there?’
‘The middle ground. Ever been there?’
‘I’ve seen it on a map.’
‘You should take a trip.’ (TPB 40)

Some pieces of text are literally repeated in new books. The phrase “In a night, 200,000 years can pass, time moving only in our minds” from *Sexing the Cherry* (STC 132) returns in *The PowerBook* (TPB 60). The rest of the paragraph that follows is also copied, but slightly altered. On other occasions, the same idea or opinion is used in different books – when the idea of marriage is discussed, for instance. In *The PowerBook* we read: “Inside her marriage were too many clocks and not enough time. Too much furniture and too little space” (TPB 39), a sentiment that also occurs in a short story entitled “Newton”, describing a community of conformity where one finds plastic flowers and synthetic animals: “Why are they married? It’s normal, it’s nice. They do it the way they do everything else in Newton. Tick-tock says the clock” (TWOP 171). In this way, the author's intentions seem to emanate from the body of her work. This also occurs in the two passages below, where Winterson seems to put forward the constructivist notion that the acquisition of knowledge of the world is bound up with the individual existence of the subject. In *Written on the Body*, the narrator explains how he/she knows Louise: “That is how I know you. You are what I

know” (*WOB* 120). Five years later, in *Gut Symmetries*, one finds the same idea less personally formulated: “We are what we know. We know what we are” (*GS* 18).

Time and again, the tone of Winterson’s opinions is clearly distinguishable through the layers of her fiction. Although she turned away from her religious background, Winterson’s writings do display the didactic tone of the preacher she once was. Throughout her literary career, Winterson has been guided by a strong belief in principles such as the freedom of speech, the value of art, or the anti-linearity and multi-dimensionality of reality, and she uses these principles as the wire-frame around which she models her characters.

In Winterson’s world, female values are predominant; the advocates of her ideas are females rather than men. Although there are some masculine heroes, Winterson’s unfavourable idea of men in general is unmistakable in her fictions. As Gary Krist signals:

With a few exceptions, the males in the book (*STC*, AE) are depicted as cruel, hypocritical and/or insensitive, as little more than obstacles in the way of the self-realization of women. (Krist 1991)

Geoffrey Lord writes:

(...) the novel’s men are disappointing. [*OAF*, AE] Critics note that the male characters appear either weak, like Jeanette’s father, who might as well not be in the story at all, since he is usually kept out of the way, either at work or watching sports; or they are made to seem ridiculous, like Pastor Spratt. (Lord 1996:6)

Only very few men are presented as sensitive and vulnerable. In an interview with Xandra Schutte, Winterson says that perhaps men need women to provide them with role models, because they keep hiding themselves behind their macho images and hardly dare say that they live or feel differently (cf. Schutte 1992).

With each addition to her oeuvre, the place of science in Winterson’s work has become more and more prominent. At the beginning of her career as a writer, in *Oranges Are Not the Only Fruit* (1985), references to science are only scant. The novels that established her reputation as a dazzling storyteller, *The Passion* and *Sexing the Cherry*, contain quite a number of observations about modernity and its concepts of time and space. These novels question modern science, yet without referring to specific theories (with the exception of the Flat Earth Theory) or names of individual scientists. In *Written on the Body*, actual scientific praxis makes its entry in the work in the form of quotes from anatomy

books and by casting a physician as one of the main characters. This character allows Winterson to speak out on topics like the validity of diagnosis and medical intervention as well as medical ethics. Her next book, *Art & Lies*, stages yet another physician, and severely criticises not only medical practice but also contemporary mass media and technology. *Art Objects*, her collection of essays, is equally critical of the notion of objectivity underlying the dialectics of science, and denounces technology and a lot of other aspects of modernity as a whole, like our capitalist economy, the notion of progress, consumerism, and so forth. She then moves on to hardcore physics, in a novel where two theoretical physicists put forward their worldviews based on quantum physics and the theory of relativity (*Gut Symmetries*). *The World and Other Places*, her collection of short stories (1998), a number of which appeared earlier in various journals, again addresses the nature of time and space, without directly referring to scientific theory or praxis. Her latest novel so far, *The PowerBook* (2000), celebrates the potential of highly developed communication technology. The narrator's rituals behind her personal computer, weaving a web of e-mail correspondence, provide that novel's organisational structure.

When I started reading Jeanette Winterson's work in 1995, her opinion of science seemed quite antagonistic. But when I noticed that Winterson had quoted some lines from prof. Bradley as an epigraph to *Art & Lies*, stating that art conforms to laws, I was baffled. I was then writing my undergraduate thesis, in which I was trying to explain that Jeanette Winterson was an art lover, an absolute subjectivist, categorically criticising science and denying the existence of any (natural) law. Interpreting Winterson's use of this quotation was problematic. Either Winterson's opinions were inconsistent, or she had overlooked the implications of what she was quoting. Neither of these two options seemed right. I then started to realise that Winterson's relationship to science, and to nature, and to the idea of law, was more complex than I had thought originally. I gradually began to see that Winterson's disapproval of science is not a categorical one. Her rejection of a rationally and technologically conditioned modernity is akin to some of the Romantics' rejection of the spirit of the Enlightenment. Her search for an alternative world leaving behind modernity can be seen as a Romantic strategy as well as a specifically postmodern feminist aesthetics. At the same time, Winterson's aestheticisation of the world is an instrument for the emancipation of feminine values. Thus, Winterson combines a historical sense of Romanticism with a feminist postmodernism, enabling her to infuse a fragmentary worldview with the metaphysics of myth.

Winterson's oeuvre has not yet been studied from within the perspective of 'science and literature'. Jeanette Winterson's lesbian plots have stirred mainly the interest of feminist academics – so far, her work has mainly been studied within a feminist theoretical framework. Winterson's work, however, deserves a much wider theoretical approach than only the feminist one. A detailed study of Winterson's metaphysics, including her use of biblical references, or a study into her sometimes irregular use of grammar may prove to be fruitful as well. As I already suggested at the beginning of this Introduction, the discernment (or the absence thereof) between 'real' and 'invented' is perhaps the ultimate theme in Winterson's work – her notion of the supernatural and her extreme passion for language are two pendants of that issue. And the division between science and literature is another.

In this study, I have looked at Winterson's treatment of science, and placed it against the background of late twentieth-century thinking about the relationship between literature and science. The way I have interpreted Winterson's work enables me to explain how different aspects of her worldview – religious, feminist, scientific, political, technological, and poetical – interconnect. I have *not* tried to perform a detailed search for biblical references nor to extensively annotate Winterson's textual borrowings from for instance Romantic or Modernist poets. This study does not pretend to uncover the intertextual references in Winterson's work. Instead, I asked myself how a writer like Winterson, who has often been likened to the magical-realists, contributes and perhaps intervenes in debates shaped mainly by philosophers and scientists: the famous (or infamous) 'two cultures' discussion, and the (later) so-called 'Science Wars'. Strikingly enough, although Winterson's fiction reflects the main standpoints within the Science Wars, in the end she breaks out of this frame through the visionary nature of her work. The fact that she chooses for an emotional worldview without any solid ground or without any stable system, proves that she, in the end, defends a literary worldview as opposed to a philosophical or scientific one. Art can be 'simply' visionary and 'just' evocative; it needs no ultimate explication of, or justification for, its ideas.



1

SCIENCE AND LITERATURE

Anyone interested in the contrasts and synergies between the sciences and the humanities should read Jeanette Winterson's work. In what follows I address the question what her writing could mean in a society where we experience a constant tension between the sciences and the humanities, not only in the academy but also in a broader cultural setting. What perspectives does Winterson add to this conflict, and how do her stories constitute a new position in the 'two cultures' discussion? Before addressing these questions and interpreting Winterson's work, I will outline the approach chosen to do so.

In this book, Winterson's novels and short stories will be interpreted from within the paradigm called 'science and literature'. This paradigm rests on the insight that the relationships between the disciplines and scholarly specialisms cannot be characterised as merely hostile, but that various forms of creative interaction occur as well, ranging from influence to symbiosis. At the same time, the researchers inside this paradigm examine the concepts that shape the relationships between the disciplines; they look at concepts such as beauty, truth and fictionality. As this paradigm amounts to a wide perspective, involving many disciplines and specialisms, we can find numerous fascinating fields of study within the paradigm, varying from 'sculpture and chaos theory' and 'genetics and modern dance' to 'cybernetics and African weaving patterns'. In this chapter I am providing a basic outline of positions inside the paradigm – positions that illustrate the main issues at stake. In this outline, I have restricted myself to those positions that entail issues relevant for my interpretation of Winterson's literary work. I have therefore only included those analysts and philosophers that discuss the methodology of 'science and literature', and that occupy themselves with certain branches of physics and medicine. Furthermore, I have concentrated on the ideas formulated in the eighties and nineties of the twentieth century – the time in which Winterson wrote her first cycle of novels.

Tensions and Vistas

Transgressing disciplinary boundaries (...) [is] a subversive undertaking since it is likely to violate the sanctuaries of accepted ways of perceiving. Among the most fortified boundaries have been those between the natural sciences and the humanities. (Greenberg 1990:1)

Western culture has been shaped by a tension between at least two subcultures: the humanities on the one hand and the natural sciences and technology on the other. However, in the intellectual history of the west, the study of nature was not always opposed to the poetic. In *Science and Poetry*, John Neubauer describes this premodern unity:

The Renaissance introduced conceptually and methodologically new approaches to nature, but the wealth of nature-observations in the 14th and 15th centuries became part of an eclectic worldview with largely traditional concepts and authorities. (...) Renaissance science aimed at a reading of nature's signs in terms of a universal system of similitudes. Its aim was to bring to light a system of resemblances in which words and things carried the same weight of evidence. (...) The system of analogies that linked the microcosm to the macrocosm, the humors of the body to the four elements, and the Pythagorean cosmos to the harmony of the faculties was incorporated in the great medieval encyclopedias, which became a storehouse of poetry until the "breaking of the circle" (...). (Neubauer 1993:1121)

This "circle" was broken in the seventeenth century, when the existing unity was challenged by the kind of systematic, rational analysis of the universe that gradually came to achieve the prestige it now enjoys. The eclectic philosophy divided into a spirit of progressivist natural philosophy on the one hand and a classicist aesthetics on the other (cf. Hankins 1985:8). At that point a tension made itself felt – a tension that we still feel today.

It cannot be denied that the development of rationalism has brought the western world longevity and increased prosperity. At the same time, however, this society has been confronted with new and severe problems that arise from the growing influence of science and technology. All this time, writers, just like sociologists, philosophers, politicians, journalists, filmmakers, artists and musicians, have evaluated the role of science in our culture. Opinions differ strongly. There are four main attitudes. We can distinguish those who are thrilled by the new vistas opened up by science and technology. Think of the Futurists

at the beginning of the twentieth century that celebrated the sounds and speed of motorised transport; or consider how Edwin A. Abbott absorbed the mathematics of his time and came up with strikingly early notions of spacetime and the fourth dimension, in *Flatland, A Romance of Many Dimensions*. Some writers have a more complex attitude. In *White Noise*, Don DeLillo subtly celebrates the pervasive role of technology like radio, television, cash dispensers and automobiles in contemporary American culture, while at the same time signalling the psychological dependence on drugs and the terror of accidents in the chemical industry. Some writers are very sceptical: Marguerite Duras, in *Hiroshima mon amour*, contemplates the allied bombing of Hiroshima and Nagasaki, and critically examines the social effects of new military technology, the atom bomb, and the nuclear age. Other writers, finally, assume an ignorant attitude towards science. Whether they are silent, simply due to a lack of opinion, or whether their attitude in fact embodies the strongest disapproval of science's presence, is hard to say. A question many people have raised, C.P. Snow most famously among them, is whether science and literature have grown so apart that they have developed into 'two cultures', without mutual resemblance or influence. All in all, we can see that literary and philosophical contributions to discussions about science and culture range from the outright celebration of new theories, ideas, discoveries, techniques and artefacts to utter technophobia and scepticism.

Paradoxically, the very existence of artistic condemnations of science demonstrates how literary and scientific developments are entwined within culture as a whole. Even when an author criticises science, culture and science jointly exist in the mind of the author and therefore in his texts. As George Levine says: "science and literature are combined in the texture of individual lives, (...) the ideologies of science help define at any given moment what constitutes imagination, what lies beyond the margins of social acceptability" (Levine 1987:27). For example, even though *Frankenstein or the Modern Prometheus* expresses the need for emotion and not the use of pure reason alone, it is pioneering experiments with the phenomenon of electricity in Victorian England that inspired Mary Shelley to write her novel. Victor Frankenstein and his monster could not have been conceived if their creator had not been acquainted with the state of natural philosophy at the time, or without at least a faint awareness of the new phenomenon called 'galvanism'. That Mary Shelley was more than faintly aware of the proceedings of natural philosophy we know from her autobiographical writings, testifying to her presence at discussions

between Lord Byron and her husband Percy Shelley, who “talked of the experiments of Dr. Darwin” (Shelley 1994:x). In addition, the choice of words in *Frankenstein* reflects the emerging awareness of the presence of electricity inside the human body. We see this, for instance, when the protagonist, dr. Frankenstein, describes the way he worked in his laboratory to create his monster: “I collected the instruments of life around me, that I might infuse a *spark of being* into the lifeless thing that lay at my feet” [Italics A.E.]. The phrase “spark of being” reveals the narrator’s fascination with that appearance of ‘the element of fire’ – electricity – in the generation of post-mortem movement of the muscles. So this book, which eventually turns into a literary rejection of a scientific and technological mentality, can at the same time be seen as a text bridging the gap between the two cultures. Even in cases like this, science and technology are not in the least sealed off from artistic creativity.

Fictional appropriations and artistic reconfigurations of scientific material not only evaluate the progress of science; they might even, when fed back into the scientific community, contribute to scientific developments themselves, namely as test cases for the formulation of hypotheses and thought experiments. Fictional scenarios of possible scientific developments may shape the imagination of scientists and pave the way for new questions, practices and hypotheses. Science fiction, as we all know, rests on whole pillars of scientific invention. However, science fiction is not just a realistic genre. Science fiction would not be science fiction if it did not also come up with futuristic inventions. For instance, *Star Trek* is realistic or mimetic in its use of the idea of black holes. At the same time, *Star Trek* also came up with its own inventions such as ‘warp-speed’ and ‘inertial dampers’ (Krauss 1995:3-9). The writers of this series have tried to build a coherent story, with ingredients that have a logical unity. In doing so, writers devise solutions to the problems posed by their narratives. A science fiction writer, therefore, may explore questions at the forefront of astronomy much more freely than astronomers can. Thus, fictional writers can co-determine the direction in which science is heading. A striking example of how advanced science fiction can be, is the discovery that Peter Tolstoy invented the laser before the scientists did. He used an older description of a nearly forgotten machine called the hyperboloid, to come up with a fictional machine that produced an intensified sort of light much like laser. Scientists invented real laser only much later. Such are Maria and Elena Kozyreva’s findings in their article “H.G. Wells and A.K. Tolstoy” (Schenkel and Welz 1999). Another example of possible progressive imagining in science fiction is *Jurassic Park* and its sequel *The*

Lost World. Its writers explore the idea that the genetic information in the blood of dinosaurs preserved in solidified amber could be reproduced in order to revive these creatures in our present age. Who knows, this idea might exchange its fictional status for a scientific one in the near future.

Attitudes in the literary field (and also in the arts and the humanities in general) towards science can be manifold. One specific kind of relationship is that between precursor and follower, or initiator and imitator. In recent years, researchers in the field of 'science and literature' have come to accept that science and literature adopt these roles alternatively. It would be a very limited perspective, therefore, to look upon the arts solely as science's disciples. Similarly, it is felt that developments in science never occur completely autonomously either. In the sections below, I will provide an outline of these theoretical points of view as they emerged in the field of 'science and literature' in the past decades.

Two Cultures

A phrase that keeps returning in public debates about disciplinary difference is 'the two cultures'. Before looking at intersections between the sciences and the humanities, it is useful to examine the history of their separation, and in particular twentieth-century disciplinarian defenses of the supposed existence of a gap between the two cultures.

Disciplinarians believe that the knowledge produced in a certain specialist field can only be understood from within that group and believe that this is at the root of the estrangement between the 'two cultures'. This phrase emerged from C.P. Snow's 1959 lecture "The Two Cultures and the Scientific Revolution" (Snow 1998). Snow presented an antagonistic model of the relationship between the two cultural domains in question. He said that there exists "between the two a gulf of mutual incomprehension, (...) hostility and dislike, but most of all lack of understanding" (Snow 1998:4). He thought it impossible that scientists on the one hand and artists and people working in the humanities on the other could assimilate each other's ideas: these two groups held irreconcilable worldviews. He argued, furthermore, that incomprehension leads towards hostility:

It is obvious that between the two, as one moves through intellectual society from the physicists to the literary intellectuals, there are all kinds of tones of feeling on the way. But I believe the pole of total

incomprehension of science radiates its influence on all the rest. That total incomprehension gives, much more pervasively than we realise, living in it, an unscientific flavour to the whole 'traditional' culture, and that unscientific flavour is often, much more than we admit, on the point of turning anti-scientific. (Snow 1998:10-11)

But Snow was of the opinion that the widening gap between science and literature was alarming. He believed that misunderstanding between scientists and scholars in the humanities was a major handicap when trying to solve the world's problems. "The clashing point of two subjects, two disciplines, two cultures – of two galaxies, so far as it goes – ought to produce creative chances" (Snow 1998:16). Some thinkers, however, do not regret the existence of a gap between the two "galaxies". In today's academic world, disciplinary rigour still exists. Alan Sokal and Jean Bricmont's attack upon the French theorists Jacques Derrida, Julia Kristeva, Jean-François Lyotard and others, made it clear that disciplinary austerity lives on (Sokal and Bricmont 1997):

Sokal and Bricmont draw out the many contortions and falsifications of mathematical concepts made by Kristeva in the course of her article. (...) The assembled intellectuals utilise proven and valued concepts from natural science in a spurious way in order to prop up controversial theories in the fields of sociology, literary criticism, linguistics, cultural studies and a number of other disciplines. (Steinberg 2000)

Like Sokal and Bricmont, I.A. Richards believed that the sciences and the humanities should not be reconciled. In his *Poetries and Sciences*, the 1970 re-edition of his 1926 [1935] *Science and Poetry* – with some extra chapters – he claimed that poetry had continued virtually unchanged during the whole of human civilisation, whereas science had developed enormously. This view hardly does justice to poetry – a form of knowledge with specific epistemological value. Richards goes on to mention that Keats thought that the inevitable effect of the advance of science would be the destruction of poetry. He argues that, in its use of words, poetry is the reverse of science. Poetry tries to understand the structure of experience. In poetic thinking very precise thoughts occur, but the poet picks his words deliberately so as to include all kinds of meanings. The scientist would rather exclude all meanings but one (Richards 1970:32). Richards thus complains that the poet is not writing as a scientist. Richards believes in a gap between the two cultures not only on the basis of their linguistic differences but also due to the different fields they pay attention to. According to him, facts and their

description and explanation should be left to the sciences (the intellectual stream). The emotions are the domain of literature (the emotional stream). Literary language and scientific language are very different from each other because literary language lacks descriptive, referential and cognitive uses. Literary language does not aim to utter truthful descriptions, but to contribute to the reader's emotions in that it is able to bring about a complex balance and harmony between otherwise divergent and incompatible emotive reactions. Literature, Richards feels, temporarily balances the otherwise chaotic flow of feelings.

Richards' position can be criticised in many different ways. I would like to argue against his ideas about the relationship between world, cognition and language using George Lakoff and Mark Johnson's widely appreciated book, *Metaphors We Live by* (1980). This work uncovered the presence of a vast field of metaphorical activity in the normal, everyday use of language. Lakoff and Johnson focused on the fact that apart from the conscious, artistic use of metaphors in poetry, people habitually use all kinds of metaphors without being aware of it, and in very creative ways, too. Metaphor is thus not an exclusive constituent of literary language. As Roald Hoffmann (Hoffmann 1995) and Gillian Beer (Beer 1983) have shown, science uses metaphors too. Scientific language and literary language are in many ways very similar, both working in the same cognitive field. The language of science certainly appeals to many emotions, and both poets and scientists are seeking for linguistic relations between (true) knowledge and aesthetics. The Dutch poet Leo Vroman, for instance, researches the cognitive interconnections between biochemistry and poetic language (cf. Vroman 1976), while chemists like Roald Hoffman are looking for the boundaries between truth and untruth in different linguistic modes used to describe molecular structures (cf. Hoffman 1995). Science can inspire literary authors, and vice versa.

Richards' ideas may have become outdated, but similar ideas still mirror the disciplinary organisation of many universities. It is a sensitivity towards these old disciplinary structures, a sense of limitation, that accompanies the practice of much 'science and literature' research. In interdisciplinary fields, people are fighting the disciplinarian spirit that refuses to yield. The proponents of a total separation are still strong, and among them figure educational institutions and publishers. Not only 'science and literature' researchers make attempts at reconciliation; New Age writers, too, reject disciplinarian separations and the power these represent and reinforce. *The Aquarian Conspiracy* (Ferguson 1980), a

book that proved to be one of the main catalysts of New Age movement, contains a chapter on science, where it is said that:

The humanities-oriented sheep and the science-oriented goats are herded into their respective pens; at many universities, the science and humanities centers are blocks apart. Most students sidestep any science beyond the minimum required hours; the science majors are funnelled into their specialities, subspecialties, and microspecialties. By graduate school, they can scarcely communicate with each other. (Ferguson 1980:146)

Beyond this complaint about the present lack of communication and synthesis, *The Aquarian Conspiracy* aims to build a bridge between science and what has come to be seen as 'other' forms of knowing. New Age is deeply concerned with science, because they are seeking to create a new cosmology and seek to ally themselves with those who rule cosmology now – the scientists. A new religion, they feel, should not be turning its back upon scientific theory but rather put to good use the latter's magnificent aura. Those who are seeking to "explore the connections between science and spirituality" (Sheldrake and Fox 1997:12) at the same time complain about the present incompatibility of science and a more human quality:

In thinking about the relation of God and nature, much depends on how we conceive of nature. A change in our view of nature is currently coming about through science. We are living through a major period of change in science, a paradigm shift, from the idea of nature as inanimate and mechanical to a new understanding of nature as organic and alive. (Sheldrake and Fox 1997:13)

It turns out there are two traditions or types of science that these New Age thinkers are concerned with: they fight the mechanical tradition and embrace the magical tradition in science. They combat the spirit of the Enlightenment which was aimed at epistemological and physical control over nature through the method of dissection, and welcome the magical spirit of the Renaissance and of Romanticism which implies a unification of senses and spheres (cf. page 61).

This brings us back to the contemporary defenders of 'the two cultures'. New Age only endorses the idea that there are two cultures when it speaks of mechanist and highly specialised science. New Age considers this type of science as an estrangement from the human spirit (cf. Ferguson 1980). The new physics, on the contrary, is taken up – not only by the New Age but also by

philosophers of science (cf. Collini in Snow 1998) – as akin to the humanities and their specific epistemology. Towards the end of the twentieth century, we see New Age writers, literary authors and ‘science and literature’ researchers of all kinds discover that both separation and unification, ‘two cultures’ and ‘one culture’, exist simultaneously. Perhaps we can shed some light on this paradox by regarding the late twentieth century as a door that opens towards another era: we still feel the presence of two competing cultures, while we are heading for unification.

Understanding Science

Do literary authors actually understand the scientific theories they refer to? This question readily comes to mind when talking of the interest that literary authors bring to bear upon scientific issues. Do they read scientific articles? Did they receive an education in the branch of science they write about? Do they understand mathematical formulas, diagrams, and models? If they do not, should we question the legitimacy of their participation in cultural debates about the development of science? Is it justified to vent scientific ideas in novels and poems without a complete understanding of these ideas? This issue is still quite controversial.

First of all, this type of question is often based on several territorial presuppositions: firstly, that thanks to their methodological rigour only professional scientists can produce truthful knowledge of the world around us; secondly, that the laboratory is a separate world, isolated from the cultural world and that scientific knowledge can therefore be distinguished from fiction and values; and thirdly, that the world of truth is only accessible through the privileged doors of education.

Concerning the first presupposition it is interesting to look at sceptic societies that exist all over the world, societies like the British Association for Skeptical Inquiry (ASKE), the Society for Sensible Explanations in Seattle, the Philadelphia Association for Critical Thinking, and so forth. Sceptical organisations aim to critically examine assertions that are out of the ordinary. They maintain that most claims are not based on solid evidence and that they will prove to be untrue when tested. Sceptics focus on the border between science and ‘pseudo-science’ and are proud to unmask impostors. They maintain that strange phenomena can be explained logically, and are interested in the origins of ill-founded beliefs. They strongly believe common sense is the best weapon to combat dangerous fictions. The strength of their conviction results in a

dismissive attitude that discourages anyone outside science to look at topics that are thought to be the prerogative of scientists from a different perspective. The first presupposition mentioned above, then, is a potent one: all around the world, sceptics actively guard the boundaries between the disciplines.

Bruno Latour convincingly undermines the second notion in *We Have Never Been Modern*. The neat categorising of epistemic systems that characterises and constitutes what he calls 'the modern project' is blown away in the twenty minutes it takes to read our daily newspaper. In this small timespan we witness the multiplication of all the realms of "science, politics, economy, law, religion, technology, fiction" (Latour 1993:2). According to Latour, our contemporary society is one big, buzzing confusion of mixed-up affairs. Still, he says, our culture – like the newspaper – works with the *appearance* of categorical order because people experience that order as peaceful. Academic activities are separated into small specialisms and departments, and "analysts, thinkers, journalists and decision-makers" (Latour 1993:2) split up society's hybrid mixture into neat compartments.

The third notion has been examined by John Limon. He explains that one of the differences between science and literature is a discrepancy between discipline and professionalism. Scientists might object to 'literary interference' with their work by pointing out that anyone who wants to publish results achieved in their discipline has to meet with the high standards set by authoritative educational institutions. In literature, the quality of a publication is to some extent guarded by editors and critics, but no one will ask a writer for his or her qualifications and diplomas. The difference may be explained on the basis of the degree in which each discourse appeals to a certain level of truth. Physics explains the way in which the world is put together – which requires the highest degree of intellectual capacity, while literature is looked upon as merely seeking to enchant, thus making it less relevant to question the sources of their knowledge. It is only when literature touches the highly esteemed and protected realm of science that (the absence of) a scientific background becomes an issue.

When writers deal with science – regardless whether they have had a training in the particular scientific field or not – it is often assumed that they do so because they have been enchanted by particular ideas in such a way that their writings are influenced by it. We should be aware, however, that 'influence' is only one of many possible relationships between science and literature. John Limon also lists some other possible relationships between science and literature: "symmetries, homologies, influences, antagonisms, skews" (Limon 1990: xii).

The key issue is, whether or not complete understanding of this kind of material is indeed required. One might worry that science is misinterpreted, misrepresented and used in inappropriate contexts, but in all probability, this will not produce any adverse effects. In cases where the influence from science on a text cannot be doubted, the material that literary authors write about has been interpreted and taken out of its original context. The scientific ideas that these writers are incorporating can no longer be confused with the science that originally captured their imagination. As John Limon writes:

But science is never absorbed by writers, it is always co-opted; it serves as a source either of objective correlatives or of solutions to their own dilemmas. (Limon 1990:24)

and

A writer with a personal, aesthetic, political, or religious problem is sure to find at least one version of science that responds to it, serves as a straw man for it, settles it, or, more likely, dignifies it, seems to give the dilemma a philosophical point. (Limon 1990:25)

But do appropriations, misreadings of science's barren knowledge with the goal to 'fertilise' it in a fictional setting, in any way dethrone the scientist? Is (mis-)appropriation a blemish on the intellectual abilities of the literary author? Hardly so. Yet this is the very reason literary authors are sometimes accused of 'disciplinary trespassing into private property'. But why do we dread misappropriation? Or, to get back to Latour's point: is it not a denial of our culture's hybridity to keep on defending these borders and maintaining artificial separations between disciplines?

The Influence Model

(Mis-)appropriation presupposes influence, in this case a flow of ideas from science to literature. The history of academic debate on this topic shows how the notion of influence has been under attack for many years and indeed still is. I would like to argue, however, that this notion is still a useful one.

Theories developed in non-literary discourses, or in those discourses that position themselves as the very opposite of literature (for instance: theoretical physics), often influence literary writers. George Rousseau, in "Literature and Science: The State of the Field" (Rousseau 1978), describes how academics quarrelled over this principle in the nineteen-seventies, quarrels that mainly

concerned methodology. One of the pioneers of 'science and literature', Marjorie Hope Nicolson, implicitly started from the assumption that poets are simply influenced by the intellectual vanguard of scientists, whose ideas they then either beautifully render or strongly oppose. Nicolson's work on science and literature presupposes a one-way influence of science on literature. In *Newton Demands the Muse* (Nicolson 1946), Nicolson traces Enlightenment and Romantic receptions of Newton's *Opticks* and shows that some poets, like Thomson, praised Newton's findings, while others, like Blake, damned Newton's method. Implicit in her description is the idea that literary authors are merely at the receiving end of the relationship with the scientific discourse.

Nicolson's work did not escape criticism: Michel Foucault severely attacked it in his *L'archéologie du savoir* (Foucault 1969). Her insights, he argued, were based on too narrow a concept of influence. It assumed an influence in one direction only: from science to literature. In this way, it subscribed to the main claim of positivism: that science goes forth in its heroic search for truth, autonomously generating concepts and theories, ungoverned by any 'soft' cultural influence, and that literature is always one step behind, adopting the concepts and theories created by scientists. This is now called 'the trickle-down model'. It is regarded as underestimating the imaginative abilities of creative writers and has not survived the critique of Michel Foucault, Thomas Kuhn and others. We already saw how John Limon suggested a way out of this pitfall (the difference between absorbing, or adopting, and co-opting). Later, I will describe a comparable adjustment to the trickle-down model by Wolf Lepenies.

Now, well into the third millennium, another phase in the development of methodology in science and literature studies announces itself: the flourishing of critical pluralism. Once the influence model lost ground, the field rapidly diversified. All sorts of methodologies and philosophies sprang up. Traditional literary historians, historians of science, philosophers of science, biographers, structuralists, Marxists, Latourians, field theorists, people studying metaphor, neo-Freudians, evolutionists, deconstructivists, cynics as well as enthusiasts about cybernetics and information technology, 'trekkies' and other science fiction addicts, and feminists of all kinds ventured into the field. In the article mentioned before, George Rousseau argues that, due to the "uncontrolled" diversification within the humanities, 'science and literature' will never become an acknowledged field of research (Rousseau 1978:590). The reason for this, he feels, is that the notion of influence still is the only valid way to study the interconnections between science and literature, whereas everyone at the same

time agrees that 'influence' is rightly dismissed by the structuralists on behalf of its reductionist nature. Rousseau therefore considers this explosion of methods as detrimental to the field (Rousseau 1978:588).

Now, more than two decades later, in the field of science and literature methodological pluralism is continuing strong. And the field is still very much alive. It is easy to be very derogatory about 'influence', but the question is, must we really do away with the entire notion of influence? *Can* we do without it? As Lies Wesseling notes in her "Nosferatu: Over Literatuur, Wetenschap en Historische Traditie" (Wesseling 1996) [Nosferatu: On Literature, Science and Historical Tradition, A.E.], writings in science and literature studies often let out a theoretical blare of trumpets against the influence model while at the same time they continue to make use of it. Perhaps influence is simply one of the ways in which science and literature *are* interacting and perhaps this explains the impossibility of leaving behind this concept for good.

There are ways to work around the reductionist nature of the model. More refined revisions of the model have indeed emerged, revisions that prove to be quite fruitful. Wolf Lepenies' model of influence is one of these. In "Der Wissenschaftler als Autor" (Lepenies 1978), "Transformation and Storage of Scientific Traditions in Literature" (Lepenies 1983), and "Über den Krieg der Wissenschaften und der Literatur" (Lepenies 1986), Lepenies conceives of the interaction between different discourses as a traffic of ideas between separate storehouses. He thinks that a description of interdisciplinary relations can best be rendered through the concept of storage. In his theory of storage he uses three categories: storehouses, floors and rooms. A storehouse represents a collection of related disciplines, while a floor represents one scientific discipline, one literary genre or one branch of art. A room stands for a specialism within a discipline, genre or branch.

Lepenies distinguishes three storehouses: the storehouse of science, the storehouse of literature and the storehouse of art. The dynamic processes can be ordered, first of all by distinguishing between inner-scientific storage and extra-scientific storage: there are processes within one specific building (inner) and processes in which more buildings are involved simultaneously (extra). Secondly, we see intra-disciplinary and interdisciplinary storage. 'Intra-disciplinary' refers to storage of ideas on one floor. An example of the transport of an idea between two rooms on the same floor is the exchange of ideas about interpretation between deconstructivists and hermeneutics. A transportation of the concept of evolution from biology to social science, a movement of the notion of relativity

from strange literary notions of time to the new physics, or simply the transportation of terminology such as the word 'quark' from literary modernism to quantum physics can be taken as examples of 'interdisciplinary storage'.

To ensure a good understanding of the storage model, several remarks must be made. To begin with, storage is always a three-part phenomenon. There is a place of origin, a storage place and a new environment. Secondly, storage is most likely combined with the transformation of the original concept. Thirdly, the concept of storage is devised to describe and analyse relationships between disciplines. Fourthly, remembrance and oblivion are part of the storage process. Fifthly, storage, transformation and revival are most important for periods in which disciplines are forced or inclined to remember, to recover or to invent their disciplinary past.

In this way, Lepenies provides us with a way out of the trickle-down model; he shows that scientific traditions can be stored and transformed in literature and that they can be re-invoked into science. Literature thus not only follows and receives; it also transforms and changes. So, the storehouse of literature is considered to have its own historical development, to be able to formulate a self-supporting historical problem-solving discourse, and to have a profound influence on science in certain debates. This idea does not alter Nicolson's trickle-down model in a revolutionary way, but it does present literature as an independent epistemic system.

Lepenies signals, however, that when scientific traditions are stored and transformed in literature and subsequently re-invoked from the literary field into science, this process gives science a bad reputation. For a nineteenth-century scientist, the abandonment of literary discourse was a prerequisite to protect his good reputation. For this reason, emerging disciplines such as sociology and psychology rejected their literary past and imitated the disciplines of a 'higher' order, the natural sciences, to achieve academic respectability. Lepenies signals that whenever literature is used as a storehouse from which to take ideas, the scientific project is doomed to fail. He shows for instance that when Freud refused to conceal the literary history of psychology, he was denied access to the university. His theory of psychoanalysis did not get much academic respect at the time, due to his refusal to claim (as experimental psychology did) that his work belonged to the natural sciences. Although the storage of scientific ideas in literature obviously has its handicaps, Lepenies pleads for a recognition of the important role literature can play in scientific development: "It might be useful, and not only for the sociological imagination, to remember a literary past for the

better understanding of a sometimes illiterate present” (Lepenies 1983:63). So, we see that Lepenies is able to use the concept of influence in a more refined methodology.

Be that as it may, Lepenies does not succeed in shaking off the presupposition that “scientific problem-situations” are formulated by science first, and subsequently find their way into literature. He may refine the model and redirect the arrow of influence, but in his model too, literature never comes up with anything really new. Can we find examples of literary authors who do predict or even inspire scientific developments? John Tyndall certainly appreciated the importance of the literary mind to science:

It is thought by some that natural science has a deadening influence on the imagination... But the experience of the last hour must, I think, have convinced you, that the study of natural sciences goes hand in hand with the culture of the imagination. Throughout the greater part of this discourse we have been sustained by this faculty. We have been picturing atoms and molecules and vibrations and waves which eye has never seen nor ear heard, and which can only be discerned by the exercise of imagination. (Tyndall 1865:60-61)

Likewise, Gillian Beer sees literary structures of thought – narrative patterns, myths and metaphors – moving to and fro between the literary and the scientific domain, “though not without frequent creative misprision” (Beer 1983:7). In *Darwin’s Plots*, Beer describes how scientists in the nineteenth century drew openly upon literary, historical and philosophical material. She mentions amongst others Lyell, who referred to Ovid’s *Metamorphoses* in his account of proto-geology. She holds that in the nineteenth century, as opposed to today, there was nothing hermetic or exclusive about the writings of scientists. Scientists and non-scientists alike shared a literary, non-mathematical discourse; they shared a common language with other educated readers. Nowadays, scientific knowledge is presented as theoretical rather than discursive, and tends to reach the wider public merely by processes of extrapolation and translation. In the nineteenth century, Beer argues, scientists did not yet have the presentday aura of a ‘priestly class,’ as opposed to the herd of common ‘laymen’. Beer believes that the humanities influence science *and vice versa*. She mentions for instance that evolutionary theory had particular implications for narrative and for the composition of fiction. She argues that Darwinian theory “will not resolve to a single significance nor yield a single pattern” (Beer 1983:9) and that it does not

“allow either interruption or conclusion” (Beer 1983:11). These features, she argues, seeped into a broader cultural discourse and triggered new forms of narrative in literature and philosophy.

Beer describes the two-way traffic in a very convincing way. In her second chapter of *Darwin's Plots*, “Fit and Misfitting: Antropomorphism and the Natural Order”, she shows how Darwin used words and ideas that circulated in society, for instance in the poems of the Romantics. Beer provides us with an example. Wordsworth's line “the external world is fitted to the mind” from “The Prospectus”, she claims, expresses “notions of just proportions, exact craftsmanship, sexual harmony, [and] healthful mutuality.” Also, Beer argues, “the vocabulary of biological science depended on unregarded metaphors drawn from human tools and mechanisms.” According to Beer, Darwin's *Origin of Species* was a polemical book, designed to persuade and convince (Beer 1983:52), and drew deliberately on metaphors of selective breeding, avoiding creationist language (Ibid. 70). For the same purpose, Darwin chose to personify nature as female, placing himself in Ovid's tradition (Ibid. 71). Her historical analysis shows how literary authors take up scientific problem-situations as the basis of their literary work, and that scientific authors are immersed in cultural fields. It is only sane to conclude that influence works both ways and that the flow of ideas is too turbulent to speak of autonomous art or of autonomous science. An example of a book that recognises this and embraces the notion of ‘influence’ is J.A.V. Chapple's *Science and Literature in the Nineteenth Century*, which is based not only on the awareness that science functioned as an obvious source of inspiration but also leaves room for the possibility that literary writers “philosophically renew” scientific investigations (Chapple 1986:17).

Influence studies sometimes are necessary to map the traffic, to complete the picture. Many scholars have indeed done interesting and useful research on specific authors having been influenced by twentieth-century physics (Rubino 1983); (Hayles 1984); (Pearce 1985); (Bohnenkamp 1989); (Porush 1990); (Argyros 1990). Alexander Argyros, for instance, argues that

(...) deconstruction has extensively, if often implicitly, incorporated many of the principles of modern physics and mathematics. Such ideas as relativity, uncertainty, paradox, irony, undecidability, indeterminism, virtuality, and retroactive causality have seeped into the culture and have subsequently been adopted by the literary world, especially by the modernist, deconstructive and postmodernist critical perspectives. (Argyros 1990:34)

Meanwhile it has become justifiable to map interdisciplinary influences, as long as we bear in mind that the influence model is not the only viable model that can be used. If we could make a blueprint of the processes of the emergence and transportations of ideas within a particular period of time, we might see that there can be clear cases of influence from science to literature, such as in Mary Shelley's case, of influence from literary to scientific texts as was the case when for instance Milton's "Paradise Lost" influenced Charles Darwin (cf. Beer 1983:34-36), and that there can at the same time also be cases in which similar ideas emerge spontaneously and independently from each other in geographically and disciplinarily remote texts (cf. Hayles 1987). The relationship between the disciplines consists of all these processes taken together. I do feel, however, that researchers should be encouraged to study the influence of literature on science, because such a line of thought is seldomly pursued.

Deconstructing Difference

An approach that radically breaks with the notions of two cultures and of influence, is deconstructivism. Deconstructivism is a way of reading and interpreting initiated by Jacques Derrida that aims to find and unravel concepts that have served as axioms for intellectual movements, or as rules for thought. Deconstructivism casts suspicion on any construct that presents itself as unified, harmonious and overarching. Instead, it emphasises difference, complexity, and non-self-identity. A deconstructivist reading of a text, or a deconstructivist interpretation of philosophy generally tries to show how a seemingly unitary idea or concept (like 'woman' or 'science') contains different or opposing meanings within itself (cf. Allison 1973:xxxii). An important aspect of Derrida's reading praxis is the attempt to displace traditional oppositions of speech and writing – oppositions like 'science/literature' or 'man/woman'. The history of the field of 'science and literature' shows that researchers have become increasingly interested in deconstructing the opposition between the two cultures, which culminated in the view that the two epistemic systems are fundamentally identical.

This conception of deconstructivism echoes Thomas Kuhn's insight that science and literature cannot be categorically separated on account of a rigid distinction of fact versus value, objectivity versus subjectivity, or induction versus intuition. It reaches full fruition in Paul Feyerabend's *Against Method* (Feyerabend 1979[1975]), and borrows from Michel Foucault the central notion

of 'episteme' (*épistème*). But, as Catherine Goldstein asks in "Mathematics, Writing and the Visual Arts" (Goldstein 1999),

Why should we want to think that art and science, art and mathematics, are the same? It might seem at first a paradoxical way of speaking, because we have been for long accustomed on the one hand to perceive them as distinct and on the other to conceive it our duty, our hope, our dream, our task, to bring them closer together. (Goldstein 1999)

Similarly, in George Levine's article "Why Science isn't Literature: The Importance of Differences" we encounter the following rhetorical questions: "Does anyone really think science is literature? Do students in Physics 101 ever think they are really in Freshman Comp., or Intro. to Lit?" (Levine 1991:365). His earlier preface to *One Culture* (1987) aptly formulates an interesting task for constructivist researchers in the field: if they believe in similarity, what, then, constitutes their being different?

And even if we accept now the view that it [science] is merely one of many competing discourses, that it is no more grounded in a foundation of reality that gives special authority to its language than the language of literature, we need nevertheless to consider the nature of that discourse in great deal, to understand the ways in which the "and" genuinely connects science and literature, genuinely marks difference. (Levine 1987:24-25)

And if science and literature cannot be distinguished on the basis of their truth value, what differences is Levine thinking of?

The advantage of thinking in epistemes (Foucault 1969) or paradigms (Kuhn 1962) is that these concepts can help explain how literary authors can come up with certain ideas without any direct influence from the scientific realm at exactly the same time as, or even before, the emergence of similar or comparable scientific ideas: because writers and scientists find themselves in the same paradigm or episteme. Researchers working from the notions of paradigm or episteme hold that science is not a special, privileged culture, but just one among many contending narratives, representing reality largely in the same way as literature does. All domains in which knowledge is construed produce fictions, the fiction of the one domain not necessarily being any better than that produced by another. The emphasis on constructivism produced some useful methodological insights: to work in the field of science and literature does not mean just to find out whether or not the author has thoroughly understood

scientific theory (or whether the scientist absorbed his or her newspapers and novels well enough), nor to trace all kinds of ‘borrowings’ back to their source, but to reflect upon the ways in which literary writers develop ideas that are similar to scientific ideas emerging in the same historical period. Constructivism makes it possible to study the implications of subconscious intertextual practices for the communication between different domains. All in all, the main effect of deconstructivism in the field has been the erasure of the epistemological primacy of the sciences, thus setting free the literary narrative from disciplinary oppression.

Defining and Demarcating

The issue of constructing and deconstructing differences and boundaries between the two cultures immediately calls for reflection upon how to define the two categories. Defining the words ‘science’ and ‘literature’ is not easy, nor without hazard. History shows that the definitions researchers give to these terms reflect their personal philosophical standpoints. Matthew Arnold gives an expansive definition of literature: “All knowledge that reaches us through books is literature” (Arnold 1882). Northrop Frye’s definition is more restrictive. For Frye, literature is everything that has been written in the language of the imagination, i.e. by means of associative language – figures of speech like metaphor and simile (cf. Frye 1964:38). This position in fact resembles Richards’ in *Poetries and Sciences* (Richards 1970). At first much energy went into the definition of boundaries between science and literature, and thus in enumerating reasons why literature is not science and vice versa. The traditional positivist attitude results in the following oppositions: literature was thought to be subjective, contextual, emotive, imaginative, and fictional; whereas science ought to be objective, specialised, rational, factual, and truthful. Mary Hesse describes the assumptions that underlie the traditional conception of science as follows:

There is an external world which can in principle be exhaustively described in scientific language. The scientist, as both observer and language-user, can capture the external facts of the world in propositions that are true if they correspond to the facts and false if they do not. Science is ideally a linguistic system in which true propositions are in one-to-one relation to facts, including facts that are not directly observed because they involve hidden entities or properties, or past events or far distant events. These hidden events are described in theories, and theories can be inferred from observation, that is, the hidden explanatory

mechanism of the world can be discovered from what is open to observation. Man as scientist is regarded as standing apart from the world and able to experiment and theorize about it objectively and dispassionately. (Hesse as quoted in Levine 1987:15-16)

By analogy, we can construe a similar, though oppositional, definition of literature. The traditional conception of literature would then be that the poet describes ideas, feelings, dreams, hallucinations, fictions, and idiosyncratic experiences in poetic language. The author, as an extremely sensitive person, writes about these experiences in words that exploit ambiguous structures of meaning. The texts he or she produces cannot be true since they are the utterly personal expression of utterly personal experiences. The author cannot be separated from the things he perceives in the world, since he or she is emotionally involved in the subject.

It was Thomas Kuhn who first denied these differences. In his *The Structure of Scientific Revolutions* (Kuhn 1962), and later in *The Essential Tension* (Kuhn 1977), he denies that science proceeds by ever more accurate descriptions of the world external to the observer. If there are differences between science and literature at all, they cannot be found in oppositions such as objectivity versus subjectivity, imagination versus observation, or fiction versus fact. Since 1960, researchers exploring the relationship between science and the humanities have agreed that this relationship is not one of cognitive difference, as the above enumeration of differences would seem to indicate. On the contrary, they point to affinities and similarities. Contrary to Snow's belief in a huge gap dividing both cultures, or Richard's belief that poetry uses vague ideas while science sticks to precise descriptions, such scholars uphold the view that not only literature but also science function within culture at large, and that both are therefore for the greater part the result of parameters shaping culture as a whole. At the same time, scientific and literary language are equally rhetorical and metaphorical. Under the influence of Kuhn, the traditional positivist separation of science and literature has come under revision.

In "The Order of Discourse" (reprinted in Rice and Waugh 1996:239-251), Michel Foucault argues that in every society there exist mechanisms of control over the production of discourse. In western society, this control is exerted by means of three procedures of exclusion. First of all, there is *prohibition*: whether or not we are free to discuss a topic is determined by taboos, exclusive rights with regard to who can discuss the particular subject in question, and rules

of conduct. Especially in the fields of sexuality and politics prohibition is dominant. The second procedure of exclusion involves the opposition between *reason and madness*. Since the Middle Ages, the madman's word has been considered "null and void, having neither truth nor importance, worthless as evidence in law" (Foucault in Rice and Waugh, 1996:240). [His words] "were never recorded or listened to. No doctor before the end of the eighteenth century had ever thought of finding out what was said" (Foucault in Rice and Waugh 1996:240).

The relation between science and art reflects this opposition: science institutionalised itself as the exclusive domain of rational analysis and rational language. Art remained the domain of fiction, untruth, lies, nonsense and even madness. Many artists, with Vincent van Gogh and Friedrich Nietzsche as outstanding examples, were thought of as psychiatric cases.

Thirdly, Foucault holds that the opposition between *true and false* should be regarded as a mechanism of exclusion as well. He argues that the will to truth is rooted in institutional structures and that it exerts a power over other discourses. As a consequence, other discourses, such as literature and law, have tried for centuries to assume a mode of rationality to avoid exclusion. The will to truth is a machinery designed to exclude, a machinery hidden by what it produces, by what we perceive to be reality: an image of 'truth' that was only questioned by some.

Foucault names many other procedures that control and delimit discourse. For instance, in every society there is a constantly shifting hierarchy of narratives: there are those that vanish as soon as they have been pronounced, and there are those that have recurrent ritual functions. Foucault works towards the idea that the discipline is a principle of control over the production of discourse. The discipline fixes limits for discourse and formulates rules to preserve its identity. Another example is the rule upheld in many discourses that no one is allowed to enter the order of the discourse if he or she does not meet certain requirements, or if he or she is not qualified to do so. Science, education, literature, medicine, and the judiciary system all involve ritualisations of speech, qualifications and the fixing of roles for speaking subjects, the institution of doctrinal groups, and systems of subjection of and by discourse. Foucault contributes to the upheaval of epistemological hierarchy between science and literature. He dismantles science's claims to objectivity and stresses similarities between the two cultures. To him, science proceeds by means of rules and procedures, just like any other system, including the literary system.

Kuhn and Foucault gave birth to constructivism. This theory maintains that in science, what is regarded as a fact is actually determined in the light of a theoretical interpretation, i.e. facts are dependent on the theoretical framework of which they are a part. In science, theories are not models that match nature objectively. Rather, they are ways of seeing facts. Theories are not adequate reconstructions of nature but the glasses through which we look at nature. Furthermore, the language used by science is of necessity metaphorical and inexact. Science is determined by cultural developments. Its language is therefore, just like literary language, intrinsic to the linguistic practice of the paradigm. Finally, in science meanings are determined by the governing theory; meanings are understood because certain theories cohere rather than because they correspond with facts (cf. Levine 1987:16).

After Kuhn, the field of science and literature studies for a while was mainly preoccupied with the search for similarities between science and literature. Dennis Bohnenkamp, for instance, thinks that:

theories of physicists and literary fictions have much in common. Both posit hypothetical worlds. Both are judged at times by their degree of verisimilitude to what we regard as the real world. Some scientific hypotheses are valued to the degree that they can be verified, while fictions are frequently valued to the extent that they conform to a reader's experience of what is real. Both literary and scientific fictions can be esthetically pleasing; both can be disturbing. Much modern fiction is anti-realist as is much modern science [the new sciences, A.E.]. Both describe worlds that often defy the logic of common sense. Modern literature is often nothing like life, and quantum mechanics tells us that life, the universe, reality are nothing like we think they are. (Bohnenkamp 1989:20)

As Valerie Greenberg puts it:

The questions scientists ask and choose to pursue are no less products of a cultural context than those with which artists choose to deal. The terms 'subjective' and 'objective' have been re-examined, and we are learning to deal once again (as in earlier centuries) with science as one of many coequal discourses. (Greenberg 1989:49)

In the phase of 'science and literature' research described above, the search for differences and definitions seemed to have become irrelevant. Still, abandoning the epistemic hierarchy between the two cultures does not imply that the two are

identical. At this point, scholars such as Levine and Goldstein are trying to grasp the best of both worlds, refusing to make science and literature coincide totally, but also to refusing to distinguish them on epistemological grounds (cf. page 18). The distinction is no longer sought along epistemological lines, but rather with an eye to institutional and historical differences.

Pragmatic definitions of science and literature seem to offer the healthiest alternatives. Science will then be defined by practical, perhaps contingent characteristics, for instance as a type of knowledge based on the gathering of information with the aid of measurement instruments, as a praxis taking place in a laboratory or as a praxis in which the practitioners are trained to build up a stock of fact on the basis of a belief in the relative trustworthiness of measurement and the use of calculation. Scientists generally believe they work on the falsification of a theory. Literature would then be all writing that is staged as fictional. Literature is published by specific publishers and can be found in the bookstore under the heading 'literature', 'fiction', or 'poetry'. Literature is the content of a syllabus on literature, or the content of a literary journal. If one puts a text on neurology such as Oliver Sacks' *The Man who Mistook his Wife for a Hat*, or on biology like Charles Darwin's *The Origin of Species*, in the literary section, they become literary texts. Texts can therefore be scientific and literary at the same time. Some texts are more likely to end up in more than one category than others. Psychological texts, for instance, often appear to be disciplinarily hybrid.

A great number of books and articles aims to show the existence of similarities between science and literature. To look for instances in which science and literature run parallel, show analogies, consonances or correlations, does in fact mean that a belief in fixed categorical definitions of 'science' and 'literature' no longer exists in the field concerned. People want to investigate their interplay – and so the question of boundary is fading. One of the theorists responsible for shaping this type of research is N. Katherine Hayles. She explored the usefulness of concepts like the 'field' and the 'feedback cycle'. Writings by Greenberg, Bohnenkamp, Carl Rubino (Rubino 1983), James Curtis (Curtis 1983), and Richard Pearce (Pearce 1987) belong, with Hayles', in the constructivist camp. They all presuppose that science and literature are related activities, embedded in over-all cultural development. Their models are theoretically related to the works of Thomas Kuhn and Michel Foucault. As mentioned on page 18, they argue that in the history of art and science certain paradigms or epistemes can be found, and that within any such framework, the arts and the sciences are actually working on the same kind of problems.

Between 1984 and 1991, Hayles wrote three books in which she developed several models for the description of the relation between science and literature. In *The Cosmic Web* (Hayles 1984), Hayles designs and applies a model that refines the influence model by introducing the notion of the 'field' or 'cosmic web':

One of the many ideas that the field view revises is the notion of a one-way chain of reaction between the event labeled as the cause and that labeled the effect. Although I spoke earlier of the influence of the field view on modern literature, I do not mean to imply that the literature I discuss is caused by scientific field models. Rather, the literature is an imaginative response to complexities and ambiguities that are implicit in the models but that are often not explicitly recognized. Thus a comprehensive picture of the field concept is more likely to emerge from the literature and from science viewed together than from either one alone. In this sense literature is as much an influence on the scientific models as the models are on literature, for both affect our understanding of what the field concept means in its totality. (Hayles 1984:10)

Hayles believes that isomorphic characteristics can be discovered in various discourses since science and literature are both essentially involved in culture as a whole. Certain common characteristics can therefore be found in domains that appear to be quite dissimilar. Hayles singles out 'the field concept' as the structure shaping the revolution she believes we are witnessing. She examines its various manifestations in the models of physics and mathematics, the theories of the philosophy of science and linguistics, and the structure and strategies of literary texts. The field concept is construed from features from various isomorphic models, features that Hayles believes to be characteristic of twentieth-century thinking in general.

Most essential to the field concept is the notion that things are interconnected. The field view of reality pictures events and objects as belonging inextricably to the same field. The state of one thing within the field is changed by a change in the state of another thing. Things, people, events and language are inseparable; the world, science, and literature are functioning as one seamless web.

In the first chapter of *The Cosmic Web*, Hayles reviews the theories of a number of twentieth-century mathematicians and physicists: Gödel, Heisenberg, and Bohr. In the rest of the book, she demonstrates how similar ideas surface in the work of authors such as Pirsig, Lawrence, Nabokov, Borges and Pynchon. It is evident that she is not interested in the question whether these authors were

actually acquainted with developments in physics. She maintains that the independent appearance of the same idea in different disciplines proves that developments in the field are intricately wired up with movements within disciplines. In this way, she avoids Nicolson's pitfall of one-way causality.

In *Chaos Bound* (1990), Hayles has left quantum physics and relativity theory behind. These theories originated in the first half of the twentieth century. Chaos theory emerged in the second half of the century: "the paradigm of orderly disorder may well prove to be as important to the second half of the century as the field concept was to the first half" (Hayles 1990:xiii). *Chaos Bound* considers the relationship between disciplines engaging in chaos theory (nonlinear dynamics, irreversible thermodynamics, meteorology, and epidemiology) on the one hand and literature on the other. Chaos theory deals with the question whether or not one can make valid long-term predictions about the behaviour of complex nonlinear systems. In physics the complete connection between cause and effect in nature has been upheld for centuries. Until quite recently, one of the cornerstones of scientists' belief in progress was the philosophy of determinism. This philosophy assumes that, so long as one knows the initial conditions, it is possible to make accurate long-term predictions of physical systems. This led to scientific hubris – after all, soon, all conditions of our physical systems would be known and man would be able to predict and control the future. But chaos theory shows that the relationship between cause and effect is much more complex than was assumed – so complex that physical systems are inherently unpredictable. Together with the awareness of the uncertainty of measurement (quantum mechanics), this leads to the assumption that there must be dynamic instabilities inside every system. At the same time, chaos theory holds that these small scale instabilities can give rise to large scale ordered structures. These theories are also relevant to 'science and literature studies'. According to Katherine Hayles, concepts of chaotics do not merely exist in physical systems, but also in intellectual systems or fields. The use of a single word in a novel could have great effects on the development of physics, for instance. The model Hayles employs in *Chaos Bound* is actually quite similar to the one she proposes in *The Cosmic Web*, but *Chaos Bound* provides more concrete images that explain how the field is shaped, as the following quotations show:

Especially notable is the increased emphasis in *Chaos Bound* on locating science and literature within contemporary culture. The recurrent image

[and this is new, A.E.] I used to explain the complex interconnections of theory, technology, and culture is a feedback loop. (Hayles 1990:xiii)

Thus the feedback cycle connected theory with culture and culture with theory through the medium of technology. Literary texts and theories were also involved in this cycle, for they too were affected by technology at the same time that they were affecting it. It should be no surprise, then, that many of the presuppositions that underlie the literary texts are also embedded within the scientific models and theories of the period. (Hayles 1990:xiv)

In *Chaos and Order; Complex Dynamics in Literature and Science* (1991), the emphasis shifts from the idea of 'one culture' towards the structure of the feedback loop itself. Also, the subtitle of the book suggests that the model is assuming the form of a very energetic, turbulent movement:

The question of how such isomorphisms arise is not easily answered. Let me say at the outset, however, that I do *not* assume they are the result of direct influence between one site and another. In particular, I am not arguing that the science of chaos is the originary site from which chaotics emanates into the culture. Rather, both the literary and the scientific manifestations of chaotics are involved in feedback loops with the culture. They help to create the context that energizes the questions they ask; at the same time, they also ask questions energized by the context. (Hayles 1991:7)

Just like Katherine Hayles, George Levine believes that "developments in science are closely related to developments in the culture at large" (Levine 1987:24). In this sense, he advocates the study of similarities between science and literature. But he *also* wants to draw attention to their differences. Levine's main point in his introduction to *One Culture* is that the emergence of a new view of science, originating from the transition from realism to constructivism, encourages a richer and more complex reading of interchanges between discourses. "It is obvious", Levine says, "how this kind of analysis [constructivist, anti-realist, A.E.] moves into the literary fold, particularly because of some significant effects" such as the idea that the separation of subject and object – of observer and observed – is no longer valid. The observer cannot comment on the world objectively and dispassionately. Secondly, the observed world is infused with the consciousness of the observer and the constraints of that observer's culture. Thirdly, science's claim to authority over fact is

undermined through the destruction of the correspondence theory of truth. Science, just like poetry and fiction, achieves its status through internal coherence rather than because of any supposed correspondence to external reality. Fourthly, science does not involve a systematic and cumulative process of increasing knowledge, but rather engages the creative imagination. Finally, scientific language, just like literary language, is essentially metaphorical.

There are many more researchers who look for isomorphisms rather than differences. David Porush carries this position to its extreme. Though they are both published in the same volume of *Modern Language Studies*, David Porush's article "Eudoxical Discourse" (1990) and Alexander Argyros' "Deconstruction, Quantum Uncertainty, and the Place of Literature" form a great contrast. Whereas Argyros thinks that science develops notions such as indeterminacy and evolution, and that literature and criticism follow science's lead, Porush believes that we are now living in a *post*-postmodern time, and within a new paradigm that he labels "Eudoxical discourse" – named after Italo Calvino's "Eudoxia", a city where the world itself, human knowledge, fiction and metaphor are woven into a carpet – a single representational and self-reflexive epistemological method. Porush explains that, from a neurological point of view,

even the basic operations of the mind are not mechanical but metaphorical. Our goal is to go even further in this direction, to follow the route it implies to an entire epistemology based in metaphor, a Eudoxical discourse which assumes that the best empirical model we have of any phenomenon is metaphor itself. That is, in effect metaphor constitutes an alternative system of knowing, rivalling and surpassing the formal-logical discourse of science as it is presently constituted. (Porush 1990:50)

Attempts to reduce metaphor to formal, mathematical description have failed, according to Porush. According to him, the most potent discourses are not logical but metaphorical. This is an axiom of Eudoxical discourse.

Then he suggests something that I cannot completely agree with, namely that "the natural sciences have rid themselves of a conception of objective reality that implied that novelty and diversity had to be denied in the name of innumerable universal laws". To my mind, the natural sciences are not doing away with the existence of objective reality nor with their realist aims (to predict, to cure, to map) at all – they merely refuse to make 'grand' philosophical claims about reality and stick to explanations at a mathematical level. However, Porush

continues with an observation I can relate with: that the new physics has abandoned classical physics' traditional stance, involving the denial of instability and locality, notions that literature has always upheld. So, literature can

(...) lay claim to superior epistemological potency or at least to (...) the veracity of hyper-evolved discourse which reflects the time-bound, fluctuant, unstable growth of human activity and imaginings. (Porush 1990:55)

Thus, physics now incorporates aspects of reality such as the personal point of view, interpretation, the unconscious, and metaphoric creativity, that long since have been put forward by literature. This is another characteristic of Eudoxical discourse: statistical thermodynamics and chaos theory demonstrate that the personal and creative aspects of human discourse are not necessarily antagonists of the reality that scientists aim to describe. Science and literature are now both seen to express the irrational. Eudoxical discourse is self-reflexive, demonstrating and exemplifying its own principle, which means that metaphor is simultaneously a discursive and an epistemological method. In Porush's Eudoxical discourse, metaphors and deterministic formalisms become indistinguishable twins, or at least collaborators in the undetermined, complex and fertile process of describing our experience of reality.

In this way, David Porush attempts to show that the idea of the two cultures is steadily dissolving, and that the two cultures will be inextricably united in a new paradigm called "Eudoxical discourse". However, in the nineties, the Sokal Affair made clear that scientists are not ready to accept such interdisciplinary cross-breeding.

The Sokal Affair

The so-called *Sokal Affair* of 1996 and 1997 illustrates science's reluctance to accept anything like Porush's Eudoxical discourse. The physicist Alan Sokal wrote an article about the symbiosis of ideas in modern physics and postmodern philosophy, entitled "Transgressing the Boundaries: Towards a Transformative Hermeneutics of Quantum Gravity" (Sokal 1996). This article was deliberately larded with overly blunt conclusions and all-too-radical statements. Sokal submitted the article to *Social Text*, and it was accepted for publication. Later, in a short essay called "A Physicist Experiments With Cultural Studies", Sokal argued that it was ludicrous that such a bad article had been accepted by the editors of a journal of such stature. The article should never have been published,

he opined, but the clever use it made of the established terminology of science and literature studies, as well as the fact that it “flattered the editor’s ideological preconceptions” (Sokal 1997:1), made the editors of *Social Text* overlook its stupidities. The editors in question defended themselves by saying they asked Sokal to revise certain paragraphs and later excused his bluntness because he supposedly was not used to certain ways of writing in the humanities.

Sokal maintains that it was his aim to show what happens only too often in recent vogues within the humanities: the proliferation of nonsense and sloppy thinking, i.e. a way of thinking that denies the existence of objective realities, or admits their existence but downplays their practical relevance. However, we can also consider his deed as a defense against science studies’ interference with science. Sokal clearly has a problem with people who interpret scientific texts in a way that fits their political and social agenda. But if quantum mechanics can be used in a work of art or in a political manifesto – why not use it? I would like to argue for a certain *interpretive flexibility*. To a scientist, quantum mechanics might not raise philosophical questions at all; but what is the problem if researchers in science and literature studies see isomorphisms between specific scientific ideas and some philosophical ideas? Likewise, if a literary writer thinks that Einstein’s General Relativity Theory boils down to the insight that there are no objective values, he or she would not be respected in physics. But the question is, whether that is at all necessary or desirable in literary studies. In a public letter he wrote about the subject, Levine says that what Sokal’s hoax reveals is his anxiety as a scientist about his own empire of knowledge (Levine 1997). Sokal must fear the fact that the boundaries between these two heavily defended disciplines now begin to become blurred by interdisciplinary studies.

Jeanette Winterson, Science and Literature

How do the ideas about science and literature discussed above relate to the work of Jeanette Winterson? Anyone familiar with her writings must have recognised the anger towards the sciences they exude. Even so, readers will also recognise that Winterson aims to eventually erase the boundaries between science and literature. Her work suggests that magic, fairy tales, and science are merely different aspects of a single epistemology. Winterson’s world dismantles disciplinary categories and therefore breathes a deconstructivist position. The deconstructivist model will prove to be a valid context within which to analyse the function of scientific theories in Winterson’s stories, or her utopian and dystopian images bristling with both scientific and literary metaphors. However,

we will see that, although her work suggests that poets and scientists work on one and the same project, Winterson is not a full-blown deconstructivist. Deconstructivism entails a critique of binary concepts, that always involve a superior and an inferior concept. The actual deconstruction is effected in two stages: first, the hierarchy (in Winterson's case: male/female; science/literature; fact/fiction) must be inverted, so that the inferior concept will become the privileged one. Only then can one begin to conceive a conceptual domain that lies outside these oppositions. We will see that Winterson never fully reaches this second stage: her work only tentatively explores this new, post-hierarchical domain.

With this in mind, it is easier to understand that both the notion of 'two cultures' *and* the notion of 'one culture' figure in Jeanette Winterson's novels. In her fiction, the polarity of the two cultures continues to be emphasised, while at the same time an interpretation of the new sciences promises the emergence of 'one culture'.

From Jeanette Winterson's earliest publications onwards, traces of relativity theory and quantum mechanics have found their way into her fiction. Winterson appropriates these scientific ideas and transforms them in order to fit them to her own artistic, religious and political vision. Winterson is undoubtedly a receptor of popularised science. This study therefore partly rests on the influence and appropriation model. She reads newspapers and follows new developments in the field of science. She incorporates scientific ideas, phrases and theories into the literary realm. Yet, she incorporates them in a way that transcends disciplinary thinking. She discards all distinctions between true and false, fact and fiction, and displays a firm belief that scientific ideas – in fact all ideas – belong to the same amalgamous world of ideas. In her eyes, there is no hierarchical order as to the purity or the truth-value of ideas, no separating artistic from scientific ideas.

It is obvious that a mere study of Winterson's (ab-)use of science is a limited project. I do not deny that influence also flows from literature to science. However, such a study can not be done right now. Once the parallels between contemporary writers and the scientific field have become more clear, and the scientific field has moved on, we will be able to see the effects that Winterson's writing - and the writing of others - may have had. Only then can it be established whether, and if so how, contemporary literary ideas have had an effect upon the development of science.

Following Alan Sokal's reaction against philosophers 'tampering' with science, it would be very interesting to see how physicists or physicians would respond to literary appropriations of 'their knowledge'. So far, I have not found any publications by scientists expressing the (un)desirability of Winterson's appropriation and interpretation of the new physics, even though the occasional literary critic does find Winterson's use of scientific language disturbing from a stylistic point of view (Barnacle, 1997). Perhaps literary writers are not such a threat to the castle of science, as their work is regarded as 'mere' fiction. But Sokal's work and that of the aforementioned sceptic societies certainly are the embodiments of the hostile ghost that Winterson challenges.

Winterson's feelings towards science vary considerably. Although a fusion of science and literature eventually does come about in Winterson's novels, it is a marriage on her terms. Whereas she seems to argue that neither the literary nor the scientific can lay claim to superiority (as being more truthful, objective, or universal), she also voices the idea that the artistic domain has suffered from science's pretensions of superiority. Looking at the co-existence in Winterson's work of a critical evaluation of scientific practice and a condemnation of the attitude of scientists towards literary and philosophical discourses, we become aware that the notions of field and influence do not suffice to explain all the complications of Winterson's view. In Winterson's novels we recognise the frustration of a writer who feels her work will not be taken seriously because it belongs to the realm of literary tradition, a tradition that always has had to cope with an inferior cognitive status. In her books, science's exclusive strategies are experienced as an injustice. Therefore, we also want to keep an eye on Foucault's poststructuralist model that both posits the idea of the common episteme and provides an explanation for the antagonist feelings that surround science and literature.

Winterson's grudge is directed against the idea that scientific knowledge is considered to be important, life-saving, and serious, whereas literature is regarded as a marginal activity meant to ward off the boredom of a leisurely Sunday afternoon. She ironically says:

If, in the comfortable West, we have chosen to treat such energies [passionate artistic experience, A.E.] with scepticism and contempt, then so much the worse for us. Art is not a little bit of evolution that late-twentieth-century city dwellers can safely do without. Strictly, art does not belong to our evolutionary pattern at all. It has no biological necessity. (AO 20)

The frustration that Winterson expresses here can well be explained in the light of Michel Foucault's theory of the dominance of science over literature as explained above (cf. page 20). The relevance of Foucault's theory to Winterson's work is evident, as the power structures between discourses form a recurring theme in Winterson's writing. She knowingly violates the disciplinary order by appropriating scientific texts into her own – literary – discourse. This means to transport islands of truth into the sea of untruth, to equal reason with madness. In Foucault's terms, she can be considered as one of those people that dodge the will to truth. At the same time, she detests scientific discourse for always having excluded the literary from the stage where texts became audible, influential, and powerful. She bears a grudge against science's strong intellectual protectionism.

This is a grudge with a long history, as John Limon convincingly demonstrates in *The Place of Fiction in the Time of Science* (Limon 1990). His approach to the relationship between science and literature is unlike any other in the field. He disapproves of Foucault's idea that contemporaneous intellectual domains are merely linked together by a common episteme because it cannot explain why disciplinary antagonism is still widespread. He also dislikes activities that blur the boundaries between the two, such as rhetorical analyses of scientific texts. Naïve studies of influence, like those performed by Nicolson, do not find favour with him either. He does not share the belief that scientific ideas could move through different disciplines and remain unchanged. Nor can he accept literature as 'art for art's sake'. Limon resists the autonomy idea by pointing out that literature, unlike other disciplines, has not gone through any process of professionalisation. Literature, 'the most undisciplined of all disciplines', has no fortified boundaries in the form of educational demands, and is therefore open to many outside influences. In literature any topic can be discussed – also scientific issues. It hardly needs pointing out that Winterson agrees with Limon. She joins and crosses disciplines, disregarding all protectionism.

Limon urges us to pay attention to the historical divergences of the different disciplines. Unlike Michel Foucault and Katherine Hayles, Limon believes that science and literature do *not* proceed along parallel paths. Nor does literature obediently follow the developments in science. Instead, Limon argues, literature hampers science. To explain this strange behaviour, Limon argues, we need a kind of history that concentrates upon "the incompatibilities of the histories of disciplines". Literature is always set against science's unilinear progression, Limon thinks, because writers have been outmaneuvered by American culture "which institutionalised science's slash-and-burn approach to

history". In the nineteenth century, writers could only stand by and witness other disciplines acquire a professional status, while literature remained an activity for amateurs. Writers try to get their revenge by constantly hindering science's progress. Instead of embracing powerful scientific theories, writers sabotage them by putting their own feeling of the 'presentness of the past' against the linear idea of time of science. Readers of Jeanette Winterson's work will immediately recognise this. Progress is not something she is interested in: she incorporates textual ingredients from all kinds of historical periods, disregarding chronology.

Like Kuhn, Limon does not think the difference between science and literature is caused by oppositions such as observation versus imagination, fact versus fiction, or objective versus subjective. The principal difference, he feels, is that science, unlike art, continuously destroys its own past. A scientific revolution automatically implies the end of the theory that precedes because the latter now no longer explains natural phenomena in a satisfactory way. An aesthetic innovation is built upon, and in fact requires, the continued presence of its predecessors. There is no need to take old masters off the wall or to stop printing the literary classics.

At the beginning of this chapter, I discussed whether literary texts can adequately render scientific ideas. If we take Limon's point of view, this question is meaningless. When dragged into this 'most undisciplined of disciplines', literature, scientific concepts become contaminated with a variety of cultural connotations, which fundamentally changes their meaning. Limon's ideas also provide a useful perspective for an analysis of Jeanette Winterson's work. In the following chapters, I will not aim to find aspects in Winterson's work that indicate understanding or ignorance of the scientific ideas she invokes. Neither will I examine whether she uses scientific ideas legitimately or intelligently. Instead, I will show how a scientific concept changes when transported into the literary text; how it becomes coloured not only with literary or philosophical connotations, but also by Winterson's political aims. These changes in meaning will not be regarded as damaging or confusing. Neither will they be regarded as a threat to the disciplinary order.

In what follows I will use the theoretical models and notions mentioned to discuss Winterson's wonderful blend of discourses and disciplines:

It is my nativity, my astrology, my biology, my physiognomy, my geography, my cartography, my spirituality, my sexuality, my mentality, my

corporeal, intellectual, emotional, imaginative self. (...) There is no mirror I know that can show me all of these singularities, unless it is the strange distorting looking-glass of art where I will not find my reflection nor my representation but a nearer truth than I prefer. (40 150)



ENCHANTMENT AS RESISTANCE

Jeanette Winterson's work can be read as a complaint against the strongest characteristic of modernity – faith in reason. Winterson's fiction resists rationality and empiricism, which to her are synonymous with narrowness and inflexibility. To understand why Winterson so vigorously defends an artistic, mystical and passionate worldview, we must go back to the Enlightenment, when modernity began to take shape. The distinctive characteristics of the Enlightenment are a wish to exert control over nature and to regulate the passions, an upgrading of science at the expense of the epistemological status of the poetic and a quest for certainty and objectivity in experience and experimentation. The Enlightenment sought to elucidate what was mystical, and to dissect what was whole. By opposing both historicist and mystical traditions, it initiated a profound quarrel that has continued until this day, when we are trying to come to terms with the twentieth-century opposition between modernity and postmodernity. By subscribing to the goals of the Romantics, while at the same time using postmodern strategies, Winterson re-enacts this old quarrel and places her work in the centre of the contemporary struggle between the legacy of positivism and the *Vernunftkritik* of postmodernity.

An Outline of Historical Periods

Contemporary western culture is the product of a continuous battle between two opposing worldviews or mentalities. On the one hand we find the project of modernity, which aspires to progress and rationality (cf. Harvey 1989:12); on the other hand we find an anti-modern counter-culture characterised by an aesthetic and historicising attitude (cf. Welsch 1991:72-74).

Modernity was forged in the days when Enlightenment thinkers such as René Descartes and Francis Bacon formulated their treatises about the scientific method. Their ideas were soon widely accepted in the international intellectual community, resulting in England for instance in the establishment of the Royal

Society for the Advancement of Learning. The same scientific spirit still reigned when, a century later, the French *Encyclopédistes* sought to gather all human wisdom in one great book. And modernity will continue as long as its projects maintain their vitality. Modernity is characterised by the pursuit of *mathesis universalis* or universal science. This universal science was modelled after the experimental natural sciences and was thought to enable us to understand and describe the whole of reality. Language was treated as a transparent medium. Philosophers tried to build a corpus of knowledge which would unify all knowledge in one grand scheme. Scientists and philosophers pretended to be able to offer final solutions that included not only nature, but also politics and ethics. The construction of a rational epistemological system of reality in its entirety was accompanied by what we could call 'the pathos of a radically new beginning' (cf. Welsch 1991:70). This pathos was related to a strong belief in progress. The Enlightenment mode of research, called the 'new' or experimental philosophy, deliberately set out to liberate thought from the obscuring influence of the church. In what is called the 'Quarrel of the Ancients and the Moderns', which took place around 1688, the Moderns agreed that it was useful to investigate the world in a new way. They tried to be empirically objective and rational, and to avoid established ways of thinking and religious influences. By doing so, they opposed themselves to the Ancients, who embraced the overwhelming legacy of classical antiquity and the Christian tradition.

Romanticism was the first counter-movement able to compete with the scientism that characterised the Enlightenment. The Romantics acted against the heritage of Enlightenment in that they criticised attempts to grasp reality as a totality. They believed in the inevitably fragmentary nature of the human knowledge of the world. The idea of a clear correspondence between reality and its linguistic representations was abandoned. Instead, poets worked from the notion that language is highly evocative. To them, language was filled with ambiguous structures of meaning. They thought that reality could not be apprehended directly. Rather, it had to be deciphered from coded messages in nature (cf. Wellek 1963:179). The highest reality, they assumed, is hidden behind the seemingly-obvious. In this way, the Romantics reacted against the empiricist worldview of the Enlightenment.

Around 1900, Romanticism made way for another phase in the modern project, that I, following Wolfgang Iser, will call 'twentieth-century modernity' (cf. Iser 1991:77). This cultural period was in many respects ambiguous. On the one hand, artists and scientists started embracing notions like

“Pluralität und Partikularität” (Welsch 1991:77) – but on the other hand, philosophers were obsessed with the universalistic promises of positivism. Except in a single footnote, Welsch does not pay any attention to logical positivism. In its broadest sense, positivism is a rejection of metaphysics. Logical positivists saw science as the way to achieve truth, to understand the world so well that we would be able to predict and control it. According to them, the world and the universe were deterministic, operated by laws of cause and effect that we would only be able to discern if we held on to scientific method. Science thus became a system of mechanistic laws. Furthermore, like the Enlightenment scientists, positivists believed in empiricism, the idea that observation and measurement were the necessary condition for all good scientific inquiry. In psychology, this led to the belief that behaviour, and not emotions and thoughts, were the legitimate objects of study. In art, we see that clarity and directness met with more and more appreciation. At the beginning of the twentieth century, the arts were primarily motivated by rational thinking. Movements like Cubism, Constructivism and *De Stijl* preferred clear structures and abstract forms, and sought to present reality as having an underlying framework. Abstract art forms of this period sought to touch the intellect, whereas Romantic and post-Romantic movements like Impressionism and Expressionism addressed the emotions. Likewise, the formalist approach to literature attempted to isolate and define the formal properties of poetic language. In architecture, Rationalism – an initiative of Berlage’s – inspired the *Nieuw Sachelijkheid*, that strove to avoid the voluptuous and dramatic influences of the architectural currents in the Romantic period. One could say that logical positivism made itself felt not only in the sciences, but also in the arts. I would like to incorporate the strong voice of logical positivism into Welsch’s rather one-sided concept of twentieth-century modernity, and present this period as an era of sharp contrasts.

The end of World War II is generally seen to mark the beginning of postmodernity. The war testified to a loss of values and marked a crisis in humanity: the death camps and the atomic bomb revealed the destructive potential of science. Postmodernists were sceptical of the belief that grand overarching projects could continue to guarantee the achievement of human welfare and well-being. An utter loss of cultural coherence made itself felt, and the sense of direction that had long been present in the development of western culture was lost. The grand narratives of modernity such as the Enlightenment, socialism, and Christianity, had failed to deliver on their promises of progress. A crisis of knowledge and understanding led to differentiation (the awareness that

knowledge is always intrinsic to a specific subculture) and pluralisation (the dispersion of truth into multiple independent truths) – elements of thought that now began to be celebrated as art forms and life styles. As ideology had become suspect (and, with that, any form of language and image that pretended to offer political solutions), an over-all crisis in representation made itself felt. Different subcultures and their languages were seen to construct worlds instead of representing one and the same world, knowable by all. People began to realise that not only concepts and values, but objects too, could not be represented disinterestedly or objectively. Knowledge was regarded as socially and historically constructed. Thus, the borders that used to separate truth from fiction, faded. This, postmodernists claimed, opened the door to an almost utopian world, free from constraints.

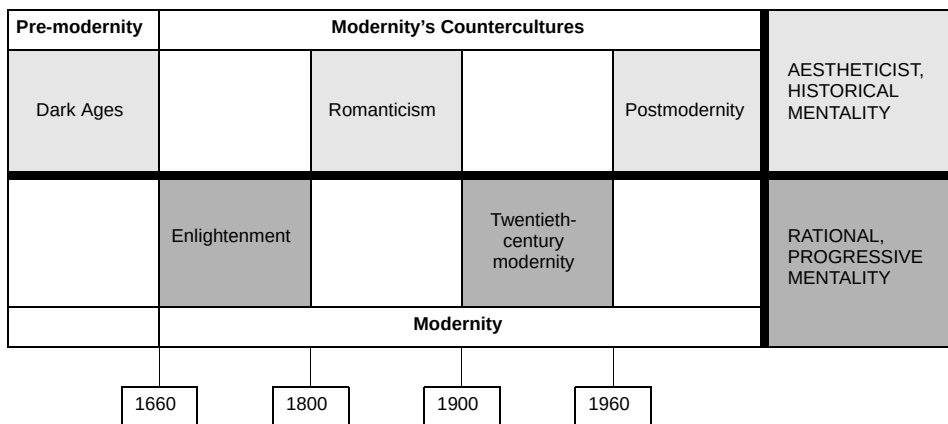
Welsch discerns two subsequent movements within modernity. Firstly, the *Neuzeit* – the Enlightenment, characterised by an unbridled desire for unity and universality; secondly, the *Neuzeitliche Moderne* – Romanticism seen as a period of reflection upon Enlightenment thinking and as a continuation of a specifically modern desire for unity and universality (cf. Welsch 1991:75). These two movements are followed by the *Moderne des 20. Jahrhunderts*, meaning twentieth-century modernity, characterised by a celebration rather than a rejection of plurality and the particular, and finally by the *Postmoderne*, in which unity and universality make way for fragmentation and pluralisation. Welsch describes the difference between twentieth-century modernity and postmodernism as follows:

Die Postmoderne realisiert in der Breite der Wirklichkeit (exoterisch), was modern zunächst nur spezialistisch (esoterisch) erprobt wurde. (Welsch 1991:83)

As Welsch's model does not account for the notions of fragmentation and ruin in Romanticism, does not pay enough attention to the continuities between Romanticism and postmodernism, and does not account for the re-emerging, at the beginning of the twentieth century, of a mentality that aimed at objectivity and universality, I propose to adapt his model so that it includes logical positivism. Also, I will take from Patricia Waugh (Waugh 1992) and Jos de Mul (De Mul 1991) the notion that Romanticism and postmodernity emerge from one and the same worldview or mentality.

Waugh and De Mul argue that twentieth-century modernity is a continuation of the Enlightenment just like postmodernity is a continuation of

the Romantic worldview. This would divide our culture into two opposing forces. Despite, or perhaps due to, their forceful opposition, both the characteristics of modernity and those of its counterculture keep on determining our culture interchangeably, in cyclical booms and depressions. Likewise, twentieth-century positivism considers itself heir to the Enlightenment tradition. Postmodernity, however, is less self-consciously a continuation of Romanticism. Despite their differences, Romanticism and postmodernism can be regarded as part of a single tradition: not only an anti-modern tradition, but also a tradition geared towards the aesthetic and the historical. On the whole, modernity has held more and longer power in the western world than its counterforce, witness the construction of contemporary common-sense reality and the scientific and technological domination of our surroundings. I have schematised this as follows:



Of course, the clear-cut delineations between historical periods and the uncompromising dates in this model are mere abstractions. The distinctions between periods are not this abrupt. Modernity is often accompanied by critique, also during the periods in which it manifested itself most strongly. During the Enlightenment, thinkers such as Giambattista Vico already fought René Descartes' *Discourse on Method* as a method of invention, and his reduction of physics to mathematics. Also, Jean-Jacques Rousseau's work can be regarded as an early critique of the primacy of rationality. At the beginning of the twentieth century, for instance, when positivism ruled the day, Max Weber complained

that modern life was disenchanted, too rationalised and too disciplined. He observed his contemporaries, who were arguing

(...) daß es also prinzipiell keine geheimnisvollen unberechenbare Mächte gebe, die da hineinspielen, daß man vielmehr alle Dinge – im Prinzip – durch berechnen beherrschen könne. Das aber bedeutet: die Entzauberung der Welt. Nicht mehr, wie der Wilde, für den es solche Mächte gab, muß man zu magischen Mittel greifen, um die Geister zu beherrschen oder zu erbitten. Sondern technische Mittel und Berechnung leisten das. Dies vor allem bedeutet die Intellektualisierung als solche. (Weber 1922:538)

Weber believed, furthermore, that man was caught in a process of depersonalisation that had a profound negative influence on ethics. The more rational the world became, the less chance one had to lead an ethical life. The impact of modern reason on social conditions and human experience would dissolve traditional forms of life, including the personal and ethical relations. He thought that the traditional unity of the pre-modern world had been scattered by the divisive impact of modern reason. So, while Enlightenment thinkers and logical positivists were making a lasting imprint, counter-movements were continuously present. All through modernity, such anti-modern voices have manifested themselves.

If this is the case, what is the point in using a model like that above? It explains the emotionally charged outbursts of these countering voices – voices like Winterson's. A model like this helps to visualise how the modern and the anti-modern traditions have battled for ages, and how the anti-modern uprisings were regarded as separate counter-cultures. I want to use the model above to argue that the continuities between these counter-cultures should be stressed. Only by doing so, can we understand why Jeanette Winterson so passionately rejects the core traits of modernity. Jeanette Winterson clearly rejects the rational mentality that characterises our culture to such a great extent. Her position can be called at once Romantic and postmodern. This fact concurs with Waugh's and De Mul's idea that postmodernism is a late manifestation of Romanticism. In this chapter we will take a closer look at Winterson's disapproval of the Enlightenment scientific worldview and her Romantic poetics. We shall also have a closer look at her rejection of the positivism of the early twentieth century, and examine where she stands within the period and styles of postmodernism.

Winterson and the Enlightenment

Enlightened man believed in the power to correct past errors in knowledge through a renewed application of human reason. René Descartes' project, for instance, sought to abandon the illusions created by tradition and to establish a radically new way of thinking. The use of the human faculty of reason is crucial to his method, as described in the fourth part of his *Discourse on Method*: "whether we are awake or asleep, we should never let ourselves be persuaded except on the evidence of our reason" (Descartes 1968:59). Descartes believed that truths produced by "example and custom" should be left behind, that the knowledge obtained in the past had been obscured by faulty methods and that our intelligence had therefore been 'darkened'. He tried to find a new method so that we would be able to start thinking in a new way:

I learned not to believe too firmly those things which I had been persuaded to accept by example and custom only; and in this way I freed myself from many errors which obscure the light of our understanding and render us less capable of reason. But after spending several years studying thus in the book of the world, and seeking to gain experience, I resolved one day to study also myself and to use all the powers of my mind to choose the paths which I should follow. In this I was more successful, it seems to me, than if I had never left either my country or my books. (Descartes 1968:34)

Descartes' condition for the attainment of certainty is the separation of the subject (*res cogitans*) from the world surrounding it (*res extensa*). Descartes built an epistemological system from the sole certainty he had: the reality of his own thinking, as expressed in the famous phrase "I think therefore I am". This principle enabled Descartes to deduce a complete epistemology. He sought to prove that we need not doubt the veracity of "our clear and distinct ideas" (Sutcliffe in Descartes 1968:20). This principle, he felt, brought all knowledge of the world within the reach of man.

Through the voice of Sappho, the erotic poet in *Art & Lies*, Winterson ridicules Descartes' *Cogito*. Sappho says:

After loss of Identity, the most potent modern terror, is loss of sexuality, or, as Descartes didn't say, 'I fuck therefore I am.' (AL 69)

Through Sappho, her advocate for the eroticism of cognition, Winterson affirms radically different parameters for defining existence. While for Descartes, the

proof of true existence is located inside one's rational being, for Winterson, the only way to prove true existence is to share one's being with that of another. While for Descartes undeniable existence can be found at the border between self and world, for Winterson existence is irrefutable only when the borders between self and world fade away. In contrast to Descartes, Winterson maintains an erotic epistemology. We can also see this in *Art Objects*: "Art is not a private nightmare, not even a private dream, it is a shared human connection" (AO 117), a "connection to (...) one another" (AO 13). It is the notion of experiencing a border between the sensitive self and the 'other' that has come to govern the modern western worldview. Winterson, however, questions the validity of the Cartesian separation between 'self' and 'other', ultimately claiming that science should not be disembodied, but rather, incarnate. In *Art & Lies*, for instance, we see that the abused Picasso's defence against the outside world – a forced separation of self and world – takes shape through metaphors of science. The elements of the periodic table, emblems of the hard and systematic organisational principle of chemistry, are the instruments that aid this separation:

What can pierce the thick wall of personality; your voice, your hand, a picture, a book, the sweet morning air? Myself imprisons me. The lead shield of my habits, that heavy, soft bluish-grey dead defence. pb No 82 of the Periodic Table, that useful list of contents that includes at no 26, Fe, the iron in my soul. (AL 87)

Thus, Winterson considers science as one of the strongest forces sustaining this shield between self and world, and declares that this is at the root of the loss of interested, personal or even amorous relationships between self and nature. Indeed, the order that the sciences have brought, disables the emotive forces brought forward by "your voice, your hand, a picture, a book, the sweet morning air" (Ibid.).

Winterson's rejection of Cartesian dualism also emerges in *Gut Symmetries* where Jove, a quantum physicist, describes his philosophy of life and death. Although Jove at the end of the novel proves to be one of Winterson's antagonists, he at first functions as an advocate of Winterson's philosophy of multidimensional reality. It is he who applies quantum mechanics to the question of the existence of an after-life. By fusing 'hard' theoretical physics to religious questions, he disqualifies the Enlightenment idea that reason and intuition are antithetical. While Jove is expounding his philosophy of 'quantum metaphysics',

he attacks Descartes and with that one of the main foundations of Enlightenment thought.

Moreover, 'we' and the sum universe cannot be separated in the way of the old Cartesian dialectic of 'I' and 'World'. Observer and observed are part of the same process. What did Paracelsus say? 'The galaxa [sic, A.E.] goes through the belly.' (GS 162)

Jove's dismissal of Descartes is reinforced by the reference to a figure as anti-rational as Paracelsus, who lived at the beginning of the sixteenth century and who defended the idea that the small and transient world of the human body (microcosm) corresponds with the universal and eternal order of the stars (macrocosm). Here, Jove argues that the world can only be known through the belly, the place that hermetic philosophers considered the locus of intuitive knowledge, and that was later seen as the locus of (gut) feeling. The passage above expresses the idea that sense impressions from the 'outer world' are not apprehended by the independent faculty of reason; instead, they shape and are shaped by human intuition. The fact that Jove refers to Paracelsus is illuminating. Paracelsus believed that he who lives for reason, lives against the spirit, a thought that could just as well have been one of Winterson's aphorisms favouring a separation between the science of the Enlightenment and religion.

The philosophical tradition that Paracelsus belongs to is generally considered to be diametrically opposed to the Enlightenment worldview. The historian of science Charles Webster, however, disagrees with the customary strict division between late medieval and early Enlightenment thought. On the basis of extensive historical research he concludes that there are important similarities as well. In *From Paracelsus to Newton: Magic and the Making of Modern Science*, he stresses that the gap usually observed between the two periods is no more than a mere academic convention:

One of the chief effects of the history of science as the subject has developed in the present century has been to drive a wedge between the cultures of Paracelsus and Newton. It may even seem like an act of perversity or lapsed historical judgement to bracket together the names of Paracelsus and Newton in the title of a book. By convention the two are regarded as inhabiting entirely discrete intellectual worlds. Our image of Newton is firmly associated with the values of the Enlightenment and the modern world, whereas the name of the enigmatic and inaccessible Paracelsus conveys alien associations of a tortured mind wrestling

unsuccessfully to escape from the labyrinths of the dark ages. (Webster 1982:1)

According to Charles Webster, Newton was as much a mystic as he was a man of science, an opinion that is shared by Betty Jo Teeter Dobbs (Teeter Dobbs 1975). Her historical study makes clear that Newton searched for the philosopher's stone and devoted considerable amounts of time to the study of hermetic correspondences. Jeanette Winterson, however, holds on to the convention that regards the worlds of pre-Copernican Paracelsus and the Enlightened Newton as separate ones, and she uses the figure of Newton to establish her position in this debate. In *The World and Other Places*, the inhabitants of a village called 'Newton' are caught in the deadly embrace of what Winterson calls 'clock-culture' – they live in a dire repetition; day in, day out, time passes in an unvarying linear process towards an inevitable end. They are governed by deterministic processes. Determinism implies that, given a set of initial conditions and a set of natural laws, the world will develop according to fixed patterns, and that future states of being can therefore be predicted. By picturing this village as such, she criticises the concept of determinism implicit in the Newtonian mechanical idea of the cosmos. In *Art & Lies*, she portrays Newton as a silly old fool trying to explain gravity (cf. *AL* 168), while characters like Picasso and Sappho regard gravity as a preposterous phenomenon emerging from a depressing worldview. Winterson deliberately chooses to make a caricature out of Newton, using him for her own ends, ridiculing his rationalism and determinism and ignoring his mystic side.

By adhering to this duality between Paracelsus and Newton, Winterson establishes a sharp division between a worldview based on mysticism and associative, creative thinking on the one hand and a worldview governed by rationality and a need for objectivity on the other. Winterson's interests are served by maintaining this opposition. When we look at the way Winterson deals with Newton's idea of absolute space or concepts like universal gravity or light, it will become clear that she uses Newton as an emblem for all she dislikes about modern science. At the same time, we will see that the era of Paracelsus to Winterson is not only a glorious past, it is also the inspiration to restore mysticism to its rightful place in our postmodern world:

In this enchanted city all things seem possible. Time stops. Hearts beat.
The laws of the real world are suspended. (*TP* 76)

The Newtonian ordering of space (i.e. subject to measurement, regularity and prediction) is brushed aside by Jeanette Winterson when she describes the city of Venice in *The Passion*:

The city I come from is a changeable city. It is not always the same size. Streets appear and disappear overnight, new waterways force themselves over dry land. There are days when you cannot walk from one end to the other, so far is the journey, and there are days when a stroll will take you round your kingdom like a tin-pot Prince. (TP 97)

Winterson's fluid map of the city is unlike any we know, and she refers only indirectly to a Newtonian ordering of the universe. At other times, however, she directly addresses Newton's ideas, as in *Gut Symmetries*:

The tenacity of the model should not be underestimated. Newton made it the basis for his Mechanics in the seventeenth century and rested his clockwork universe firmly in the principles of Euclid. Firming up Greek thought, it was Newton who realised concepts of absolute space and absolute time. Newton who regarded the Universe as three-dimensional, solid, massy, hard, made up of the motion of material points in space, a motion caused by their mutual attraction, that is, the force of gravity. (GS 11)

In her crusade against the Enlightenment philosophy, Winterson also targets Newton's concept of universal gravity. Newton argued that there is a centripetal force directed to the centre of every planet (Newton 1969:11) and that all bodies in the universe have gravity, which is proportional to the quantity of matter in each (Newton 1969:42). This concept of universal gravity aims not only to explain earthly phenomena like the weight of objects and tidal movement but also extends to the movements of the planets. In *Art & Lies* Winterson undermines the concept of universal gravity, when she describes Picasso's attempt at suicide. She jumps off a high building but miraculously survives the fall. She conquers gravity, and defies Newton's scientific, deterministic worldview:

She opened her eyes. She did live. Consciousness returning to the accelerated body. Her body, that in the spinning seconds had resolved to finish its work. Her body, that had travelled through gravity, through light, its own mission of inner space. (AL 134)

A way of thinking that avoids the problems of gravity. The world won't let me down. The single word that can release me from all that unuttered weight. (*AL* 136-137)

In *Sexing the Cherry*, Winterson yearns to be free of gravity.

(...) I'd want to feel the stars round my head. I'd want them in my hair the way they are in paintings of the gods. I'd want my whole body to feel the space, the empty space and points of light. That's how dancers must feel, dancers and acrobats, just for a second, that freedom.

Even if you were free from gravity it wouldn't feel good in a space suit. Wouldn't you want to be naked? Naked and turning your body in slow somersaults through a new atmosphere? (*STC* 120)

The anachronism between Jordan's seventeenth-century life and his use of twentieth-century knowledge of space travel denies the idea of linear history. In this passage, Winterson not only undermines the everyday experience of space, but at the same time she dissolves the distinction between narrator and author, tempting us to conclude that these are actually Winterson's ideas. She shows us that the liberation from the determinism of Newton's law of gravitation produces miraculous experiences:

The city, being freed from the laws of gravity, began to drift upwards for some 200 miles, until it was out of the earth's atmosphere. (*STC* 97)

Not only gravity, but light, too, was a topic of methodological discussion among Enlightenment scientists. Winterson explores this theme to express her hostility of rationalism and mechanicism and to boost her assault on the Enlightenment as a whole. Often, when discussing 'light' in her fiction, Winterson not only refers to the physical phenomenon, but also to its philosophical connotations, as in 'Enlightenment', in French the *Siècle des Lumières*, and in German *Die Aufklärung*. In the next passage, 'light' becomes a metaphor for all she dislikes about the eighteenth century:

In the dark places that do not need light, where light would be a lie, overstating what is better understood invisibly, it is possible to resist Time's pull. The body ages, dies, but the mind is free. If the body is personal, the mind is transpersonal, its range is not limited by action or desire. Its range is not limited by identity.

I need the dark places to get outside of common sense. To go beyond the

smug ring of electric light that pretends to illuminate the world.
'Nothing exists beyond this,' sings the world, glaring at me from its yellow
sockets, 'nothing exists beyond now.'
I challenge the stale yellow light to a duel. (*AL* 62-63)

In this passage in *Art & Lies*, she 'challenges' the artificial light, calling it "smug", "glaring" and "stale". She wants to show us that the light of reason did not so much enrich and enlarge our world, as that it robbed us of the understanding and freedom we can only find in darkness.

In 1704 Newton published his *Opticks*, which contained his theory of refraction, the division of light into prismatic colours. Nearly a century later Goethe formulated his doctrine of colours (*Farbenlehre*, 1810), which is directed against Newton's *Opticks*. Goethe believed that light was an indivisible unity and that the colours come into being from the cooperation between the bright and the dark. Although Goethe conducted experiments himself, he differed from the empiricists in that he believed that experiments ought not to be interpreted quantitatively. They ought to be interpreted qualitatively. Instead of mathematical abstraction, which he despised, what should be sought for was an intuitive insight in the coherence of nature. Moreover, he believed that good scientific research happened in a unity between the researcher and the object researched (Blumenfeld 1986:102-104): the observer, being emotionally involved, was not to be separated from the object that he studied. Goethe's disapproval of Newton's mathematical method emerged from his preference for specifically human, emotional experience, and with the attachment of symbolical meaning to experience, as we can see a letter to the painter Philipp Otto Runge:

Die undurchsichtigen Farben stehen wie Blumen dagegen, die es nicht
wagen, sich mit den Himmel zu messen, und doch mit der Schwachheit
von der einen Seite, dem Weißen, und dem Bösen, der Schwarzen, vor der
andern, zu tun haben. (Goethe in Runge 1983:184)

The way Winterson describes the experience of light is often strongly reminiscent of Goethe. *Art & Lies* is full of marvellous synaesthetic experiences of light, that echo Goethe's methodology:

In its effect the light was choral. Harmonies of power simultaneously
achieved, a depth of light, not one note but many, notes of light sung
together. In its high register, far beyond the ears of man, the music of the
spheres, vibrating light noted in its own frequency. Light seen and heard.

Light that writes on tablets of stone. Light that glories what it touches.
Solemn self-delighting light. (*AL* 26)

Goethe's interest not only concerned the physical colours (cf. Burwick 1986:17) but also extended to what he called the 'physiological colours' – i.e. so-called 'after-images', colours that originate in the eye itself, for instance after looking at bright light. Again, it shows how he looked upon nature as an organic whole. To Goethe, the experience of light in the human eye is a result not only of outside impulses, but also of inner processes. In Winterson's work similar experiences are described; impressions of light whereby human responses, i.e. the physiological aspects of the sensation of light, are included:

The image stamped upon the retina, repeated behind the eyelid, stored in the rhomencephalon, returned to the body in injections of emotion. The power of the image through the unforgetting brain. (*AL* 132)

The sun on my spine brings colours to my eyes, blue and blood vermilion.
(*AL* 143)

By emotionalising light, and by 'infecting' it with personal and cultural connotations, Winterson breathes new life into the controversy between Newton and Goethe. Rejecting Enlightenment disenchantment, she supports Goethe and other Romantic poets, who believed that Newton "had destroyed all the poetry of the rainbow by reducing it to the prismatic colours" (Abrams, 1953:303). In this controversy, we recognise the contrast between on the one hand the conception of nature of the Romantic poets, rejecting the division into subject and object while emphasising the *innere Gefühl*, culminating in *Naturphilosophie*, and on the other hand the mathematical and empirical tradition of the Enlightenment. Winterson creates a sharp contrast between the scientific ideals set by the Enlightenment scientists, and the poets of the Romantic era. Indeed, Sappho's complaint that "the spirit has gone out of the world" (*AL* 65), recalls John Keats' criticism of the "cold philosophy" of Newton's *Opticks* in "Lamia":

Do not all charms fly
At the mere touch of cold philosophy?
There was an awful rainbow once in heaven:
We know her woof, her texture; she is given
In the dull catalogue of common things.
Philosophy will clip an Angel's wings,

Conquer all mysteries by rule and line,
Empty the haunted air, and gnomed mine –
Unweave a rainbow, as it erewhile made
The tender-person'd Lamia melt into a shade.

Abrams comments that “the familiar passage on Newton’s rainbow demonstrates that in part it signifies the poet’s vision, in opposition to the scrutiny of ‘cold philosophy,’ which, Keats says, will ‘empty the haunted air’ and ‘unweave the rainbow’ ” (Abrams 1971:304). Keats believed that science was not only the opposite, but also the enemy of poetry. He even imagined the possibility of a war between the two cultures, and predicted the downfall of poetry (Abrams 1971:303).

In Keats’ days, poetry was suffering from marginalisation. In his book *Science, Technology, & Society in Seventeenth-Century England*, Robert K. Merton explains how the century leading up to the Enlightenment shows a gradual decline of the epistemological prestige of poetry. This was partly due to realism being the pervading mode of thought of the new scientific movement. According to Merton, Puritanism has been one of the guiding influences in this shift towards utilitarianism and realism. A leading spokesman of the Puritans was Thomas Sprat (1635-1713), Bishop of Rochester and historian of the Royal Society. He pleaded on behalf of a “close, naked” style of speech and writing, bringing language as near as possible to what was called “mathematical plainness”. As Merton says, “Sprat rejects poetry as involving undesirable ornaments of speech, as elevating the specious at the cost of the real and speaks of poets as a ‘pleasant but unprofitable sort of men’ ” (Merton 1970:18). It is probably no coincidence that one of the characters in *Oranges Are Not the Only Fruit* is the preacher Spratt. This semi-autobiographical book tells the story of Jeanette, a girl that struggles to break free from her Puritan background.

Merton finds another example of the Puritans’ attitude towards the poetic in the philosophy of Thomas Hobbes: “Hobbes would tolerate the innocent pleasure of poetry, but urges that ‘this isn’t the serious employment of words which are properly signs for real things and their connections’ ” (Merton 1970:18), a position comparable to I.A. Richards’ (cf. page 6). Hobbes was convinced that reason governs the passions and that everyone ought always to act rationally. In his *Leviathan* (1651 part I. ch. 4), he argued that passions breed reprehensible emotions like partiality, pride and revenge, and that metaphors corrupt not only the empirical tradition, but also language as a whole.

Winterson often fulminates against such notions of style, a style so highly praised by Thomas Sprat in the language used at the Royal Society in his days.

They have therefore been most rigorous in putting in execution, the only Remedy, that can be found for this *extravagance*: and that has been, a constant Resolution, to reject all amplifications, digressions, and swellings of style: to return back to the primitive purity and shortness, when men deliver'd so many *things*, almost in an equal number of *words*. They have exacted from all their members, a close, naked, natural way of speaking: positive expressions, clear senses, a native easiness, bringing all things as near the Mathematical plainness, as they can: and preferring the language of Artizans, Countrymen, and Merchants before that, of Wits, or Scholars. (Sprat 1667:113)

The “extravagance” that Sprat rejects here is precisely the kind of language that Winterson uses to describe lesbian love all through her oeuvre. It is exactly this extravagance that provides a way out of and an antidote against Puritanical ways of thinking and the Pentecostal community that Winterson grew up in. In *The PowerBook* we see how the use of metaphor produces a wealth of associations and gives the language a highly emotional impact:

Sex between women is mirror geography. The subtlety of its secret – utterly the same, utterly different. You are a looking-glass world. You are the hidden place that opens to me on the other side of the glass. I touch your smooth surface and then my fingers sink through to the other side. You are what the mirror reflects and invents. I see myself, I see you, two, one, none. I don't know. Maybe I don't need to know. Kiss me. (TPB 174)

That Winterson locates the notion of self-control and the control over language in the centre of our intellectual history, becomes clear in her introduction to Elizabeth Inchbald's *A Simple Story*:

During the Eighteenth century, science and philosophy were working together to provide a picture of man as a rational self-controlled creature, not subject to the winds of fate or any earlier idea of spooks and spirits. By means of his intellect he was supposed to be able to control his emotions (...) (Winterson 1986:vii)

For Winterson, poetic language, with its artistic amplification and poetic extravagance, is the ultimate vehicle for the expression of a highly sensuous, embodied way of experiencing and knowing the world – a world remote from

Puritanical notions of austerity. She uses the poetic to defend her world, which is pervaded with love and poetry, against philosophies that claim the supremacy of disinterested knowledge and exact language. This battle between the arts on the one hand and the Puritan austerity on the other continues throughout her oeuvre.

In *Sexing the Cherry* Winterson portrays a city where love is forbidden in order to prevent the *crimes passionels* that had earlier repeatedly decimated the population. Marriages are arranged and sex is allowed only for procreation. Winterson seems eager to ensure that we do not miss the point: Jordan, the narrator of this section, asks the inhabitants if these rules have anything to do with Puritanism:

I questioned them about their strictness, likening them to the Puritans holding sway in my own country. They had not heard of Puritanism, but found the idea of bandaging up the male member so as to leave it immovable very appealing. (*STC* 75)

Although any knowledge of Puritanism is denied, the analogies are obvious. However, although they have learned to abhor the ability of art to arouse their passions, the inhabitants cannot escape from its force. Musical instruments are outlawed and displayed in a museum with the sign: "INSTRUMENTS OF LUST AND FURY". When the narrator takes one of the guitars off the wall and starts to play, the listeners are touched by his music, and later that night the 'plague of love' breaks out again. All through the book, the attitude of the Puritans with regard to love and the arts is depicted not only as nonsensical but also as totalitarian. Playfully criticising their banishment of emotion, setting it against the background of scientific endeavour and voyages of discovery, Winterson, too, links the Age of Reason to the rising influence of Puritanism, and points them out as the origin of our modern-day separation of intellect and emotion.

So one of the ideas we are supposed to take away from *Sexing the Cherry* is the historical awareness that with the advent of science, lamentably, a cold and bloodless mentality took hold. We find this same point of view expressed in *Art & Lies*, when Sappho rejects the worldview of none other than Thomas Hobbes:

Do I look like Hobbes? I hope not. (...) I've never had much patience with Hobbes. I can work with a man that is a) an atheist, b) a monarchist

c) a nominalist, d) a materialist, but I can't work with a man who is all of these things at the same time. (*AL* 12-13)

No, in the dreary Hobbes world, where religion is superstition and the only possible actions are actions of self-interest, love is dead. (*AL* 13)

In this book Winterson, through Handel's narrative, fights the idea that science ought to be clean, cool and devoid of passion. In fact, she expresses an opinion similar to Bruno Latour's in "Do you Believe in Reality? News from the Trenches of the Science Wars". Latour says:

Instead of stuffed scientists hanging on the walls of the armchair philosophers of science of the past, we have portrayed *lively* characters, immersed in their laboratories, *full of passion*, loaded with instruments, steeped in know-how, closely connected to a larger and more *vibrant* milieu. Instead of the *pale and bloodless* objectivity of science, we have all shown, it seemed to me, that the many nonhumans mixed into our collective life through laboratory practice have a history, flexibility, culture, *blood*. (Latour 1999:2-3) [Italics A.E.]

Like Winterson, Latour tries to incorporate emotion, passion and gut feeling into our cognitive system. The upgrading of reason and science, Winterson claims, ended up in the downgrading of the emotional energies within our cognitive potentials. This becomes clear for instance in *Gut Symmetries*, where science and poetry clash and compete, and where the scientist (Jove) disdains the poet's (Stella's) worldview.

Fabulation dropped to the bottom of the epistemic hierarchy. As M.H. Abrams puts it in *The Mirror and the Lamp*, since the Enlightenment "the representation of the truth, and nothing but the truth, is non-poetry" (Abrams 298), and "to some writers, it seemed that if science is true, poetry must be false, or at any rate, trivial" (Abrams 299). His observations on the Benthamites are also interesting in this context:

Bentham represents a culmination of a tendency of the new philosophy in England, empirical in pretension and practical in orientation, to derogate poetry in comparison with science. (Abrams 300)

In the Benthamite philosophy, physical science is the role-model as far as truthfulness is concerned, whereas poetry is considered to be troubled by the emotions and the imagination. In fact, one of Bentham's aphorisms was: "all

poetry is misrepresentation” (Abrams 301). It is clearly this spirit that Winterson is fighting against when she says in her introduction to Elizabeth Inchbald’s *A Simple Story*:

The eighteenth century [had a] mania for solid ground beneath their feet.
(...) Once theology and prejudice met up with science (of a kind) many
more doors were closed than were opened. (Winterson 1986:ix)

So we can see that Winterson strongly rejects the scientific worldview of the Enlightenment. She opposes the Cartesian belief that we should be persuaded by the evidence of reason rather than that of tradition, and rejects its programmatic separation of subject and object. She uses metaphors of classical science to portray a cold and detached kind of science. The Enlightenment’s determinism, its fixity, its rejection of mysticism, its emphasis on dissection and the mechanical are regarded by Winterson as a negation of the notion of a natural harmonious unity. In her eyes, Enlightenment scientists have overlooked the human aspects of knowledge gathering processes. She feels that the Enlightenment is to blame for the advancement of science at the expense of the prestige of poetry. In her work, she pays attention to the Puritan aspect of this process. A Puritanical view towards the passions – their dismissal of ‘swellings of style’ – has, according to Winterson, led to the erroneous idea that poetry is not a valuable form of knowledge, not, at least, in comparison with scientific knowledge.

In chapters 3, 4, and 6, I will look at specific aspects of Enlightenment science (space and place, time and history, medicine) in more detail, expanding on Winterson’s hostility towards the Enlightenment by showing how she expresses this grudge in ideas that are both Romantic and postmodern.

Winterson and Romanticism

At the beginning of this chapter I argued that it makes sense to see the intellectual history of the west as a process of cyclical movements and consequently to regard the Romantic period as a reaction to the Age of Enlightenment and a return older cultural values. The description that René Wellek uses to define Romantic poetics confirms this point of view. First of all, the Romantic poets gave the imagination pride of place in their poetry. Secondly, organic, evolving nature was fundamental to their view of the world, and thirdly, symbol and myth were essential in their conception of poetic style (cf. Wellek

1963:161 and 174). Symbol and myth are crucial to the Romantics' sense of longing, because they provide "glimpses of fulfillment" (McFarland 1981:10). The Romantics were pervaded with a sense of longing for a realm that "could be removed in space, in time, and in reality as well" (McFarland 1981:8). In *Romanticism and the Forms of Ruin*, which focuses on brokenness and fragmentation, McFarland argues that for the Romantics "incompleteness is at the very center of life" (McFarland 1981:5). The Romantics trusted their imagination to provide true knowledge, as they had a "metaphysical intuition which discerns, behind the complex outward appearance of things, the permanence of a unique essence" (Praz 1970:212). The worldview of the Romantics is therefore almost diametrically opposed to that of Enlightenment thinkers, who combined reason with empiricism.

William Blake was one of those who, unlike Descartes, believed that experiences of something beyond the empirically verifiable are not illusionary. In "Proverbs of Hell", he wrote: "Every thing possible to be believ'd is an image of truth" (Blake 1975:xix). Unlike other poets in his time, he would not copy, study and translate other texts: "I will not Reason & Compare; my business is to Create", Blake writes in his "Jerusalem" (Blake 1972:629). He looked back not only to the Dark Ages, "his settings soon reached further, into yet remoter and darker ages – outer space, or eternity" (Butler 2000:15). Blake was inspired by the painter and illustrator Henry Fuseli, who "favoured ancient epic, the sublime, and allegory ('the sensible presentation of what cannot be seen with the naked eye')" (Butler 2000:17) – precisely what Descartes dismissed as 'tradition'. In that line of thinking, reason only served to limit man's potential, as we can read in "The Marriage of Heaven and Hell": "Those who restrain desire, do so because theirs is weak enough to be restrained; and the restrainer or Reason usurps its place & governs the unwilling" (Blake 1975:xvi). It is obvious that Descartes and Blake had radically contradicting worldviews and often Blake seems to comment directly on the ideas of this Enlightenment French thinker: "Man has no body distinct from his soul" (Blake 1975:xvi). In her writing, Winterson sides with the Romantics in their reaction against the age of the Enlightenment, and she often shares Blake's ideas on the visionary powers of art and the imagination.

For both the Romantics and Winterson, the role of art is crucial in the attainment of a harmonious ideal. Wellek describes this harmonious ideal as "a monism which arrived at an identification of God and the world, soul and body, subject and object" (Wellek 1984:165). In Romanticism, the artistic mentality was considered the cognitive instrument *par excellence* through which that ideal

could be sensed. This is what Winterson means when she says in *Sexing the Cherry*: “Artists and gurus are, in the language of science, superconductors” (STC 91), an expression that installs scientific terminology into her aesthetics, and also echoes Coleridge’s idea that “symbols are conductors” (McFarland 1981:31). Moreover, Winterson, like the Romantics, pleads for an aestheticisation of the world. In *Art & Lies*, for instance, we see that art can be regarded as the redeeming feature of an otherwise cold and loveless world. Picasso, a girl who is abused by her brother and disowned by her parents, decides to paint herself a way out of there – in a miraculous manner:

In the morning, it was raining, and the rain fell in orange points on her cream flesh. They were spotted with guilt, each could see in the other, the patterns of infection. (...)

My mother poured the tea with trembling hands. Concentrate, concentrate, one cup, two cups, safe, safe. She dropped the pot. The white china shattered on to the white tablecloths and spread the tea in a five-pointed star of plum.

‘Why is the tea that colour?’ demanded father.

‘There is no colour there father, no colour, just tea.’ She dabbed at it with the corner of her white handkerchief. She might as well have dipped it in blood. (AL 46-47)

In Picasso’s house, and in fact all through Winterson’s oeuvre, there is a conflict between those who acknowledge the power of art and those who prefer not to see it. With Winterson, those who believe in an aestheticisation of the world in the end always win. The importance of such an aestheticisation was already expressed by Friedrich von Schiller in *Briefe über die Ästhetische Erziehung des Menschen* (1795), when he said that “civilisation itself brought about a division in man” (Adams 1971:417). Man’s united sensibility was gradually divided into intuition and imagination on the one hand and speculation and abstraction on the other. As practical or theoretical reason came to dominate the human intellect, the aesthetically sensitive side of human nature was repressed, a process which alienated man from himself and the world he lived in. He argued that only when man started trusting the aesthetic side of his intellect, would he be restored to his original harmonious state. In *Art Objects*, Jeanette Winterson develops a similar argument:

This denial of imaginative experience happens at a deeper level than our affirmation of our daily world. Every day, in countless ways, you and I

convince ourselves about ourselves. True art, when it happens to us, challenges the 'I' that we are. (40 15)

Winterson here in fact argues that an egalitarian society seeks to deny the imagination in order to be able to maintain status quo, while the goal of the arts is to challenge and contradict.

Both Schiller and Winterson consider the aesthetic as that dimension which harmonically unites all other aspects of life. By doing so, aesthetics becomes their primordial philosophy. Novalis (1772-1801) had a comparable worldview:

Die Welt muß romantisiert werden. So findet man den ursprünglichen Sinn wieder. Romantisieren ist nichts anders als eine qualitative Potenzierung. Das niedere Selbst wird mit einem besseren Selbst in dieser Operation identifiziert. So wie wir selbst eine solche qualitative Potenzenreihe sind. Diese Operation ist noch ganz unbekannt. Indem ich dem Gemeinen einen hohen Sinn, dem Gewöhnlichen ein Geheimnisvolles Ansehen, dem Bekannten die Würde des Unbekannten, dem Endlichen einen unendlichen Schein gebe, so romantisiere ich es. – Umgekehrt ist die Operation für das Höhere, Unbekannte, Mystische, Unendliche, – dies wird durch diese Verknüpfung logarithmisiert – es bekommt einen geläufigen Ausdruck. (...) Wechselerhöhung und Erniedrigung. (Novalis 1910:117)

In this passage, Novalis expresses his belief that, in order to recover a more fundamental or higher truth, an operation on or artificial transformation of the world should be performed. He calls this operation or transformation "Romantisierung". This operation is twofold: it makes the commonplace mystical, and makes the mystical more common. The world is alternatively upgraded and downgraded. The finite is made infinite, the known is made unknown, and at the same time, the secret, the infinite, deeper reality is presented as finite and common.

One could interpret Novalis' method as linked to the Romantic wish to enchant the world, as a contrast to the Enlightenment aim to make phenomena transparent. In this enchantment, the subject is engaged both actively and passively. The subject at once transforms dull reality into a mystical whole, and at the same time it is passionately intensified by what remains secret, and is thus transformed into an other, deeper self. The Romantics' notion of unity of subject and object clearly runs parallel with this epistemological procedure: in

transforming the dull reality into a meta-reality, the division between the 'I' and the 'outer world' collapses.

I believe Winterson would agree with Novalis' procedures of 'Romantisierung'. She signals that "the spirit has gone out of the world" (*AL* 64) or, as it is said in an authorial intrusion in *Oranges Are Not the Only Fruit*: "I miss God who was my friend" (*OAF* 165). To fight this problem, and the mentality that caused it, the daily should be made "winged", as she puts it. The train that carries Handel, Sappho and Picasso in *Art & Lies* is described right away as an "horizontal angel, trumpet out on a hard bend" (*AL* 3), and as the story unfolds, we see that an ordinary train journey becomes an extraordinary vehicle for the transportation of these three characters into a mysterious new reality. Likewise, in *Great Moments in Aviation* a touch of the divine is added to the first successful flight of the brothers Wright:

(...) Orville, lying on the bottom wing, gave the signal for release. Wilbur ran alongside, steadying the machine down its long trolley towards infinity. Can you see the plane rising up like an angel? Immortality for twelve seconds. And how many years of faith and work for everyone of those twelve seconds? (*GMA* 47)

The last sentence of this passage expresses the complementary, reversed transformation wherein the divine is linked to many years of common hard work. Another expression of the reversed aestheticisation we find in *Oranges Are Not the Only Fruit*:

[She] fixed her gaze on the picture of the Lord hung about the oven. (...)

It was called 'The Lord Feeding the Birds' and my mother put it over the oven because she spent most of her time there, making things for the faithful. It was a bit battered now, and the Lord had a blob of egg on one foot, but we didn't like to touch it in case the paint came off too. (*OAF* 22)

Winterson not only mystically upgrades the world; at times, she presents the divine as something extremely commonplace, using Novalis' reverse operation of aestheticisation. Although Winterson shows herself to be a Romantic, at the same time the passage above contains a postmodern literary strategy. By saying "the Lord had a blob of egg on one foot" rather than "there was a blob of egg on the painting" Winterson deliberately confuses ontological layers, mixing

sacred and profane levels of reality, and displaying a tendency towards ontological anarchy (cf. McHale 1987:34-37).

Another telling example of Winterson's application of Romantic poetics can be found at the beginning of *Sexing the Cherry*, where two apparently unrelated paragraphs follow one another.

(...) cutting the air like a bright sword.

The fog came towards me and the sky that had been clear was covered up. It was bitterly cold, my hair was damp and I had no hand-warmer. I tried to find the path but all I found were hares with staring eyes, poised in the middle of the field and turned to stone. I began to walk with my hands stretched out in front of me, as do those troubled in sleep, and in this way, for the first time, I traced the lineaments of my own face opposite me.

Every journey conceals another journey within its lines: the path not taken and the forgotten angle. These are journeys I wish to record. Not the ones I made, but the ones I might have made, or perhaps did make in some other place or time. I could tell you the truth as you will find it in diaries and maps and log-books. I could faithfully describe all that I saw and heard and give you a travel book. You could follow it then, tracing those travels with your finger, putting red flags where I went.

For the Greeks, the hidden life demanded invisible ink.
They wrote (...) (*STC* 9-10) [original typography]

In the first paragraph Jordan gets lost during a walk in the fields. All his attempts to find his way fail until he changes his strategy. His journey then becomes dreamlike and surreal: when he stops relying on visible reality he learns to recognise another, deeper reality. The second paragraph tells us that the journeys worth recording are not the actual, factual ones, but the virtual, imaginative ones which were made in a hidden life. Surreal, fantastic journeys are far more interesting or important than those that are logged in travel books. Here Winterson clearly discards the rational perspective in favour of imaginative experiences of deeper reality, giving us a clear view of the fantastic or perhaps even magic realist aspects of her work – her Romanticism.

Again we see that Winterson uses postmodern, metafictional techniques to support her argument. The extra space dividing the two paragraphs seems to indicate a transition to a new topic. However, this visual impression is misleading. The interpretation of each paragraph is reinforced by the other. Winterson plays with the idea that visible and immediately evident impressions are less interesting than invisible, hidden phenomena. In fact, the decision to ignore the visual form supports the interpretation that can be derived from the interrelated paragraphs. In the text, Winterson leaves firm clues for this interpretation: a hidden journey is concealed “within its lines”, and the “hidden life demanded hidden ink”. Both are clear references to the extra space between the paragraphs.

Another striking aspect of this passage is the metaphor of petrification. As Jos de Mul indicates in his book *Het Romantische Verlangen* [*Romantic Desire*, A.E.], the rhetorical representation of reality as dominated by what de Mul calls ‘Conceptual Rationality’ has often been described using the metaphor of petrification. De Mul argues that against the petrifying discursive power of ‘The Concept’, we can set a poetic thinking in images that does more justice to man’s primal metaphoric capacity. In this passage from *Sexing the Cherry* Winterson uses this metaphor in the same way. Jordan used to discover reality by direct sense impressions, most of all visual ones. This method resulted in a petrified reality. A reality that is researched by empirical and rational means only will not only turn out to be shallow and static but also frightening and cold.

By placing truth outside the directly accessible world of the senses, Winterson opposes the Cartesian method. In *Art Objects*, her collection of essays, she says:

It is through the painter, writer, composer, who lives more intensely than the rest of us, that we can rediscover the intensity of the physical world. And not only the physical world. There is no limit to new territory. The gate is open. Whether or not we go through is up to us, but to stand mockingly on the threshold, claiming that nothing lies beyond, is something of a flat earth theory. (AO 151)

Whereas Descartes believes that the use of reason alone can provide us with realistic knowledge of the world, Jeanette Winterson believes that

The realist (from the Latin *res* = thing) who thinks he deals in things and not images and who is suspicious of the abstract and of art, is not the

practical man but a man caught in a fantasy of his own unmaking.
(AO 143)

It is clear from these two passages that Winterson opposes the artist and the realist. She maintains that unlike the realist, the artist is able to understand that “there is more around us than the mundane” (AO 136) and that therefore the artist is able to understand reality in a more profound way. Indeed, Stefan Welz says in his article “Das Pfropfen als Sünde”:

Phantasie ist für sie nicht nur Rückzug aus einer kruden, heillosen Welt und Gegenentwurf zu einer widerlichen Wirklichkeit. Phantasie ist in ihren Romanen ein Mittel, um näher zum Wirklichen vorzudringen und die Lügen dessen, was sich als Wirklichkeit gebärdet, aufzudecken.”
(Welz 1997:97)

Winterson's Romantic “Wirklichkeit” also entails a monist view of nature. Not unlike Romantic poets and scientists, Winterson holds that objects, events and the observer belong inextricably together. Wellek says the following about this Romantic intellectual attitude:

This new view emphasizes the totality of man's forces, not reason alone, nor sentiment alone, but rather intuition, ‘intellectual intuition’, imagination. It is a revival of Neo-Platonism, a pantheism (...), a monism which arrived at an identification of God and the world, soul and body, subject and object. (Wellek 1963:165)

Handel, a character in *Art & Lies* who voices Winterson's critique of modernity (cf. page xiv), displays just such a monist philosophy, when she argues:

(...) no matter how meticulous the scientist, he or she cannot be separated from the experiment itself. Impossible to detach the observer from the observed. A great deal of scientific truth has later turned out to be the observer's fiction. It is irrational to assume that this is no longer the case.
(AL 30)

This monist view is echoed in the following description of Mrs. Munde, who appears in *Boating for Beginners* and who is, like Handel, a character guided by intuition:

(...) she had wanted more than anything to be an astronomer; indeed she had spent nearly all her youth gazing out of the window, wondering about

the nature of the cosmos and *how she could truly be part of it*. As she grew older and her ambitions remained as distant as their object, she persuaded herself that this early impulse was really a metaphor for something else, and when she heard about the Unpronounceable she knew her instinct had been correct. She was an Astronomer without Telescope. Now the cosmos loomed larger and more definable, *and she belonged to it*. (BFB 19-20) [Italics A.E.]

Mrs. Munde's motivation to be an astronomer does not arise from the 'will to know' but from a desire to experience a transcendent unification between the self and the universe. That explains why she does not need any scientific instruments, like the telescope. In this passage, the telescope is regarded as an instrument of rationality, and as an instrument that literally stands between the self and the world. The narrator suggests that for Mrs. Munde, it is not through scientific instruments that one needs to understand the cosmos; it is one's love for cosmic coherence that is prerequisite for any real understanding. As I showed earlier, the philosophy of the Enlightenment sought to abandon this Medieval type of mysticism: such was their goal in the Quarrel of the Ancients and the Moderns. In fact, a stance like Mrs. Munde's is not only a pre-modern type of reasoning; it also fits into a Romantic conception of nature. As Wellek explains in *The Concept of Romanticism*, the Romantic view of nature entails a "view of nature as a language, as a concert of harmonies. The whole universe is conceived of as a system of symbols, correspondences, emblems, which at the same time is alive and pulsates rhythmically" (Wellek 1963:172).

Winterson and Twentieth-Century Modernity

In her collection of essays, Winterson draws attention to the fact that the Romantic poetics in its turn gave rise to an oppositional reaction, which shows her awareness of the competitive forces at work within the history of aesthetics:

The reaction against Romanticism was a very serious one, and if the Romantics were emotional, introspective, visionary and very conscious of themselves as artists, then the move against them and their work was bound to be in opposition: to be radical, extrovert, didactic, the writer as social worker or sage. (40 29)

Where Romanticism reverted to pre-Enlightenment philosophies and aesthetics, it was itself subsequently brushed aside by a mentality that in many ways constituted a return to the aims of the Enlightenment.

This return – or perhaps we should say resurfacing – of Enlightenment values is exemplified by the logical positivists, who formed one of the dominant philosophical movements of twentieth-century modernity. Ernst Mach, member of the Vienna Circle and a prominent advocate of the ideas of this movement, tried to study and eradicate errors that stood in the way of attaining absolute objectivity. Science was proposed as the model for all knowledge and truth. To that end, subjectivity should be eliminated from science, and rules had to be established for objective experiment. In this respect his project was comparable to that of the early Wittgenstein, who wrote his *Tractatus Logico-Philosophicus* in part “to mark the limits of thought by setting the limits of language” (Kenny 1973:21). Mach’s work also displayed similarities with Bertrand Russell’s, who was of the opinion that the scientific view of the world is largely correct and who, believing that the language we use should describe the world unambiguously, found that language had to be brought down to its minimum requirements – its atomic facts – in order to avoid untrue phrases and inexistent elements of the world. Basically, Mach, Wittgenstein and Russell were trying to free physics from metaphysics. They held that the language used in science ought to be sober and should avoid excess as well as any reference to non-visible things.

Mach formulated requirements that good theories should meet. Laws and theories had to represent facts that were generated from experience. Theories had no other function than to order the chaos of the impressions our experience leaves us with. This ordering was distinctly restrictive: experiences of and words referring to entities and phenomena that could not be observed were excluded. In his *Erkenntnis und Irrtum* he explains that humans experience a boundary (“U” – for “Umgrenzung”) between their body and the world outside. To him, sense-impressions either came from outside that boundary, in which case they were empirically verifiable, or they originated within that boundary. Psychological experience, as he would call the latter, can be mistaken for physical experience, but in fact are the product of our memory or imagination. For instance, when we dip a straight stick in the water, we see a bent stick, yet we know it is still straight. Our mind corrects the experience, adding extra information. Mach declared that what goes on outside the boundary U can be called physics in the broadest sense. In order to describe external occurrences in a pure state (which is the objective of science), it is necessary to eliminate the influence of the observer, that is, of those elements that lie within U. What then, should a scientist do in order to distinguish between objective information and information from fantasy?

Firstly, Mach believed that the scientist should base his conclusions upon experiments in which the physical experience and the psychological experience are identical. Only when there are no differences between the subjective and the objective experience, “die Frage nach Schein und Wirklichkeit” loses its importance. Secondly, the progressive development of science, Mach thought, would accumulate so much knowledge of psychology and physics that in due course people would be able to discriminate between “die Elemente der Realen Welt” and “die Elemente des Ich” (Mach 1905:10).

Knowing her views on the Enlightenment, it is obvious that Winterson dislikes this return to Cartesian duality and a belief in an empirical verifiable reality – and the shadow it casts on our modern-day science and society. In her worldview, it is undesirable and even impossible to make a difference between objective and subjective experiences. In the following passage from *Art & Lies*, the discrepancy between the ideas of Winterson and Mach is obvious:

Even science, which prides itself on objectivity, depends on both testimony and memory. Scientific theory has to be built up from previous results. Scientists must take into account what others have recorded and what they themselves have recorded previously. Science deduces and infers from past explanations, past explorations, the investigative technique that tests its theory against all known facts.

But not all facts are known and what is known is not necessarily a fact.
(*AL* 29)

When Jove, at the end of *Gut Symmetries*, betrays his earlier metaphysical musings and shows himself as the patriarchal and rationalist scientist he really is, as his astrological data already revealed him to be at the beginning of the book. He starts to judge his wife as unhealthy because she fails to distinguish between object and subject:

Unhealthy individuals understand their dreams and fantasies as something solid. An alternative world. They do not know how to subordinate their disruptive elements to a regulated order. My wife believed that she had a kind of interior universe as valid and as necessary as her day-to-day existence in reality. This failure to make a hierarchy, this failure to recognise the primacy of fact, justified her increasingly subjective responses. She refused to make a clear distinction between inner and outer. She had no sure grasp either of herself or of herself in relation to

the object. At first I mistook this pathology as the ordinary feminine.
(GS 190-191)

Winterson suddenly turns Jove into the typical villain, breaking his word, using people for his own goals. His philosophical position – which carries strong echoes of logical positivist thinking – becomes unsympathetic as it is embedded in an extremely narrow, selfish view of the world. Later, Jove is even willing to cut up his wife in order to empirically disprove the mystery of the diamond embedded in her hip (GS 190-196). Jove's rationalism leads to a cruel 'will to knowledge', to use Nietzsche's phrase. In this way, Winterson condemns the Cartesian bifurcation Mach and many of his contemporaries tried to establish.

Perhaps unexpectedly, Winterson finds an ally in Max Planck, even though he is a scientist: " 'Science cannot solve the ultimate mystery of nature because we ourselves are part of nature and therefore part of the mystery we are trying to solve.' (Max Planck)" (GS 82). By quoting Planck, Winterson targets the conflict between objectivist science and the Romantic spirit – not between science and art per se. We will see more evidence of this in the next chapters. Mach's aim to eradicate the mystery of nature by separating observations and sense impressions from memory and feeling, stands in complete opposition to Winterson's. It is her ultimate goal to create room for mystery and what Wittgenstein called "what we cannot speak about" (Wittgenstein 1961:151). The final lines of *Gut Symmetries* represent one of many places in Winterson's work where this becomes clear:

They were letting off fireworks down at the waterfront, the sky exploding
in grenades of colour. Whatever it is that pulls the pin, that hurls you past
the boundaries of your own life into a brief and total beauty, even for a
moment, it is enough. (GS 219)

In passages such as this, Winterson's magic realist philosophy of meaning – attaching value to visionary moments rather than to tangible reality – sets her far apart from the logical positivists and the rational worldview they represent:

The earth is not flat and neither is reality. Reality is continuous, multiple,
simultaneous, complex, abundant and partly invisible. The imagination
alone can fathom this and it reveals its fathomings through art. (AO 151)

The faith in science as a truth-finding instrument that characterises the early decades of the twentieth century went hand in hand with a firm belief in the progress of human civilisation through the development of science and

technology. Mach and his contemporaries were convinced that through this progressive development the difference between fact and fiction would become clear. Winterson believes nothing of the kind. Instead of being preoccupied with building up a better collective future, Winterson situates the attainment of meaning in a shattered complexity shaped by (a Romantic sense of) fragmentation and (a postmodern acceptance of) dispersion. She talks about the inevitably fragmentary notion of the self, and the role of fiction in the attempts to understand the broken pieces.

Piece by piece the fragments are returned; the body, the work, the love, the life. What can be known about me? What I say? What I do? What I have written? And which is true? That is, which is truer? Memory. My licensed inventions. Not all of the fragments return. (*AL* 136)

Winterson locates cognising subjects within a framework of disruption much like Derrida's. She is interested in the sensibility that allows us to reach those moments of truth in a world where meaning is so unstable that it seems to be in a state of quantum fluctuation. Subject, like physical phenomena, to the indeterminacy principle, meaning seems to be always on the verge of collapse. In her world, therefore, there is no place for a positivist sense of progress. In *Gut Symmetries*, the jigsaw is used as a metaphor for the impossibility of complete and successful attainment of meaning. The narrator, Alice, however, fears that "there is no picture, only fragments". Still, she says, "perhaps [there is] a beauty, if it were possible to find it" and "if there is beauty it will surprise me." And then she rephrases: "I said I suspect that there is no picture. I should have said that whatever the picture is, it will not be the one on the box" (*GS* 113). As we see in the next passage, Winterson's doubts about the possibility to attain complete meaning and successful correspondence causes narrative to be seen as a 'nightmare' rather than a fairy tale. That is why, although we need to tell stories, actually, 'no story can be told'.

Walk with me. Hand in hand through the nightmare of narrative. Need to tell a story when no story can be told. Walk the level reassuring floor towards the open trapdoor. (*GS* 157)

Transcendental meaning or beauty, can, however, be grasped if we look beyond the pieces and the fragments. This experience, however, is not a certainty, and if it is found at all, it is transient. Therefore, the modern view of human history as an "unvollendetes Projekt" (cf. Habermas 1990), a programmatic outline that

holds a promise of progress, would be too deterministic and too restricted a worldview for Winterson. Instead of positing a collective fiction as a guideline for humanity, Winterson creates imaginative or even visionary characters that live in a world of uncertainty and surprise – they cannot predict if or when they will be able to break through the constructs of that collective reality. Winterson's world encourages such transitions or escapes to other states, as we can see in *Art & Lies*, where Picasso becomes conscious of her desire to escape:

It is giddy, this fluid geometry, the points, solids, surfaces and lines that must undergo change. I will not be what I was. (*AL* 93)

As I will argue in chapter 5, Winterson feels that a visionary escape from a flat world of solid geometry is restricted to passionately inspired people – mostly artists, and mainly women. Such individuals can be guides for other people (like Fortunata is Jordan's guide in *Sexing the Cherry*) – but the way ahead, the way to lead one's life, is not a singular way – Winterson's ways are multiple and open-ended.

The influence of positivist schools such as the Vienna Circle and Frankfurter Schule lingers on until this day. If we look at the efforts of the sceptics societies (cf. page 9) or the work of scientists like Alan Sokal (cf. page 28), it is not surprising that Jeanette Winterson feels the need to keep reacting against the Enlightenment's heritage. It is not difficult to diagnose our own era as struggling between the legacies of both Enlightenment and Romanticism. Winterson firmly chooses the Romantic side in these philosophical riots, siding with all those that posit themselves within the metaphysical tradition. Anyone subscribing to positivist ideas, then, will be her opponent. "She had never heard of mixed feelings. There were friends and there were enemies" (*OAF* 3).

Winterson and Postmodernism

There are many aspects of her writing that allow us to call Jeanette Winterson a postmodernist, yet at the same time her work abounds with evidence to the contrary. Which aspects of her work lead us to conclude that she is, and when do we have to conclude that she is not?

At the root of the postmodern debate is the problematisation of 'fact' and 'fiction'. Brian McHale, the author of *Postmodernist Fiction*, argues that while a collective fiction, a so-called 'socially constructed reality' (cf. Berger and

Luckmann 1966) “constitutes the common ground of interaction among the members of society, these same members also experience a multiplicity of private or peripheral realities: dreaming, play, fiction, and so on. But these other realities are felt to be marginal; it is the shared reality that is ‘paramount’ ” (McHale 1987:37). It is precisely the marginalisation of these other realities that postmodern writers, like Winterson, object to. In the following passage from *Art & Lies*, we see how Handel’s juvenile alter ego (Frederick) balances private and collective realities against one another:

Fire water, dissolving mirage of the moving solid, aqua vitae. Truth or the image of truth?

The boy in the boat dragged his hands though the drowned city. At his motion the houses burst apart, only to reunite again, whole, in another patch of water. He looked up from the water at the steady copies of the images he saw (...) What should he trust? Their world or this other in his hands? Actual life or imaginative life. The world he could inherit or the world he could invent? (*AL* 198-199)

In the next passage Winterson shows us to which side she thinks the scales will tip:

The world of everyday experience is a world of redundant form. Form coarsened, cheapened, made easy and comfortable, the hackneyed and the clichéd, not what is found but what is lost. Invention then would return to us forms not killed through too much use. Art does it. (*AL* 199)

Winterson’s fictions abandon the collective construction and radically opt for personal inventions. In *Art Objects*, Winterson repeatedly argues that, in today’s society, we are in need of the kind of reality that only art can offer. At the same time, however, we have become afraid of the risks involved in changing our reality. We should overcome this fear, she strongly feels, and find the courage to plunge into invented worlds of our own making:

In search of this truth, beyond the fear of the consequences of this truth, are the flight-maps of art. When truth is at stake, and in a society that desperately needs truth, we have to be wary of those side-tracks to nowhere that mislead us from the journeys we need to make. (*AO* 117)

In this respect Winterson is very much a postmodern writer. As Theo D’haen indicates in his article “Postmodernisms: From Fantastic to Magic Realist”, “the

postmodern fantastic is not just symptomatic of, but literally identical with the postmodern freedom for the imagination to endlessly create.” (D’haen 1997:283). The postmodern is fantastic, because it is “cut loose from any ascertainable reality” (Ibid.) and is used as a “liberation of the mind” from the “functionalizing and dehumanising influences of an anonymous society that can only offer stereotypes and clichés” (Hoffman in D’haen 1997:283).

The notions that man is cut loose from any ascertainable reality and that there is no real world behind our (re)presentations of it, are central to postmodernity. As Hans Bertens formulates it: “postmodernism rejects the empirical idea that language can represent reality, that the world is accessible to us through language because its objects are mirrored in the language that we use” (Bertens 1995:6). This belief, often referred to as relativism, first started to take hold in the days when such discoveries as quantum physics made scientists realise that reality is in part shaped by human expectation, and when frictions between the different horizons of race, gender and class proved insoluble. The notion took hold that truth is culturally and linguistically determined. Due to this loss of consensus about what is ‘real’, postmodernists started to question the meaning of the images we produce, feeling that images present rather than represent a reality. Philosophers like Jacques Derrida and literary theoreticians like Paul de Man took this idea one step further by saying that texts – but this holds true for any form of postmodern art – must acknowledge their own performativity, their own self-referentiality. Postmodernism is very much concerned with the problematic relationship between text and its referent. To postmodernists “language constitutes, rather than reflects, the world, and (...) knowledge is therefore always distorted by language, that is, by the historical circumstances and the specific environment in which it arises” (Ibid.).

Winterson shares with these postmodern thinkers a problematisation of the relationship between signifier and signified. To her, knowledge and art exceed mere mimetic functions. Winterson does not want “real paintings, real words. All of us are subject to this bombardment, which (...) deadens our sensibilities” (AO 15-16). Not unlike philosophers such as Jacques Derrida and Paul de Man and contemporary writers like John Fowles and Angela Carter, Winterson wants to remain “resolutely outside the mimicry of Realism” (AO 72). For Winterson, language is the medium through which we can shape and understand an ‘Other’ reality: “Matisse’s distortions are not faulty Realism, they are a different kind of reality” (AO 49).

The question is, however, whether or not she thinks that the relationship between sign and world is completely lost – whether she believes in the breakdown of ‘correspondence’, the way Derrida and De Man do. In the following passage from *Art & Lies*, the poet Sappho discusses her art, especially the relationships between words and their meanings:

The wingèd word. The mercurial word. The word that is both moth and lamp. The word that rises above itself. The word that is itself and more. The associative word light with meanings. The word not netted by meaning. The exact word wide. The word not whore or cenobite. The word unlied. (*AL* 137)

It is clear that Sappho, ventriloquizing Winterson’s poetics, believes that words are more than mere representations of the real. Words are associative, and through their ‘wingedness’ they are not bound or heavy, but free and light. They connote more than they denote. The narrow meaning can widen. As Winterson’s advocate of passion and art, Sappho believes that language is creative, revelatory. But does this mean, in Bentham’s words, that ‘all poetry is misrepresentation’? Are words, then, so loosely connected to their referents that they cease to mean anything definite? Have they utterly come loose from their functions as signifiers? No. Winterson calls the word “not whore or cenobite” – words are neither promiscuous nor chaste. She feels that words must be “unlied” – the word must be stripped of the lie. She does not think, therefore, that words always misrepresent the world. Although they are associative, Winterson feels that texts are, in a way at least, faithful to an idea or meaning behind the text.

This may seem contradictory. How can a word be exact and associative at the same time? Winterson here assumes a position that transcends the binary opposition between realism and constructivism. Before explaining Winterson’s escape of this binarism, I want to stress that contemporary philosophers like Bruno Latour and Hans-Georg Gadamer too, attempt to overcome this bifurcation. We find it hard to escape from these oppositional pairs due to the way in which modern subjects have learned to think. Both Latour and Gadamer argue that, in the course of time, the modern mind was binarily shaped. We are used to consider opposites like subjective/objective, relative/absolute or fact/fiction as exclusive disjunctions. Something is either true or false. Something is either a personal fantasy or a generally recognised fact. Latour as well as Gadamer attempt, through their work, to deflate this oppositional thinking.

Latour's philosophy is a reaction against the dichotomy between radical subjectivism on the hand and a strong belief in objective knowledge on the other, a dichotomy that helped shape modernity. He re-establishes the objective nature of the object, without excluding the social shaping of it. In the opening paragraphs of "Do You Believe in Reality. News from the Trenches of the Science Wars" he sneers at linguistic (and social) constructivism:

Yes, we have lost the world. Yes, we are forever prisoners of language. No, we will never regain certainty. No, we will never get beyond our biases. Yes, we will forever be stuck within our own selfish standpoint. Bravo! Encore! (Latour 1999:8)

But Latour is not aiming at the total eradication of the notion of 'social shaping'. His philosophy denounces both subjectivism and objectivism. The following passage neatly sums up his position. Here, he describes the mutually exclusive points of view that have brought forward a division within the western mind. He firstly talks about social constructivism, and secondly, he addresses objectivism:

In the first denunciation, objects counts for nothing; they are just there to be used as the white screen on to which society projects its cinema. But in the second, they are so powerful that they shape the human society, while the social construction of the sciences that have produced them remains invisible. (Latour 1993:53)

In his attempt to overcome this division, Latour introduces the notion of hybridity. He argues that people have never been able to distinguish between value, truth, and myth, and that they can only learn to understand the world if they abandon these categories. For as long as people believe that hybridisation is undesirable and seek for purity, they are subscribing to what he calls the 'Modern Constitution'. Hybridity is a taboo within modernity's self-image. Only when people begin to accept the entangledness of objects, ideas, constructs, aims, facts and fantasies, can they start to understand the social processes that weave these things together, and begin to understand their cultural identity as 'non-moderns'. Another way to overcome the bifurcation between subjectivity and objectivity, similar to Latour's 'meeting in the middle', is proposed by the German philosopher Hans-Georg Gadamer. When discussing Gadamer's hermeneutic method, R.J. Bernstein says:

(...) philosophic hermeneutics contributes to overcoming the Cartesian Anxiety [the separation between subject and object, A.E.] and helps us to move beyond objectivism and subjectivism. (Bernstein 1983:114)

Gadamer mostly speaks about the relationship between the world of art and the cognising subject, but this discussion can easily be extended to the relationship between the world in general on the one hand and on the other hand any human being trying to understand this world. When I use the phrases ‘on the one hand’ and ‘on the other hand’, this is in fact inaccurate, because it is precisely this fabrication of oppositions Gadamer’s project seeks to end. In his account of Gadamer’s philosophy, Bernstein explains that

A work of art is not to be thought of as a self-contained and self-enclosed object (something *an sich*) that stands over against a spectator, who, as a subject, must purify himself or herself in order to achieve aesthetic consciousness of the work of art. (Bernstein 1983:123)

Instead, we should

Recognize (...) the primacy of the play itself, the to-and-fro movement of play, the sense in which play has a rhythm and structure of its own – then we may begin to realize that to analyze play in terms of the attitudes of subjects toward what is objective or ‘out there’ distorts the very phenomenon that we are trying to describe. (Bernstein 1983:122)

And,

Understanding must be conceived as a part of the process of the coming into being of meaning, in which the significance of all statements (...) is formed and made complete. (Bernstein 1983:125)

The notion of play within the process of coming into being of meaning, therefore, is not considered to be detrimental to understanding. The formation of significance in fact consists of the to-and-fro movement between what the world has to offer to the subject and how the subjects tries to match his horizon of interpretation with the object. These attempts at convergence are, for Gadamer, the essence of understanding. Summing up, both Latour and Gadamer are trying to define that middle ground between the *Welt an Sich* and the solipsistic subject, attempting to escape from the bifurcation between objectivism and relativism they both experience as a dead end.

Winterson, too, refuses to accept this bifurcation, and in the next passage, taken from *Oranges Are Not the Only Fruit*, she unequivocally rejects both objectivism ('true things to be found') and relativism ('all kinds of things can be proved'):

Some people say there are true things to be found, some people say all kinds of things can be proved. I don't believe them. (OAF 91)

Winterson believes that words can be exact and associative at the same time. By saying so, she diminishes the opposition between mimesis on the one hand and creation and expression on the other, in an effort to overcome what Bernstein calls the 'Cartesian Anxiety'. In one of the essays in *Art Objects*, where she displays her admiration for Virginia Woolf's work, she expounds her views on this topic:

Exactness allows intimacy. The exactness a poet seeks is not the pedantry of the grammarian or the pile of dead bodies to be found in any technical manual. It is the same inspiration of relationship that the painter seeks, that the architect seeks, that the musician seeks. It is a harmony of form. A closed balanced series of weights and measures and proportions that agree with one another and that agree as a whole. Poets and cathedrals sing.

The language of *The Waves* is the language of rapture. For some people this is embarrassing. The twentieth century, in the footsteps of the nineteenth, has difficulty with the notion of art as ecstasy. Yet that is the traditional notion and I believe it is the right one. It is quite easy to live at a low level of sensibility; it is the way of the world. There is no need to ask art to show us how to be less than we are. It is heightened, grand, an act of effrontery. It is a challenge to the confines of the spirit. (AO 93-94)

To Winterson, exactness does not stand in the way of rapture and intimacy. Her words are not exact in a mechanical or mathematical sense. What she refers to is an organic and monist form of understanding, that does not exclude the use of emotion from the attainment of truth. This in fact allows words to evoke worlds that transcend everyday reality, yet always to be connected to reality. The experience of a dull and dreary reality is the experience of a reality of badly chosen words, of words used carelessly. Winterson adds:

There is no fight between exactness and rapture. *The Waves* is carried away by its own words. The words in rhythmic motion in and out, preoccupying, echoing, leaving a trail across the mind.

Rapture is a state of transformation. Woolf lifts up the veil of words that filmy or thick hides myself from the moment, you from me. These are not words to pad me against emotion or to be chanted as a prayer to make life safer than it is. These are words that cut through the semblance of the thing to the thing itself. Against the blunted days of approximation comes the clarity of the Word. This is frightening, this is a relief. This is what I have been hoping for and what I fear. (...) Reality of language, rapture of language, exactness of words that has found me out. Words than wipe clean the dirt on the window-pane leave me with an unexpected view. (AO 94-95)

In this passage Winterson not only describes what art and language should do, she also succeeds in meeting her own demands: her words have a cutting precision and yet carry us away, move us in their furious amorousness. Winterson both argues *and* shows us that exactness and passion do not exclude one another. Through this heightened state of emotional sensibility, she feels, we can reach an un mistakeable truth. This poetics is in fact Romantic – or perhaps Neo-Platonic – but not postmodern. By holding on to ‘exactness’ and by believing in the possibility of a precise understanding of the ‘thing itself’, Winterson’s poetics resists Derrida’s idea that “the absence of the transcendental signified extends the domain and the play of signification infinitely” (Derrida in Rice & Waugh 1996:178). Indeed, Winterson holds that signification is finite. She will not let go of the “transcendental signified”, which limits the domain and play of signification. Winterson won’t let go of reality as a presence:

To suggest that the writer, the painter, the musician, is the one out of touch with the real world is a doubtful proposition. It is the artist who must apprehend things fully, in their own right, communicating them not as symbols but as living realities with the power to move. (AO 145)

Yet, where Derrida and Winterson share a desire to free words from their mimetic harnesses, they do so with different goals in mind. They both stress the freedom and play of rhetoric, but Derrida ends up as a relativist, whereas Winterson holds on to the ‘exactness’ of the word. This exactness is an emotional mimesis, and in that sense, a transcendental or visionary mimesis. For instance, when Monet tried to capture the different faces of Rouen Cathedral, his

personal emotions of the moment and the handicap of his impaired eyesight did not prevent him from creating an image that feels 'true' to many people. To Winterson, this aspect of personal distortion (subjectivity) is an essential part of her idea of representation (of objectivity).

So we see that Winterson clearly opts for a 'middle ground', much like Latour and Gadamer. She fuses objects, ideas, memories, facts and fantasies into a new reality, beyond, yet not unconnected to, the *Ding an Sich*.

If the true artist is connected, then he or she has much to give us because it is connection that we seek. Connection to the past, to one another, to the physical world, still compelling, in spite of the ravages of technology. A picture, a book, a piece of music, can remind me of feelings, thoughts, I did not even know I had forgot. (40 13)

Although Winterson makes use of postmodern techniques (notably open-endedness, fragmentation, and alternative history writing), Winterson is not utterly sceptical about the breakdown of meaning, truth and reality. The fragmentation of her narratives is omnipresent, fluid transitions between paragraphs are often lacking, and her characters often express opinions that appear to favour the dispersion of meaning (cf. page 67). Yet, Winterson always presents an all-encompassing, comforting unity – an almost transcendent experience suggesting the presence of eternal value and beauty, celebrating a visionary mimesis, and exactness in a state of rapture.

Winterson feels that a postmodern liberation from clichéd and collective constructions of reality, a liberation from grand narratives and the dominance of reason, does not justify a relativist philosophy, but offers us instead a non-postmodern opportunity to become more real:

If we can fictionalise ourselves, and consciously, we are freed into a new kind of communication. It is abstract, light, changeable, genuine. It is what Wordsworth called 'the real solid world of images'. It may be that to understand ourselves as fictions, is to understand ourselves as fully as we can. (40 60)

To Winterson, the fictionalisation of the self, the enchantment of the world and the abandonment of traditional objectivity does not lead to the idea that there is no extra-linguistic reality. The human imagination and our language shape the world and only through a poetic sensibility we can begin to understand 'other' realities, but that does not mean that the world does not thrust itself upon us.

The most telling passage in which she addresses this, is the passage already quoted on page 72, which is taken from the three-page chapter called ‘Deuteronomy’, in *Oranges Are Not the Only Fruit*:

Some people say there are true things to be found, some people say all kinds of things can be proved. I don’t believe them. (OAF 91)

In the Bible, Deuteronomy is the lawbook of truth; it appeals to divine authority. The special status of ‘Deuteronomy’ in *Oranges* arises from the fact that it has an unknown narrator, speaking in a philosophical tone that is not found in any of the other story-lines that make up the book. This separate piece of writing thus gains a general, impersonal credibility. The voice, paradoxically enough, appears to abandon ‘truth’ and ‘authority’; it installs the postmodern notions of subjectivity and play into the heart of epistemology. Although she grants that subjectivity disables objectivity, Winterson in the end does not equate subjectivity and play to the kind of relativism that we find for instance in the work of Paul Feyerabend. His phrase ‘anything goes’ indicates his belief that, in principle, all forms of scientific theories are worthwhile. He argued for theoretical pluralism, whereby scientists are invited to construct as many different theories about the same thing as possible. Unlike the positivists, Feyerabend believed that theories give meaning to facts, not the other way around. Winterson, however, rejects such relativism. Moreover, she abandons the uncompromising either-or distinction between objectivism and relativism. Winterson dismisses both extremes. Instead, Winterson favours the subjective authority of the subject and its true will to grasp the ‘other’. Although she often plays with postmodern abandonment of a knowable world, in the end, she does not abandon reality as such – because the subject cherishes ardent passions for objectivities like beauty and love.

The invocation of fantastic realms and the attachment of an objectivity status to those realms does not have mere aesthetic motivations. Such ‘otherworldliness’ is infused with political meaning. To Winterson – and other feminine authors of the late twentieth century – it is necessary to overthrow the established order and to decentralise what has become centralised over time. In the way in which it voices the opinion of squatters, bums, murderers, coloured refugees, whores and other non-‘white Anglo-Saxon protestant males’, Winterson’s work is strongly geared towards the centralising of the ex-centric. She aims to restore those values that have been marginalised by the strength of

the modern voice – the feminine irrational, the unstable and uncertain nature of knowledge, the epistemological value of art, and the necessity of mysticism and intuition within the human epistemic system. The modern worldview held in place by the concepts ‘man’ and ‘reason’ is destabilised and replaced by the otherness of ‘woman’ and ‘emotion’. This leads me to conclude that Winterson’s work – like other postmodern art “cannot but be political, at least in the sense that its representations – its images and stories – are anything but neutral, however ‘aestheticised’ they may appear to be in their parodic self-reflexivity” (Hutcheon 1989:3). Winterson marginalises the established order, resting on the massive pillars of essentialism, universalism, and patriarchy, and establishes an almost utopian new world made up of elements that escape these categories.

Jeanette Winterson’s utopia, however, is different from that of most other postmodernist writers, who consider the privileging of one set of values above another as inherently totalitarian. Winterson returns to the Romantic (and originally Platonic) idea that the artist is the guide of mankind in sensing and showing which set of values is the right one for the liberation of mankind. In Percy Shelley’s philosophy, the poet plays the central part in showing man the world anew. Shelley found that if there would be no more poets, “language will be dead to all the nobler purposes of human intercourse” (Adams 1971:500). He says that poets are the ‘legislators of the world’ because they create new linguistic possibilities: the poet governs the way reality is depicted in language, and can thus reveal reality, since by no other way than through language can reality be understood. The poet re-creates the world by changing the forms by which the ordinary man sees the world:

Poets are the hierophants of an unapprehended inspiration; the mirrors of the gigantic shadows which futurity casts upon the present; the words which express what they understand not; the trumpets which sing to battle, and feel not what they inspire; the influence which is moved not, but moves. Poets are the unacknowledged legislators of the world. (Shelley in Adams 1971:513)

Winterson’s idea of the cultural function of the poet fits in very well with Shelley’s ideas:

When we say ‘I haven’t got the words’, the lack is not in the language nor in our emotional state, it is in the breakdown between the two. The poet heals that breakdown and not only for those who read poetry. If we want a living language, a language capable of expressing all that it is called upon

to express in a vastly changing world, then we need men and women whose whole self is bound up in that work with words. (40 35-36)

In Winterson as in Shelley, the poet's work is indispensable for the creation of a changing language. In their poetics, language is regarded as the only means by which reality can be understood, a reality that both writers regard as utopian.

Towards the end of the sixth chapter of his *Unsere Postmoderne Moderne*, Wolfgang Iser discusses the question whether there is a relation between postmodernism and utopian thinking. He concludes that postmodernism is neither purely defeatist nor purely visionary and that, despite its "Begrenztheit der eigenen Perspektive" one utopian idea remains implicit in postmodernism – and that is "die Utopie (...) der Vielheit" (Iser 1991:183). A pluralist utopia has become the substitute for the grand narratives that dominated modernity from the seventeenth to the nineteenth century. Jean-Francois Lyotard's project is a blueprint for such a pluralist utopia. He feels society should be founded on respect for the differences within societal life. To him, a utopian society is one where the search for justice and the search for the unknown are equally respected. Lyotard's ideas, therefore, show that postmodernism and utopian thinking are not mutually exclusive and can be integrated in a single philosophy. Characteristic of this postmodern longing for a utopia, is the fact that any shared and broad view of reality is linked to discontentment. Postmodern man does not feel comfortable in the world, but is yearning for an ideal of plurality, where he hopes to find a new "Begeisterung" (Ibid. 184). In this respect Winterson cannot be called a postmodernist. She does not reject the vision of unity as a mono-utopia. She strongly believes in the Romantic idea that this "Begeisterung" can be brought about by another Unity; by Oneness.

If we look at Winterson's fiction, it appears to embrace pluralism and seems to echo a pluralist philosophy. Her "Vielheitsinteresse" can be found, for instance, in her treatment of 'self', such as in *Gut Symmetries*, where the traditional notion of 'self' as a coherent entity dissolves as Stella describes how her self is dispersed through time:

The point that I am, the definite bounded thing in time, is beginning to break up. I am dispersing myself through my known past and my unknown future. The present is without meaning. (GS 185-186)

The sense of who I am is strengthening and weakening simultaneously. (GS 186)

Even the most intimate knowledge, the knowledge of one's own being, one's own identity, is lost in confusion. Winterson often attaches such rich imagery of fragmentation to moments of crisis. We saw something similar happen to Jordan in his search for himself (cf. page 58). However, the sense of fragmentation that emanates from Winterson's work, is always overshadowed by a much stronger sense of prophetic certainty powered by a strong belief in art. And although this position undermines – as postmodern art tends to do – the dominance of reason, it is not a postmodern stance at all. Although it is clear that Winterson reacts against modernity, her work is not vintage postmodernism at all. But it must certainly be placed right at the heart of modernity's countercultures, as they have been emerging and re-emerging over time.

Enchantment as Resistance

What is crucial to Winterson's work is an affirmation of the values of art. She denounces the Enlightenment worldview of Descartes, Hobbes and Newton as utterly rational and economic (and therefore distorted), and contrasts it with the world of art, where visionary power and imaginative freedom produce true knowledge of the world. This true knowledge, however, should not be confused with objective knowledge. Winterson's revelation of true knowledge lies in a subjective experience – by which the fantastic becomes an integral part of the material world. She would say that knowledge of the world is inevitably personal, which does not make it any less trustworthy. Winterson dismisses the idea that disinterested knowledge would be free from any cultural 'infection', and combats the idea of fiction as a noxious brew of chaos. She does this with a fervour not unlike that of freedom fighters, heroes in a struggle for a better world. As Theo D'haen says in his article "Postmodernisms: From Phantastic to Magic Realist"

(...) magic realism is a form of resistance. (...) Joined to the increasing preeminence awarded to the discourse of reason, *ratio*, especially from the eighteenth century on, this western sense of history [or science; A.E.] allowed for the marginalization of all non-Europeans and of large groups within Europe itself [poetry; A.E.]. The realist novel, in the guise of *as if* history [as-if science, A.E.] quite "naturally" celebrated the faith in reason (...) (D'haen in Bertens and Fokkema 1997:289)

Jeanette Winterson's creation of enchanted, fairy tale worlds is an act of resistance; they emerge from a grudge against those forms of science that sought to enlighten our world, that are the institutionalisation of common sense and

rationalism. Again, Winterson's attitude is both postmodern and Romantic. Romantic art is directed against the superficiality of society and sought to escape to different times, exotic places and into the more mysterious workings of the mind. It is escapist and directed against the dull life devoid of imagination. This description will fit Winterson's work equally well. Winterson's depiction of the world is postmodern in the sense that it can be considered directed against those realistic discourses that represent the dominant cultural order. As we will see in chapter 3, Winterson's imaginative representations of the world (and space in particular) can be seen as a revolt against the domination of a metanarrative that overpowers and censors alternative discourses that subsequently become marginalised. In Jeanette Winterson's novels, the Newtonian worldview is regarded as the overpowering regime. In her work, a fantastic, or even magic realist concept of space, challenges the Newtonian mechanical representation of the universe.

We can conclude that Jeanette Winterson opposes the ideas of universality and fixity, and that she positions herself as an enemy of modernity. Her love of fragmentation and her interest in the subjective entail a disapproval of the universal, the objective and the power of metanarrative. Winterson rejects the Enlightenment belief in the mechanical (and therefore predictable) nature of the world, its trust in scientific method and a detached objectivity, and its belief in the progress of science. Winterson's anti-mechanical attitude is partially inspired by the pre-modern world of magical thinking, partly inspired by Romanticism as the counterculture against Enlightenment methods of understanding, and at the same time it shows parallels with anti-rational trends within our age, i.e. the New Age movement. Yet, at the same time, Winterson is a metaphysic and a magic realist. She interweaves everyday reality with dreams, fairy tales and myth. Her work is, all in all, firmly rooted in the anti-modern tradition. Winterson allies herself with all the manifestations of this tradition, varying from postmodernism and Romanticism to hermeticism and sometimes even Neo-Platonism:

I hope. And the hope that is in me is from the soul is for the soul. Not present, actual, superficial life, but the real solid world of images. I hope that the real solid world of images will prevail. (*AL* 143)

Winterson's fiction shares many characteristics with other postmodern literature. On the most fundamental level, however, Winterson refuses to fully accept the central tenet of postmodernism – its linguistic turn. Winterson refuses

to accept art's presupposed inability to reach beyond the merely self-reflexive, as to her, art connects us to a metaphysical reality. But Winterson's metaphysical world is unstable and unpredictable – which would again make her a postmodern writer. Indeed, in Winterson's works, the attainment of meaning is wound up in its own unique historicity and is not universally present. Winterson rejects all constant and unchangeable physics and metaphysics. Moreover, as we will see in chapter 5, Winterson's politics of centralising the ex-centric partly fails, as her work keeps on inscribing the modernist dualities, especially the one between masculinity and femininity.

The duality between science and literature deserves extra attention, here. As we can see in the following passage, the dichotomy between science ('Time') and literature ('poem') is caught up in a political struggle like the one described above. In the following passage, Sappho proclaims herself a warrior against science, defending the value of poetry. Her words reveal Winterson to be a postmodernist and especially an anti-modernist. But two dualities that have shaped modern thinking remain forceful: science versus literature and masculinity versus femininity:

I have raided my own body and made my poem out of his. Split Time's metre and snapped his smooth rhythms. I have learned his forms and mastered them and so become mistress of what is my own. I am a warrior and this is the epic of my resistance. (*AL* 64)

In the following two chapters, I shall look at the ways in which Winterson attempts to bridge the gap between science and literature. I will argue that she neither rejects nor celebrates science categorically, but that she only rejects science when it enforces pure notions of masculinity and rationality. Winterson embraces the foundations and imaginative potential of the new sciences, as they seem to sustain her Romantic as well as postmodern aesthetic world – a world in which fiction is no longer equalled with untruth and a world in which feminine values are respected. In the next chapters, I shall therefore interpret her literary strategies as attempts to produce a fusion between the two cultures.



3

PLACE, SPACE AND UNCERTAINTY

In her writings, Jeanette Winterson refuses to accept the conventional concepts of place and space produced by the realistic discourses of the dominant cultural order. For Winterson, that dominant order is the Newtonian mechanistic model of the universe, postulating a stable and deterministic world. Winterson's hostility, based on her Romantic and postmodern anti-realism, leads her to construct alternative realities, referring to current theories in physics, metaphysical concepts and literary orders. What metaphors does she borrow from physics to create these alternatives? How does she construct these fantastic, or even magic realist images of place and space? And how do these images serve her political goals?

Aesthetic Antidotes

Winterson makes use of alternative ideas of space to describe our daily environment, the universe, and our inner world. She disrupts the modes of ordinary linguistic discourse to tear her readers loose from their commonplace ideas of place and space, and to renew their lost capacities for fresh experiences. She also blames the mechanistic worldview for the loss of enchantment, and for marginalising myth. To her, mechanistic and empiric science is depressing. In her short story "A Green Square", for instance, the narrator accuses science: "Deep space is a litter-garden of clapped out rockets and abandoned probes. We'll be going there ourselves soon. Human detritus on its final adventure" (*TWOP* 197). By means of various literary strategies, Jeanette Winterson constructs alternative ideas of space as antidotes to the gloom of the commonplace. She leaves behind the dominant uncompromising worldview of fixity and immobility, and creates postmodern spaces that embrace dynamic developments and fictional worlds. Current scientific ideas, borrowed from quantum physics and the Grand Unified Theory, are used to 'fertilise' those macroscopic and microscopic spaces. Winterson, therefore, does not categorically abominate science. When science is able to furnish fascinating metaphors to describe postmodern spaces, uncertain

and unstable, she celebrates science as an integral part of a dynamic concept of culture that calls to mind Porush's Eudoxical discourse (cf. page 27) or Hayles' cosmic web (cf. page 24). When physics underwrites Winterson's postmodern goals, when science supports an irrational, dynamic, fluid, and unstable concept of space and place, Winterson's usual enmity toward science makes place for approval. It is then that science and literature become complementary, collaborating in the undetermined, complex and fertile process of expressing our experience of reality. Only then science and beauty go hand in hand, as in this quote from "A Green Square":

We were in a boat and the sea was deep and clear. I've seen a photograph of the earth, copyright NASA, taken from the moon. The seas cup the world in blue. The blue-held world rested on light.
The sea is not dark and dense but banded with light, as if the light could be mined. I'm an optical millionaire, floating on gold and platinum, gold beads on the surface, pale bars beneath.
I'm as rich as a fish. (*TWOP* 198-199)

The NASA photograph, product of technology and symbol of scientific achievement, is the source of an aesthetic experience. As the story unfolds, this experience turns out to be a significant moment in the psychological development of the narrator. The beauty that astronomy produces becomes one of the main ingredients of the narrator's psychological space – his utopia. Here, we are confronted with a specifically Romantic element of style: Schiller's 'aestheticisation' (cf. page 55) or Novalis' 'Romantisierung der Welt' (cf. page 56): Winterson enriches the meaning of the scientific object by means of this Romantic literary strategy.

It is not only that objects from science are interpreted aesthetically; scientific elements are often described as if they are endowed with life or even human feelings. In the extract that follows, Winterson stages a sudden and spontaneous fusion between physics and sex. An almost cinematic transition links the characteristics of space with those of a female body.

If light travelled in a curved line it would mean that space itself is curved.
(Pitch of her body under me.)
'Alice?' (*GS* 17)

Winterson infuses the abstraction of space with very direct, warm and tangible feelings. This also happens the other way around: human behaviour is often

compared to the behaviour of macrocosmic bodies or of microcosmic particles. Objects are personified and persons are 'objectified'. Winterson's ideas of space involve a blurring of the boundaries between subject and object. She imports scientific concepts into literature and 'fertilises' them by applying literary strategies and by attaching mythical and religious associations to them. In the following passage from *Gut Symmetries*, the natural laws that apply to microscopic structures and that are explained within the framework of the Grand Unified Theory (GUT), are applied to the love affair between Jove and Alice. When heated, microscopic structures react in ways that correspond to the manner in which the relationship between Jove and Alice develops. Changing positions at sub-atomic level parallel changing positions in their relationship.

Our affair, like every other, was conducted inside a *vas hermeticum*: a sealed vessel, shut off from the world, to boil and cool according to its own laws.

What did we hope for, heating and re-heating ourselves to absurd temperatures? (...) At about a billion degrees K (...) he and she might begin to counterfeit the interior of a neutron star and could rapidly be heated further into sub-atomic particles. You be a quark and I'll be a lepton.

If we had the courage to cook ourselves to a quadrillion degrees, the splitting, the dividing, the ripping, the hurting, will be over. At this temperature, the weak force and the electromagnetic force are united. A little hotter, (...) GUT symmetries appear. (GS 100)

Besides personification, Winterson also uses incongruence as a strategy to evoke alternative realities. In the following excerpt, fantasy, volatile and spiritual, lacking spatial form and having no physical presence, is juxtaposed to an idea of space that does involve size, form and place. This juxtaposition produces a mysterious question:

Infinitely tiny, perhaps, but even without a lover's gaze, how many fantasies can force themselves into an infinitesimal space? (AL 30)

There is, however, more to the question than the strange effect caused by the incongruity of the concepts used. The philosophically inclined reader will be reminded of Thomas Aquinas' old scholastic question "whether several angels can be at the same time in the same place?" (Aquinas 2003, q. 52, art. 3). This question is an intriguing example of the old amalgam of metaphysics and

mathematics, of speculation and logic. It takes us back to a period when disciplinary separations within western intellectual thinking did not yet exist. Winterson's question, therefore, does not only serve to free the imagination, but also to recall and pay homage to a way of thinking that got lost.

Explorations of the philosophical concepts of finiteness and infinity, as in the lines above, figure prominently in Winterson's writing. Her panorama of endless fantastic epistemological possibilities celebrates infinity. Limitations, borders, confinement, and stability are rejected. In *Art Objects*, she proclaims the inability of the applied sciences (technology and medical science) to escape from the dreariness of a finite world. The universe is infinite, and in their minds her characters long to be part of that infinity. Winterson believes that art helps them to emotionally experience infinity, an experience that is blocked off by the restraints of everyday life. Art overcomes this constraint of common experience:

We know that the universe is infinite, expanding and strangely complete, that it lacks nothing we need, but in spite of that knowledge, the tragic paradigm of human life is lack, loss, finality, a primitive doomsaying that has not been repealed by technology or medical science. The arts stand in the way of this doomsaying. Art objects. The nouns become an active force not a collector's item. Art objects. (40 19)

Winterson hints at the kinship between theoretical physics (the expanding universe) and art, and complains that, unlike the arts, the applied sciences have not been able to absorb concepts like infinity. Winterson's work shows us that she is very much aware of the fact that certain branches of science have explored alternative ideas of space. She uses the correspondences between art and the new sciences to her own advantage. Non-Euclidean geometry, for instance, revolutionised the field of geometry, challenging the limited assumptions of Euclidean geometry. Both in non-Euclidean geometry and in Winterson's writing, habits of visualisation that have their basis in the self-evident and in common sense, are replaced by more complex, imaginatively richer concepts of the framework in which bodies move. A new visualisation of this framework suddenly forces itself upon the characters, and only then an hitherto invisible reality reveals itself. Revelations of other layers beyond the surface, of new dimensions in space, lead to unexpected turns in characters' experiences. They also account for the sudden narrative turns that occur in Winterson's writing. The unexpected swing from Russia to Venice in *The Passion* is an example of such

a turn. The following passage from *Sexing the Cherry* shows how revealing such an experience can be:

A man or woman sunk in dreams that cannot be spoken, about a life they do not possess, comes suddenly to a door in the wall. They open it. Beyond the door is that life and a man or a woman to whom it is already natural. It may not be possessions they want, it may very well be the lack of them, but the secret life is suddenly revealed. This is their true home and this is their beloved. (STC 74)

All through her work, Winterson repeatedly states that life is not a continuous stream – it is built from scattered parts, places and experiences. The ruptures and jumps in her narrative structures reflect that insight. Winterson's characters' mental breakthroughs and the ways in which the environments in her novels behave, often involve abrupt transitions as well. Winterson tries to elucidate how her narrators experience radical changes in (their perceptions of) time and space. More than once, she uses geometrical metaphors to do so. The possibilities that are unlocked by non-Euclidean geometry (e.g. the theoretical existence of wormholes) have had an enormous impact on our worldview. Winterson's narrators experience revelations similar to scientific revolutions like this particular one.

Winterson refers directly to non-Euclidean thinking in *Gut Symmetries* only. In her earlier writings, she merely hints at the strange behaviour of surfaces and lines. The following passage from *Sexing the Cherry*, for instance, suggests a non-Euclidean concept of space:

Start another drawing (...) and (...) identify, if you can, the places you have not found yet on those other maps, the connections obvious only to you. Round and flat, only very little has been discovered. (STC 81)

Whether Winterson here is only referring to the revolution from the flat earth theory to the idea of the earth as a globe, or also to the revolution from Euclidean to non-Euclidean space, is not certain. She does not mention Euclid in her early writings, yet the revolutions in the perceptions of space she describes are strikingly similar.

The difference between Euclidean and non-Euclidean thinking, without going into too much technical detail, is that the former recognises forms and shapes only in a flat space, whereas the latter takes curved space into account. So where in the one case the shortest path between two opposite points on a circle

is through the centre of that circle, in the latter case the shortest distance may be to follow the circle. Non-Euclidean thinking questioned certainties that appeared to be self-evident in Euclidean thinking: in this system parallel lines can meet, triangles become deformed, and short distances may turn out to be detours. The interesting thing is that these two concepts of space – Euclidean and non-Euclidean – are in fact both valid, although they seem very much opposed.

After the discoveries of non-Euclidean geometries the duality of physical and possible space was recognized. (Reichenbach 1958:6)

Non-Euclidean images of space, though, are not easy to demonstrate and not self-evident. They are counterintuitive and hard to visualise. The non-Euclidean concept of space is therefore much better suited to magical worldviews than the scientific rigor of the Euclidean system, which is always transparent, lucid and logical.

In *The Philosophy of Space and Time*, Hans Reichenbach investigates the limits to our visualization of (elements of) space. He says that one is not able to visualise all possible forms of space: “there exist limits for visualization that prevent the production of images from going beyond certain simple relations”. “we can visualize a sphere, but not of the dimensions of the earth.” He says that what we can more easily visualise are elements of Euclidean geometry because it includes theorems of similarity. “In non-Euclidean geometry there are no such theorems” (Reichenbach 1958:44-45). A number of axioms form the foundation of the Euclidean system. Axioms were thought to be “so self-evident that their truth was accepted without reservation” (Reichenbach 1958:1). These axioms subsequently gave rise to theorems, which, in turn, were considered equally true. “Geometry thus became the prototype of a demonstrable science, the first instance of a scientific rigor which, since that time, has been the ideal of every science” (Ibid.). The axioms and theorems in Euclidean geometry are thought to be self-revealing data accounting for empirically perceived space as an empirical fact. Cambridge philosopher Robert Audi states that

From the point of view of logic and rigor, Euclid was thought to be an apotheosis of certainty in human knowledge; indeed, ‘Euclidean’ was also used to suggest certainty, without any particular concern with geometry. (Audi 1996:251)

Winterson’s views on Euclidean geometry affirm Audi’s statement:

In the nineteenth century, most people knew their place, even if they did not know the mathematics that predicated it. In a strictly three-dimensional world, where the shortest distance between two points is a straight line, the comings and goings of sexual intrigue could be measured with reassuring accuracy. On a flat sea the boat hardly rocks. What happens when the sea itself plunges away?

1856. A poor obscure tubercular German called Reimann delivered a lecture calculating that Euclid is valid only in terms of flat surfaces. If the surface were to turn out not to be flat then two thousand years of mathematical smugness might not be smiling. (GS 17)

Here, Alice, one of Winterson's protagonists, almost triumphantly professes the impact of non-Euclidean thinking. Winterson thus blends non-Euclidean thinking into the situation in which her characters find themselves: in a love triangle, on a boat. She uses the metaphor of line and figure to express that, as we live in a non-Euclidean paradigm, the nature of human lives and relationships is not self-evident. Lives intermingle that should have remained separate. Relationships emerge that were inconceivable before. The mystery in Winterson's alternative to Euclidean mathematics comes about by means of metaphoric relationships: lines substitute for lives and figures are interchangeable with relationships. When the laws of non-Euclidean geometry are at work, lost lovers will find one another, because "parallel lines always meet" (GS 17). Finally, the shift to the non-Euclidean paradigm produces a world that is not only imaginatively richer, but also more threatening: non-Euclidean life is less secure in every possible way.

Jeanette Winterson rejects the way in which Euclidean thinking, with its aura of certainty, has become the dominant mode of thought in our society. When, in the passage above, she suggests that branches of science such as Euclidean geometry have produced sets of self-evident principles that were accepted as common sense and gradually acquired the status of truth in the wider cultural setting, she also proposes a revolution in that cultural setting, in everyday reality, similar to the movement from Euclidean to non-Euclidean geometry. From interviews, we know that Winterson considers herself a prophet of such a revolution between systems of thought. That is also why certain critics have described her as an "evangelist" (Vermij 1991), a "saviour" (Wytzes 1997), and a "preacher" (Turner 1994), and called her style "hammering" (Peeters 1995) and her appearance "that of an omniscient prophet" (Heijne 1994). The fact that Winterson indeed preaches a revolution can be seen in *Art Objects*:

If I say that now, writing now, are too many people who have no concept of art as energy, of art as space, I think you will follow me. I think you will realise that if fiction is to have any future in the technological dream/nightmare of the twenty-first century, it needs, more than ever, to remember itself as imaginative, innovative, Other. (AO 178)

It is for a new generation that I write. (AO 192)

Both in her essays and in her fiction, Winterson's diction betrays which ideas of space she favours and which ones she rejects. Her choice of words often functions as the external marker of philosophical statement. The alternations of vocabulary and her use of figurative language in the following passage clearly pinpoint what she dislikes about science:

Here are the coordinates: Five hours, thirty minutes right ascension (the coordinate on the celestial sphere analogous to longitude on earth) and zero declination (at the celestial equator). Any astronomer can tell where you are.

It's different isn't it, from head back in the garden on a frosty night, sensing other worlds though a pair of binoculars? I like those nights, kitchen light out, wearing Wellingtons with shiny silver insoles. (TWOP 55)

In the first paragraph, Winterson's words echo Thomas Sprat's "close, naked" style of speech and writing, bringing language as near as possible to what Sprat called "Mathematical plainness" (cf. page 50). The vocabulary is dull and barren and the phrase 'any astronomer' expresses her clear disdain; the mathematical method brings out nothing noteworthy or unusual. In the second paragraph, however, Winterson's diction takes a different turn: the narrator is describing a unique personal experience. A highly intimate world is revealed, cosy and pleasant. This alternative way of looking at the universe is obviously considered to be more valuable. Winterson's diction is the vehicle of a philosophical statement: the unique and subjective idea of space is more important than the objectively and falsifiably reproducible one.

We have seen that Winterson's alternative ideas of space result from a 'fertilisation' of scientific vocabulary and scientific ideas through aestheticisation, personification, incongruity, metaphor, and an intimate poetic diction. She forges a union between the two cultures through literarily fortified scientific imagery, a union capable of repelling a rational worldview in which space is just

as frozen and fixed as the two cultures are. She creates a hotchpotch of literature, religion, myth and science, not merely to counter narrow ideas of space, but, in fact, to fight constipated ideas of the world in general. As we shall see in the next section, Winterson uses two particular metaphors of space and place, namely the room and the city, to escape narrow-minded worldviews.

Two Metaphors of Space and Place

Throughout Winterson's novels and short stories, two images related to space and place keep reappearing: the room and the city. How are these forms of spatial organisation presented in different contexts? What philosophical views do they support? And do these forms of spatial organisation signify ideas that fit Winterson's cultural politics?

This is where the story starts, in this threadbare room. The walls are exploding. The windows have turned into telescopes. Moon and stars are magnified in this room. The sun hangs over the mantelpiece. I stretch out my hand and reach the corners of the world. The world is bundled up in this room. Beyond the door, where the river is, where the roads are, we shall be. We can take the world with us when we go and sling the sun under your arm. Hurry now, it's getting late. I don't know if this is a happy ending but here we are let loose in open fields. (*WOB* 190)

This paragraph is the apotheosis of *Written on the Body*. It is not certain if Louise is dead or alive, and after having lost track of Louise the narrator has desperately tried to find her, to forget her, to come to terms with her, but all attempts are in vain. Passion rules the narrator's body and mind. Then, at the very end of the book, he/she sees Louise again, or perhaps it is just a dream. She appears in the kitchen door; the narrator puts out his/her hand and feels that Louise is warm. What follows is the passage quoted above. The room is a place of high pressure ("bundled up", "exploding"). Objects in the room have an incredible size, and the temperature is so high that the windows are melting. The confinement causes an atmosphere of nausea ("the sun hangs"); the world is compressed. Then, "beyond the door", there is freedom. The two lovers escape from the place "where the story starts" and are "let loose in open fields". This liberation, away from the room, makes it possible to experience free movement ("sling", "loose"). The contrast produces a set of binary concepts: inside/outside; bundled/loose; closed/open; confinement/freedom; captivity/liberation. The room, in this excerpt, signifies a worldview of disabled stasis followed by a

moment of joy and potential. The room is to the field as the modern project of fixity and closure is to free and dynamic postmodernity.

In "Disappearance II", a short story from *The World and Other Places*, the narrator, Samuel Wisbech, fifty-three years old, explains his personal relationship to the house that has been in his family since Medieval times. The house is alive: "Room by room, the house is quieted for the winter, until only I am its beating heart. Only I, the rise and fall of its lungs, the house and I breathing together in night" (*TWOP* 119). The personification of the house produces a conception of space as something alive. Additionally, rooms are taken to be metaphors for life and death: "The line between life and death is a couple of inches at most. The width of a door that connects two rooms. The dead are, as we say, on the other side. Indeed they are, the other side of the door, and sometimes the door is open; their hand on the knob or mine?" (*TWOP* 120). One day, Samuel and the house get a visitor, a woman, and the longer she stays in the house, the more silent she becomes. She says it has something to do with the house. All of a sudden he understands that he must find his mother's room.

The house grew bigger and bigger and the room she was in faded further and further away. (...) The room is there, somewhere, it must be. I can see the window from where I stand at the weir. I know the way through the house. When I go indoors to find her the house mocks me. There is no room. (*TWOP* 129-130)

The room here symbolises what escapes organisation, what escapes structuring, mapping, rationalisation. It fits into Winterson's postmodern idea of spatial organisation, her worldview of instability and uncertainty. The room does not obey laws of stability and predictability – any attempt of human mastery over his environment is frustrated. The Enlightenment mind that wants to control nature, to transform wilderness into a superbly managed system for human benefit, is thwarted here.

A successful attempt to control the human environment is described in a passage about a house in *Boating for Beginners*. Mrs. Munde demolished the kitchen on the ground floor.

(...) Gloria wondered how the bedrooms were staying up. 'Will power,' said Mrs Munde in an offhand manner. 'If I want the bedrooms to stay up, they stay up. I built them, they're part of my life.' (*BFB* 47)

Here, space obeys spiritual mastery instead of natural law. Winterson affirms the primacy of mind over matter: in spite of natural laws, the house retains its shape due to the exertion of mental control. Again, however, this is not a common-sense concept of space. The rooms stay in the place they are assigned to, but not because they are made of immovable piles of brick. The only thing that keeps them in their place is the spiritual influence of the woman that owns them. In a previous passage, Winterson ironically glosses English scholar and literary critic Northrop Frye's idea of metaphoric language:

Northrop Frye had written about the development of language through three stages: the metaphoric, where persons and matter share a common energy and are described as an inseparable unit (...) (BFB 44)

With a great sense of nonsense, she applies Frye's poetical assertion to one of the characters' demolition projects. Frye's idea of metaphor is taken literally, so that in the novel the human characteristics attached to brick and wood become quite absurd: "she wanted to knock down her kitchen which had been oppressing her for some time" (BFB 38). In Winterson's writings, space ceases to behave 'normally'.

Some of Winterson's characters consciously construct alternative places to live in. In the following passage from *Sexing the Cherry*, a family tries to avoid normality, stability and regularity as far as the space of their home is concerned. In fact, they turn their home into a denial of normal spatial behaviour:

It is well known that the ceiling of one room is the floor of another, but the household ignores this ever-downward necessity and continues ever upward, celebrating ceilings but denying floors, and so their house never ends and they must travel by winch or rope from room to room, calling to one another as they go. (STC 20-21)

Here, Jordan, a character in this particular novel, suggests that when you think upward rather than downward, space will appear to be infinite rather than finite. If we confine our world to the space that extends from our ceiling to the floor, our reality is unnecessarily limited. If we think upward, our world, our possibilities, will stretch further and further. Similarly, in *Gut Symmetries*, Winterson suggests that if you give your environment the chance to surprise you, it will. In this book, a nostalgia for the past leads one of the characters to seek for a room, her mother's kitchen, in places where no one would expect it to be.

Their apartment block had been demolished but the iron fire escape was still there, crazy, twisted, leading to nothing. She climbed it and opened the lost door to the invisible room (...) (GS 135)

Why do Winterson's characters have this passionate wish to escape from the boundaries of everyday reality? Why does Winterson feel the need to express such visions of overcoming limitations? These miraculous transformations of space are often used to indicate that reality provides more possibilities than most people dare assume in everyday life. Winterson dresses places of heightened reality as antidotes against the classical empiricists' construction of reality and against the banality of ordinary life that the latter produced. In *Art Objects*, we encounter the following passage:

(...) art works to enlarge emotional possibility. In a dead society that inevitably puts it on the side of the rebels. (...) The rebellion of art is a daily rebellion against the state of living death routinely called real life. (AO 108)

The liberating role of art is a crucial motive in Jeanette Winterson's writing and is often literally associated with the creation of space for another life. Art in a way creates room for a utopian life of love and unlimited possibilities. Space, room, and place: these are the materials by means of which we can actualise a new life. By envisioning other spaces that obey radically different laws (or rather: do not obey any laws at all), other realities are created. So, at the basis of Winterson's creation of alternative space, lies a cultural criticism. Winterson formulates her goal – to reach energetic space – as follows:

I do not think of art as Consolation. I think of it as Creation. I think of it as an energetic space that begets energetic space. Works of art do not reproduce themselves, they re-create themselves and have at the same time sufficient permanent power to create rooms for us, the dispossessed. In other words, art makes it possible to live in energetic space. (AO 114)

In another passage, we see how the old reality, a room, is ravaged by a wind. Again we see that stability is replaced by dynamics and that confinement is exchanged for the open air. The wind symbolises a sudden emotional experience, that of madly falling in love, which destroys not only the room but the old status quo between the two as well. As they enter their new life, the city they find is twisted, leaving them disoriented.

There was a wind in the room that tore the drink out of the drinkers, that scattered the bar bottles like bottle tops, that levitated the furniture and smashed it into the tranced wall. Waiters and waited on blew in rags out of the door. There was nothing left in the room but she and me, she and me hypnotised by each other, unable to speak because of the wind. She gathered her things and together we left the destroyed room. I had to follow her as she twisted the pavements under her feet. I lost sense of where we were. The grid had buckled. The city was a bent alley and she was the better rat. (GS 110)

In Winterson's writings, the city functions as a metaphor for dynamic life. There are several important cities in Winterson's novels. They function as spaces that are beyond empirical understanding and beyond control. The city in Jeanette Winterson's fiction is a place of movement. London, Venice, and New York represent a philosophy of life that celebrates change. Venice for instance, is portrayed in *The Passion* as a city that behaves unpredictably, a "living city" in which "things change" (TP 113), a city that cannot be mapped.

This is the city of mazes. You may set off from the same place to the same place every day and never go by the same route. If you do so, it will be by mistake. Your bloodhound nose will not serve you here. Your course in compass reading will fail you. Your confident instructions to passers-by will send them to squares they have never heard of, over canals not listed in the notes. (TP 49)

Venice is an irrational place, a place for passion and the imagination. Venice is constructed as an antidote against the reality of Napoleon Bonaparte, the man who imposed modernity on his empire. His reality is built on ideas devoid of humanity, as the first chapter of the book demonstrates. Napoleon's world is a calculated world, a rational nation state – a world in which roads are straight and well sign-posted (cf. TP 112). But here, Winterson's protagonist Villanelle, an extremely erotic and androgynous creature, asserts that it is a hopeless endeavour to try and follow the map in Venice. Venice defies intellectual understanding – it is subject to games of chance, it is unreliable, it is a city of madmen. In *Sexing the Cherry*, Winterson vents her scepticism of map-making:

A map can tell me how to find a place I have not seen but have often imagined. When I get there, following the map faithfully, the place is not the place of my imagination. Maps, growing ever more real, are much less true. (STC 81)

The imagination thus provides us with a comprehension of space that is more valuable than the understanding of space through reason. Villanelle's assertion that "The cities of the interior do not lie on any map" (*TP* 114) upholds the idea that subjective experience should not be measured or quantified. The city of Venice functions as a metaphor for a different kind of knowledge – for immeasurable gut feeling.

A similar link between the city and emotional comprehension transpires from *Art & Lies*. In the passage to follow we see that, like Venice, London too resists map-making. Winterson's London consists of three different layers. It is divided into three separate ontological realms, that cannot be known simultaneously. Instead of being a public space accessible to all, London is divided into three 'dimensions' of which two always seem to escape us. Winterson echoes Foucault when she distinguishes a ceremonial, a political and an invisible level. Foucault's interest in the strategies of concealment used by powerful discourses (cf. page 20) is comparable to Winterson's layering of urban organisation. The layering produces masking mechanisms. At the same time, sudden movements of people and objects from one level to another account for the shifty character of urban space in particular, and of modern society in general. As we will see in the next section, this kind of unreliability is related to the idea of the 'quantum jump' (cf. page 102). Here, Winterson undermines the belief in human control – space is living a life of its own, frustrating the Enlightenment spirit of control over the human environment.

Shall I tell you something about my City? (...) The First City is ceremonial.
Ceremonies of religion, monarchy, law. (...) This is the old city and it has
been the most destroyed. (*AL* 11)

The Second City is political. Politics of slums, apartments, mansions.
(*AL* 19)

People vanish everyday... The Third City is invisible, the city of the
vanished, home to those who no longer exist. (*AL* 22)

In *Gut Symmetries*, Winterson introduces New York using geographers' vocabulary: "NEW YORK: Manhattan Island. Latitude 40:46N Longitude 73:59W" (*GS* 6). This introduction, however, contrasts sharply with the city of miraculous events that New York turns into later in the book, a place where people get lost and lose their sense of coordination. When the relationships

between Jove, Stella and Alice turn out really confusing, New York turns into an extremely surreal place:

She knew that New York could not exist; that it was an invented city poised in the minds of its inhabitants, a hoisted dream. (*GS* 135)

This duality of objectivity and subjectivity pervades Winterson's narrations of space. We have already seen how certain scientific vocabulary figures prominently in Winterson's fictions, and that in various ways this vocabulary is amalgamated into miraculous tales. In this way, Winterson juxtaposes the human urge to measure and the human passion for the mystical. Although many of her characters are 'average' people, seeking certainty and control, Winterson's stories really begin to excite us when these same characters discover that spaces – and their own minds – resist such control. The mind and the city, subject and object, fuse, and the only thing left to know and to remain amazed about is the fleeting nature of knowledge and of feeling. Indeed, the city of New York in this novel also aligns itself with the feeling of 'unbound identity' related to Alice's bisexuality. The love-triangle in the novel involves two heterosexual relationships – one between Jove and his wife Stella, one between Jove and his mistress Alice, and a lesbian relationship between Alice and Stella. The unexpected emergence of lesbian feelings mirrors the appearance of London's veiled sides in *Art & Lies* or the hidden rooms in *The World and Other Places*.

Whether it be Venice, London or New York, Winterson describes the city as a space that cannot be described – the city always escapes ordering. It is continually reshaping and renewing itself. Moreover, the shape of the city is always determined by the character's state of mind at a particular moment. Political as well as emotive frames of reference determine the city's appearance. The city defies objective understanding and rational structuring. As we already saw in chapter 2, Winterson holds that the idea of gravity is an example of these efforts at structuring the world. In *Sexing the Cherry*, Winterson presents us with a city that, by the willpower of its inhabitants, escapes from the law of gravity, i.e. from the shackles of reason.

The city, being freed from the laws of gravity, began to drift upwards for some 200 miles, until it was out of the earth's atmosphere. (*STC* 97)

Not only places and spaces have this ability to escape the constrictions of physical organisation, and to assume shapes created by the human mind.

People's movements through space (travels, journeys, walks) are constructed by the imagination as well. In the passage that follows, we read Alice's invitation to Jove to follow her on a long and dazzling walk, through the seasons and the limits of what can be seen, as an invitation to follow her not only on her physical travels, but also on her journeys of the mind. She asks Jove to join her in her utopian spaces:

Walk with me. Walk the 6,000,000,000,000 miles of travelled light, single year's journey of illumination, ship miles under the glowing keel. In the long frost the sky brightens and the rim of the earth is pierced by sharp stars. After the leaf-fall the star-fall, the winter shedding of too much light. Walk the seen and the unseen. What can be rendered visible and what cannot. (GS 101-102)

Alice says that we should not only focus on what is directly accessible through the senses, the world as accounted for by classical empiricists (the seen), but also experience other, invisible, (perhaps imagined) realities (the unseen). Alice continues by sharing her own travelling experiences. Looking around her, she sees birds and leaves. Then,

(...) I could not say where the leaves stopped and the birds began. I try to distinguish but at crucial moments the space between carefully separated objects collapses and I too am whirled up against my will into the dervish of matter. The difficulty is that every firm step I win out of chaos is a firm step towards... more chaos. (GS 102)

For Winterson, attempting to know necessarily results in incomprehension. Space collapses; chaos forces itself upon us. The behaviour of our environment can never be fully understood; it always escapes human prediction. Any authoritative physical determination of place is rejected, to be replaced by a fantastic account of place.

In *The Idea of the Postmodern*, Hans Bertens comments on postmodern conceptions of space as opposed to modern ones. He says that modernity is oriented towards technologically rational plan-making, and urban control. This modern functionalism is then replaced by the postmodern idea of the urban fabric as 'fragmented', and by a 'collage' of uses. In the postmodern conception, space is seen as relating to different situations, functions and taste cultures. Postmodernism thus reacts against a crisis within modernism and emphasises the fragmentary and the chaotic, as well as play and aesthetics. Postmodern ideas

of space should therefore be seen as rejecting old traditions of hierarchisation (cf. Bertens 1995:221-223). Winterson's abolition of map-making and her celebration of an unstable, fantastic and indeterminate idea of place, is symptomatic of the postmodern worldview.

Brian McHale also comments on the postmodern reconfiguration of space. He says that magic realist postmodern literary writings reshape "the ontological structure of the projected world", to order them into a "dual ontology, on one side our world of the normal and everyday, on the other side the next-door world of the paranormal and the supernatural, and running between them the contested boundary separating the two worlds (...)" (McHale 1987:73).

Because of their resistance against mapping, postmodern 'other' spaces and rejections of realism can also be related to what Linda Hutcheon calls "de-doxification" (or de-normalisation) (Hutcheon 1995:7). Viewed in this light, Winterson's postmodern strategies are set against the power of the discourses that strive to normalise space. As I suggested before, one of these discourses is classical empiricism. Winterson's construction of 'other' representations thus has its political dimensions. Consequently, her alternative places and spaces should be interpreted as attempts to escape the totalising power of the order and hierarchy of modernity.

As Winterson's oeuvre grows, we note that her depiction of the collapse of modernity comes to rely more and more on metaphors derived from quantum physics. In what follows, I will highlight some of Winterson's 'quantum ideas', to show that she cuts and pastes elements from the discourse of science into her own literary sphere. If along these lines a fusion of science and literature eventually does come about in Winterson's novels, this is still a union forged strictly on her own conditions – her final goal remains a literary one.

Unstable Environments

Cornell physicist N. David Mermin explains the anti-realist implications of quantum physics as follows: "We now know that the moon is demonstrably not there when nobody looks" (Mermin in Herbert 1987:17). A similar macroscopic experience of quantum behaviour features in *Oranges Are Not the Only Fruit*. The narrator, Jeanette, speaks of the influence of a spectator on the existence of a cow: here, Winterson clearly displays an anti-realism that is strikingly similar to the Copenhagen Interpretation of quantum physics. This interpretation is a way to explain what is called the 'measurement problem':

She was an absolutist, and had no time for people who thought that cows didn't exist unless you looked at them. Once a thing was created, it was valid for all time. Its value went up nor down. (*OAF* 44-45)

The measurement problem is one of the central issues of quantum mechanics. Suppose a closed box, in which there is a quantum particle. When we do not happen to look into the box, the quantum particle can be at all possible places in the box. This is very hard to imagine. We would expect the quantum particle to be in a certain place, whether we look at it or not, but this appears not to be the case in fact. The total system is, as we call it, in a superposition of different 'eigenstates'. An eigenstate is a characteristic, for instance a thing's place, that can be determined in reality and macroscopically; so without the aid of a microscope. A particle is in fact both nowhere and at all places at the same time. When someone opens the box in order to determine the place of the quantum particle, or, in other words, when one is going to measure things, the quantum particle will always be found in one particular place. So, by the act of measuring, the system is changed fundamentally. Physicists describe the transition from the state of multiple places to the state of one place as a 'discontinuous undetermined transition to a certain eigenstate'. The transition is called discontinuous because there is no logical continuity in the quantum particle's state; it is undetermined because there are no laws of causality that describe its transition. For the sake of clarity, I will quote Fred Alan Wolf:

(...) the wave of all possibilities undergoes a sudden change the instant anything physical is observed. This is called the collapse of the wave function. It can be imagined to occur just like a pricked balloon suddenly collapsing. The observer is responsible for the collapse of the wave function. She looks at the system, and the system suddenly quantum leaps into one of the possible states. (Wolf 1990:53)

The Copenhagen Interpretation argues for the spectacular idea that the cause of the transition to another state is localised in our consciousness. Not only literary and philosophical thinkers have argued for the idea that man creates his own reality through his consciousness (like Kant and Berkeley for instance) but – since the Copenhagen Interpretation – scientists have too. Wolf elucidates that in certain interpretations of quantum mechanics, the influence of human consciousness upon reality is acknowledged. This wild and seemingly bizarre interpretation has been contended among scientists since its genesis in 1927. It is not surprising that it was (and is) unacceptable to many physicists.

Both in Winterson's narrative and in the Copenhagen Interpretation, consciousness exerts an active influence on the part of nature under research. In the passage from *Oranges Are Not the Only Fruit* discussed above, she suggests that our environment only exists when we want it to. Using the terminology of quantum mechanics, she transposes the microscopic working of the measurement problem to a macroscopic level. She applies the quantum mechanical phenomenon directly to the macroscopic world. This transposition can well be considered as another example of 'aestheticisation' or *Romantisierung*, as physicists maintain that the chance for a macroscopic object to behave like a particle is about zero. Unlike the scientists, Winterson violates the borderline between the small-scale world and the everyday world as we experience it through our senses. She in fact 'pollutes' the two separate zones by confusing the two.

Apart from the urge to aestheticise and enchant the world, Winterson has yet another motive to incorporate quantum physics into her work. Not unlike New Age thinkers, Winterson asks herself whether the unification of science and metaphysics will destroy our passions, hopes and beliefs, or whether it may actually furnish us with answers to a number of existential questions.

In *Written on the Body*, the debate between belief and science is personified by Elgin, a doctor, and the narrator, who will not accept Elgin's diagnosis that Louise, the narrator's lover and Elgin's wife, is fatally ill. The novel opposes two worlds of discourse – the rational, medical world of Elgin, and the narrator's world of physical passion. The novel also shows the conflict between the types of language these discourses rely upon. The narrator distrusts Elgin's diagnosis and comes to believe that Elgin's statements about Louise's condition are unreliable. Elgin represents scientific determinism and the belief in certainty. The narrator stands for emotion and open-endedness. Furthermore, the narrator represents constructivism: the idea that the mind determines reality and that reality is created by means of language. The viewpoint of the narrator does provide comfort, as the narrator enters a utopian state of being when at the end he/she leaves the nauseating room together with Louise. As we also saw above, the constructivist worldview is not per se opposed to science in general. In fact, it is related to the quantum mechanical idea that consciousness determines the state of the world. Science, then, is confronted with its own mystical nature, at the expense of its earlier tendency towards determination and certainty. It seems as if Jeanette Winterson wants to confront science with its former pretensions, to prove its arrogance unfounded.

In *Gut Symmetries*, the debate between science and mysticism continues. Again, Winterson investigates whether quantum physics can provide some moral support for the desperate. Her conclusion seems to be that, in matters of life and death, quantum physics certainly can. The narrators mention Heisenberg (GS 168) and Hawking (GS 162). The ideas of these scientists form the background against which the emotional lives of the physicists Jove and Stella are enacted. Jove frequently seeks refuge in quantum theory when common-sense explanations fail. One of the questions he struggles with is what happens after death.

My father, at the moment of physical death, may simply have shifted to an alternative point of his wave function. What my grandmother believes in and I speculate upon, seems only to be a difference in terminology. She hopes he is in heaven. I hope he has found the energy to continue along his own possibility. (GS 161-162)

As Jove already indicates, the difference between a religious worldview and a scientific one is not as big as it seems. The terminology differs, but the hope, the imagination, seem identical. The vocabulary Winterson borrows from quantum theory surfaces where characters are going through experiences of emotional breakdown and of renewed quests for meaning. Life as a continuum (cf. GS 163), the universe as a wave function (cf. GS 162), other universes as parallel realities (cf. GS 191), objects as wave functions (cf. GS 168), matter as energy (cf. GS 191): these metaphors (or realities) give rise to tremendous amounts of possibilities, and give us a great deal of emotional support when loss and pain are involved. Winterson borrows the vocabulary for these metaphoric relationships directly from the scientific realm and applies them to situations of existential crisis.

Winterson holds that the new sciences can provide us with new meaning in a world that is disintegrating. In the middle of collapsing certainties, we see the appearance of ideas that we can hold on to: some scientific ideas now newly emerging are strikingly similar to religious ideas that we thought we had seen the last of. Science, seen in this light, restores religion. This is Jove's quest as well: to seek for ways in which science is able to affirm religious ideas like immortality. Winterson is not the only contemporary writer or thinker to link quantum physics to the idea that a life cannot just cease to be. In *The Quantum Self*, a book on the implications of quantum theory for the concept of the self, modern physics is integrated with psychology. It brings forward a notion of the self that,

like the quantum itself, is free, responsive and creative. Danah Zohar, author of *The Quantum Self*, says the following about loss:

As the outlines of the quantum self, its identity and its relationships, began to emerge (...) a wholly new way of thinking about the survival of that self began to emerge. At the subatomic level of elementary particles, there is no death in the sense of permanent loss. The quantum vacuum, which is the underlying reality of all that is, exists eternally. Speaking poetically, we might describe the vacuum as 'the well of being'. Within this well all basic properties are conserved – mass/energy, charge, spin, etc. – nothing is ever lost. (Zohar 1991:124)

In *Gut Symmetries*, whenever the new sciences are used to sustain a threatening concept of reality, Jove gets angry. He and Stella are on a boat trip when a storm comes up. They suffer shipwreck and lose all sense of orientation. Finally, Stella has only one thing left: her hope to be saved. At that moment she remembers a quantum mechanical theorem that feeds her anxiety:

'Maybe we've sailed through one of your wormholes and come up in a parallel universe. In this universe, identical to our own, there are no people.'

He turned to me in a fury. 'Stupid, stupid, stupid. The probability is beyond calculation. A large quantum transition such as that is virtually impossible.'

'Virtually?' (GS 180)

When Stella begins to doubt whether quantum physics will save her, Jove turns into a rationalist. Like Stella, Jove is seeking for hope and certainty, but when quantum physics cannot provide it, he reverts to scepticism. Likewise, in Jeanette Winterson's novels, science is embraced only when it generates a sense of beauty and happiness. When science involves constraints and impossibility, it is rejected.

Influence and Intertextuality

Although little known and even less publicised, Winterson's work shows the influence of quantum physics even prior to 1996, the year of writing of *Gut Symmetries*. As we have seen, *Oranges Are Not the Only Fruit* already plays with the Copenhagen Interpretation. *Sexing the Cherry*, published four years after *Oranges Are Not the Only Fruit*, also contains phrases and ideas that hint at quantum

physics. One of the phrases to reveal this presence is “empty space and points of light”.

Matter, that thing the most solid and the well known, which you are holding in your hands and which makes up your body, is now known to be mostly empty space. Empty space and points of light. What does this say about the reality of the world? (*STC* 8)

And even the most solid of things and the most real, the best-loved and the well-known, are only hand-shadows on the wall. Empty space and points of light. (*STC* 144)

A few years ago, Richard Caink, a British sculptor, baptised two of the statues in his series “Full Circle” *Points of Light I* and *Points of Light II*. As Caink indicates on his website www.richardcaink.co.uk, these sculptures were directly inspired by Winterson’s phrase.

It is interesting to see that Caink uses curved shapes where Winterson uses circular structures in their respective representations of space. Like modern scientists, both artists leave flat models of space for what they are. Both Caink and Winterson celebrate the loss of solidity, the dynamic characteristics of space and with that, the capricious behaviour of the world around us.

Around 1913, Niels Bohr discovered the ‘quantum jump’. This term in physics refers to how electrons shift between orbits around the nucleus. Bohr found that at specific distances from the nucleus, there were several orbits. The orbit closest to the nucleus was at the same time the shortest possible distance between an electron and a nucleus. He also observed that electrons could jump from one orbit to another. This is remarkable, as the orbits are relatively far apart. Scientists showed that deep within the seemingly solid human environment, at quantum level, reality was unstable and not continuous. As Brian Green says,

Imagine a universe in which the laws of physics are as ephemeral as the tastes of fashion – changing from year to year, from week to week, or even from moment to moment. In such a world, assuming that the changes do not disrupt basic life processes, you would never experience a dull moment, to say the least. The simplest acts would be an adventure, since random variations would prevent you or anyone else from using past experience to predict anything about future outcomes. Such a universe is a physicist’s nightmare. Physicists – and most everyone else as well – rely upon the stability of the universe. (Green 1999:168)

Despite the fact that people keep relying on (re-lying) a stable worldview, a new awareness has started to haunt our postmodern era: the awareness that the observed stability is a mere illusion.

At the time Bohr made his discovery, the Modernist poets were trying “to isolate the poememe” (Albright 1997:1) – elementary particles of which poems were constructed – that unpredictable, capricious behaviour of space became a common metaphor. At that time, poetic ideas about verbal structures were similar to physical theories about material structures: one can say that quantum poetics and quantum physics went hand in hand. And in the two cultures, this idea and its metaphors have become stronger ever since. By (re-)using quantum metaphors, Winterson posits herself in this tradition.

If we follow Hayles’ perspective (cf. page 24), the idea of the quantum jump must have energised a field where people discuss related or comparable matters freely, in media other than the scientific journals, in other terminologies than the terminology of mathematics, and through metaphors that travel from one subculture to another and back again. At all times, whirlwinds of ideas emerge from a constant collision of subcultures. In this way, fields arise, fields that both energise and are energised by the humanities and the sciences at the same time. Caink, Winterson, Hawking, Heisenberg and many others meet in that field, in this cosmic web. What unites them is a fascination with the mystical phenomenon of quantum jumps. Is it a quantum jump, for instance, that makes Fortunata disappear in *Sexing the Cherry*?

I thought I saw someone standing beside him, a woman, slight and strong. I tried to call out but I had no voice. Then she vanished and there was nothing next to Jordan but empty space. (STC 144)

The idea of empty space not only applies to our environment. Quantum theory gets under our skin, generating a fragmented and dynamic concept of the self. This, in turn, can have an effect on our psychological well-being. In the passage below, for instance, we see how an unstable and unreliable image of matter goes hand in hand with a feeling of insecurity.

Should I acknowledge the fiction that I am? A man made of nothing but space and light, a pinpoint on a pinpointed planet stitched among the stars? (AL 30)

The phrase 'empty space and points of light' contains a double reference. It is an obvious reference to classical Atomist ideas about the construction of matter. Macroscopically, matter seems to be solid, but in microscopic reality, it consists for ninety-nine percent of emptiness. For the remaining one percent, matter consists of protons and neutrons, which make up an atom's very dense nucleus, and electrons, which orbit around the nucleus.

However, the phrase 'empty space and points of light' also refers to the quantum mechanical idea of the vacuum, where particles are generated spontaneously out of nothing, only to decompose just as spontaneously. The phrase returns in the passage below, where it functions in the context of a fantastic spontaneous generation of particles. Here, Winterson moves beyond quantum mechanics into science fiction: the moving particles develop into human beings.

What I saw astonished me.

There appeared to be ten points of light spiralling in a line along the floor, and from these beings came the sound I had heard. It was harmonic but it had no tune. I could hardly bear to look at the light, and the tone, though far from unpleasant, hurt my ears. It was too rich, too strong, to be music.

Then I saw a young woman, darting in a figure of eight in between the lights and turning her hands through it as a potter turns clay on the wheel. At last she stood back, and one by one I watched the light form into a head and arms and legs. Slower and slower, the sound dying with the light, until on the floor were ten women, their shoes in holes, their bodies wet with sweat. (*STC* 93)

Bodies can disappear in a similar way:

At a dancing school in a remote place, Fortunata teaches her pupils to become points of light. (...)

She believes that we are fallen creatures who once knew how to fly. She says that light burns in our bodies and threatens to dissolve us at any moment. How else can we account for so many of us who disappear? (*STC* 72)

In quantum mechanics, a vacuum is no longer seen as a perfectly empty bit of space, but rather as a place where occasionally particles may unpredictably emerge from the void, borrowing energy from their surroundings, fuse, and fall

apart again. The passages above echo this behaviour, subtly blending in quantum mechanics with literature.

How closely related Winterson's fictions are to these theories, becomes clear when we read the following passage, where Stephen Hawking describes the quantum mechanical revision of the classical idea of the vacuum:

What we think of as 'empty' space cannot be completely empty because that would mean that all the fields, such as the gravitational and the electromagnetic fields, would have to be exactly zero. However, the value of a field and its rate of change with time are like the position and the velocity of a particle: the uncertainty principle implies that the more accurately one knows one of these quantities, the less accurately one can know the other. So in empty space the field cannot be fixed at exactly zero, because then it would have both a precise value (zero) and a precise rate of change (also zero). There must be a certain minimum amount of uncertainty, or quantum fluctuation, in the value of the field. One can think of these fluctuations as pairs of particles of light or gravity that appear together at some time, move apart, and then come together again and annihilate each other. (Hawking 1996:112)

The obvious parallels between *Sexing the Cherry* and Hawking's *A Brief History of Time* illustrate how literary postmodernism shares certain ideas with quantum mechanics. Hawking, too, speaks of empty space and pairs or particles of light. If this is not a direct influence (*A Brief History of Time* was published in 1988 and *Sexing the Cherry* in 1989), then at least this terminology must have been 'in the air' at the time. Without denying that Winterson may be directly influenced by Hawking, I like to suggest that there might also have existed a web of affinities, where both emplotment and vocabulary were signs of the times.

Creative Interpretations of Science

Winterson's enchantment of space can be seen as an antidote to the despair that modernity has left behind. These antidotes are presented as alternative realities, fairy tales perhaps, or utopias. Winterson disposes of measurement, quantification, and the rigid tracing of natural laws by treating these scientific methods and aims as unworthy pursuits. Positivist scientists' authoritative means of control are ridiculed while Winterson at the same time vents the need to escape from a deterministic and mechanistic world-picture. Paradoxically, this escape is realised through an appropriation of scientific vocabulary and imagery. Winterson deploys this vocabulary and imagery to present a worldview in which

magic, religion and the fantastic rule. By positing a worldview that in many ways can be considered miraculous, Winterson also profiles herself as a political writer concerned with the development of western culture. The desire to change everyday reality, including the way in which we eat, commute, use central heating, and so forth, is a desire one can only interpret as politically inspired. Winterson directly borrows images from popular interpretations of quantum mechanics, but her ideas can also be seen as issuing from a web of affinities. An existential philosophy of indeterminism, of a passionate involvement of the subject in the miraculous and the metaphysical, is presented with the aid of metaphors originating from scientific ideas on subatomic space. These scientific images of space function as vehicles for an artistic and fantastic worldview. Winterson's texts uphold Hayles' idea of the cosmic web, or Porush's idea of Eudoxical discourse. The literary is inseparably and imaginatively intertwined with the scientific. Winterson's texts therefore are environments where different subcultures intersect. Her creative interpretations of science are, in the end, not directed against science per se, but rather against a specific kind of science – against classical empiricism. Still, although she seems to bring about a fertile mixture between the two cultures, her 'quantum politics' is only geared towards the fortification of values that have always been literary to begin with: physics is only accepted in Winterson's spaces when it underwrites ideas that long since have been put forward by literature. Winterson fuses science and literature only when they can both be used to express the miraculous.



4

TIME AND HISTORY

As the incorporation of ideas from the new sciences into her fiction became more and more prominent, this aspect of Jeanette Winterson's fiction met with increasing criticism. Many critics think of it as "cod-scientific post-Stephen Hawking-pretension" (Barnacle 1997), or something similarly unflattering. In the previous chapter I have argued that quantum mechanics provides Winterson with a number of useful metaphors to express a miraculous sense of space and place. I will argue below that relativity theory also opens up possibilities for Winterson to weave time and history into her fabric of enchantment. The question is, can Winterson's notions of time and history be called postmodern? In this chapter I will show how Winterson plays with contemporary scientific theories about time to substantiate such fantastic ideas as time travel, the denial of causality, and the simultaneity of past, present and future. In this way, Winterson expresses a postmodern worldview, involving a denial of linearity and causality, and an acceptance of contingency. Also, Winterson shows that consciousness plays a crucial role in our understanding, or rather, construction of reality. Ideas in contemporary science correspond with the beliefs put forward by Winterson's protagonists, and with the narrative structures of her fiction. Winterson's idea of history is equally postmodern: it questions not only the validity of historical explanation but in fact the very concept of chronology. Historical explanation, according to Winterson, should not be taken any more seriously than cat's play.

The Notion of Time in Science and Literature

In his preface to *Time in Literature*, Hans Meyerhoff explains how he realised

how remote the scientific, logical construction of the concept of time was from certain aspects of time in human experience which literature has often singled out for analysis. What seemed most significant in terms of

the experience of time was quite irrelevant to the logical concept of time as formulated by science; per contra, the scientific concept seemed to have little to say about the most significant aspects of time in the lives of human beings. Startled by this striking contrast, I wondered why this was so, what the function of literary analysis was as compared with the scientific analysis of time, why literature was so much concerned with this problem, particularly in our own age, and what, if anything, these questions had to do with philosophy. (Meyerhoff 1955:viii)

The starting point for Meyerhoff's book is that literary writers describe time as it is experienced by the human mind, whereas science describes "time which is not private, subjective, or defined in terms of experience, but which is public, [and] objective" (Meyerhoff 1955:5). The scientific idea of time is "expressed by the symbol 't' in mathematical equations. It is also our 'public' time, which we use, with the aid of watches, calendars, etc., in order to synchronize our private experiences of time for the purpose of social action and communication" (Meyerhoff 1955:5). Meyerhoff assumes there is a difference between scientific goals and presuppositions on the one hand and a human, psychological interest on the other. However, are scientific ideas of time really all that different? Don't scientific and literary notions of time proceed along parallel paths? (cf. page 32). Aren't scientific notions of time "closely related to developments in the culture at large?" (cf. page 26). To answer these questions, I will look at the main developments in the scientific conceptualisation of time, and show that literary notions went hand in hand with these developments.

It was Aristotle who formulated the classical theory of time that is still commonly accepted today. In his *Physics*, Aristotle imagined time as a straight line extending indefinitely in either direction. The present moment is a point on the line, separating the past from the future: "So the 'now' also is in one way a potential dividing of time, in another the termination of both parts, and their unity" (Aristotle, b.4. ch.13). He sees the present as a moving instant: "For time is just this-number of motion in respect of 'before' and 'after'" (Ibid. b.4. ch.11). From his text, it becomes clear that Aristotle feels the need to measure and quantify time. "Time then is a kind of number. (...) Time obviously is what is counted (...)" (Ibid. b.4. ch.11).

Historians of science often argue that only with Isaac Barrow and Isaac Newton, the idea took hold that time is a mathematical co-ordinate, and that Barrow and Newton were the first to see time as a framework within which processes and events occur. However, Aristotle already visualised time as a solid

framework against which change or motion can be measured. In the passage below, Aristotle explains that time has an independent and constant existence:

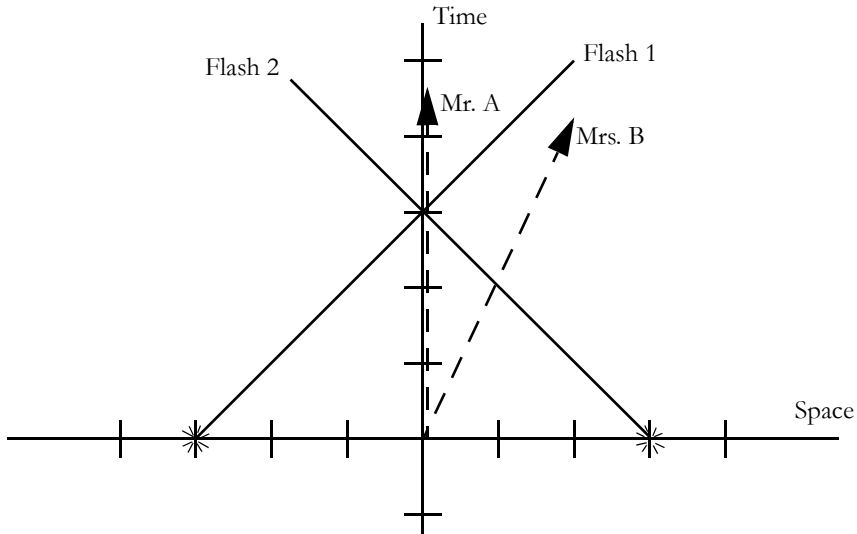
(...) change is always faster or slower, whereas time is not: for ‘fast’ and ‘slow’ are defined by time – ‘fast’ is what moves much in a short time, ‘slow’ what moves little in a long time; but time is not defined by time, by being either a certain amount or a certain kind of it. (Ibid. b.4. ch.10)

But Barrow and Newton did add some vital new elements to the Aristotelean concept of time. They were able, among other things, to surpass Aristotle’s vague descriptions with clean formulas such as $\text{velocity} = \text{distance}/\text{time}$. They also systematically worked from Descartes’ notion that physical phenomena can be described as mechanical systems. Aristotle’s model of time was gradually expanded and strengthened by Newton and his followers, who developed the modern clock and sought to standardise time. This culminated in the institutionalisation of a time system centred around “Greenwich Mean Time”, involving a detailed and sophisticated knowledge of geography, mathematics, mechanics, and astronomy.

Meanwhile, literary narrative followed an analogous path, laid down by classical poetics, where characters developed in a linear way, and plot structures had a stable, inner rhythm, continuously moving forward. Aristotle found that a play had to have a beginning, a middle and an end, and unity of action, integrity and logic (Barton and Hudson 1997:34).

Life itself was conceptualised along similar lines. Everyday expressions like “let bygones be bygones”, “time is a devouring tyrant” and “that’s for the future to show”, reveal that life has been conceptualised in an Aristotelean way. Classical philosophy and poetics have thus informed not only literary traditions until today, but also our narrativisations of life. The Aristotelean model of time has established itself as the common-sense notion of time that still governs our rational actions and decisions. It is the Aristotelean notion of time that lead most scientists to believe, at least until very recently, that time travel could never become a reality. But now, some interpretations of quantum physics suggest that time travel is possible – at least in theory.

The Aristotelean and Newtonian notions of time had to be abandoned – in the world of science at least – at the beginning of the twentieth century, when Albert Einstein showed that time is relative to the observer. The Minkowski diagram below illustrates how the results of Einstein’s and Minkowski’s work undermine the notion of absolute simultaneity.



Hermann Minkowski was a contemporary of Albert Einstein. He realised that Einstein's ideas could be best understood in a non-Euclidean – curved – conception of space. He then developed the idea of a four-dimensional spacetime continuum. In the Minkowski diagram above, time is represented by the vertical axis, and space (now one-dimensional) by the horizontal axis. When someone moves with a constant velocity, that person moves for instance from co-ordinate (0,0) to (1,2) to (2,4) and so forth. At time 0, Mr. A and Mrs. B are standing on (0,0), each in their own space ship. Mrs. B has a velocity with respect to Mr. A. This means in the diagram that Mr. A does not make a move to either the left or the right of the axis that represents space, but stays put in the same spatial point (0), while time proceeds. Thus, he ascends along the vertical axis, not moving away from it. Mrs. B is moving away from Mr. A in space, so she moves away from the vertical axis, for instance to the right. At the same time, like Mr. A, she moves upwards, that is, in time. They both think that they are not moving because there is no way to show the difference between moving with a constant velocity and not-moving. Now we are going to make two flashlights flash once. Flashlight number 2 is standing on (3,0) and flashlight number 1 is standing on (-3,0). Mr. A. and Mrs. B. want to know whether the flashlights have flashed at exactly the same time. Mr. A will experience that on co-ordinate (0,3), the two flashes arrive at the same time. At that moment, Mrs. B has already

received the flash sent by flashlight number 2, namely on co-ordinate (1,2); but the moment at which she will receive the flash from flashlight number 1 is still in the future for her. So, when Mr. A experiences the arrival of flash number 1 as his present, the arrival of that flash will only occur in Mrs. B's future. She will see the flash later than Mr. A does. Also, when the arrival of flash number 2 constitutes Mr. A's present, the same event is part of Mrs. B's past. The other way around, the arrival of flash 1 is Mrs. B's present, when Mr. A experiences it as his past. And at the moment when the arrival of flash 2 is Mrs B's present it is Mr. A's future.

This complicates the notion of simultaneity – it destabilises the belief in a shared universal present. It multiplies the single presence of one 'now' into a vast number of 'nows'. There can be as many 'nows' as there are spectators! Einstein's theory of relativity and Minkowski's research brought space and time together in a single, four-dimensional arrangement called spacetime. In this arrangement it is not only possible to travel forwards, backwards and sideways in space, but also forwards and backwards in time. Spacetime can thus be considered a so-called 'block universe'. The Oxford quantum physicist David Deutsch explains in *The Fabric of Reality*:

Spacetime is sometimes referred to as the 'block universe', because within it the whole of physical reality – past, present and future – is laid out once and for all, frozen in a single four-dimensional block. (Deutsch 1998:268)

And, because of gravitational effects caused by large, heavy objects in space, space is not flat, but curved.

Deutsch makes clear that, if the world exists in the form of a single four-dimensional arrangement, time does not flow, as Newton thought it would. Basically, Deutsch suggests not only that past, present and future all coexist at the same time, but he also suggests a Multiple Worlds approach. The Multiple Worlds approach implies that there is not one single future, but that there is an infinite number of futures, realised in an infinite number of universes. This number is so large because there are vastly more 'nows' associated with probable events than with less probable events. Deutsch believes that reality is a collection not only of the probable or the actual 'nows' but also of the infinite number of possible 'nows'. In fact, Deutsch goes so far as to argue that possible 'nows' or 'snapshots', as he calls them, are just as real as past, present or future snapshots.

This would mean, for instance, that everyone has countless lives, all separately existent in one big 'multiverse' (cf. page 130).

Finally, if one combines Einstein's spacetime (which deals with large-scale phenomena), with quantum physics (concerned with tiny particles), it follows that the block universe is not smooth. In the quantum world, it is likely that minute holes will open up, entrances to little tunnels between moments in time, or between different places. These holes are called 'wormholes'. I will return to this later (cf. page 117 and page 119).

At the beginning of the twentieth century, when scientists were developing these theories, discarding a concept of time that had ruled for thousands of years, writers and philosophers were experimenting with alternative notions of time as well. Philosophers asked themselves for instance whether the divisions between past, present and future are as absolute as traditionally assumed, and if time is not in fact relative to our perceptual modes – i.e. to the imagination or to emotional states of mind. At that time, writers began to shape time in more intricate ways than that of the clock, moving beyond received ideas of plot and linear progressive development. James Joyce's *Finnegan's Wake* (1939), for instance, does not have a traditional 'opening', as the first sentence completes the final one. This cyclical structure was a striking alternative to the traditional "sequential narrative structure which orders and forces chaotic reality into a neat chronology" (Williams 1992:3). Concurrently, Virginia Woolf frequently addressed the subject of the human perception of time and the way in which consciousness distorts the measurement of time. In *Orlando* (1928), Woolf's characters dwell upon ideas similar to the insights of relativity theory (cf. page 171). In 1936, T.S. Eliot expressed non-linear notions of time in his "Four Quartets" (cf. page 125). More and more, in the course of the Modernist period, human experience came to be regarded as a non-linear phenomenon, culminating in the postmodern age when Jorge Luis Borges' explored the theme of parallel universes in "The Garden of Forking Paths" (1964) and Julio Cortazar published *Rayuela* (1963), a novel that encourages its readers to leave traditional notions of chronology behind, as its temporal organisation is at will either forward, from beginning to end, or 'chaotically' shifting from 73 to 1, to 2, to 116, to 3, to 84, to 71 and so on, undermining classical poetics.

These examples show that literary and scientific notions of time proceed along parallel paths, moving in and out of the same paradigms. The struggle between different conceptualisations of time did not arise from the two cultures, but from the transition from the classical and Newtonian world to the world of

the new sciences, Modernist and postmodern literature. Contrary to Meyerhoff's conviction that the interests of literature are ultimately different from those of science, I argue that literary and scientific ideas of a particular period go hand in hand.

Simultaneity and Relativity

If we consider the analogous development of literature and science in the twentieth century, it is not surprising to see how echoes of the new sciences reverberate in Winterson's work. Winterson upsets the notion of simultaneity, as can be discovered in the passage from *Art & Lies* quoted below. This passage echoes one of Einstein's main insights about time. Einstein asked himself what we do if we try to determine a duration, i.e. when we measure a time interval. He observed that a statement about time actually deals with simultaneity. When we say 'the train arrives at seven o'clock', this actually means that the indication of the figure seven by the small hand of the clock and the arrival of the train, are simultaneous happenings. However, in the passage that follows, Winterson is playing with this notion of simultaneity.

'What time shall I expect the arrival of the 9:15?'
He looked at her with undisguised contempt. (...) 'The board tells me that the 9:15 will arrive at 9:20. It's now 9:30.' (AL 37)

The train indicated by 'the 9:15' receives its identity from its due time of arrival. The train is not identified by the place it came from, nor by its colour, type or any other characteristic, but by the prediction of the simultaneous events of a train coming in and the clock pointing at 9:15. Strictly speaking, for all observers on the station, any train that arrives at the station at 9:15 is a 9:15; but if you are able to assume a bird's eye view, there is only one actual 9:15, namely the one that was *supposed to* come in at 9:15. So, even if it is late, that train is still the 9:15. Consequently, whether the train that is actually coming in at 9:20 is in fact the 9:20 or the 9:15 can only be known by those observers that have an overview of the complete situation. Having an overview of the train tracks and the timetables provides a different perspective from someone who is waiting on a platform for a train to come in. So, understanding is not universal; the meaning of events depends on the place and the time occupied by the person who is trying to understand.

But there is more to this short passage, where two competing worldviews are at odds. The man is looking for absolute values: what is supposed to happen at 9:15, must happen at 9:15. In the woman's voice we can recognise Einstein's thinking – the idea that what is expected as simultaneous, need not happen as simultaneous. The man seems to support the idea that when there is no event coinciding with the moment, the concept 'the 9:15' loses all meaning. The woman is able to attach a new meaning to a fleeting reality. Also, Winterson presents us with a male worldview that expresses a sense of superiority: the man displays "undisguised contempt" for the question coming from the feminine worldview. Winterson thus makes a value judgement about absolutism and relativism, saying that the absolute is the product of a male dominated order, rigid and self-absorbed, and that the relative expresses a more subtle and sympathetic – ergo feminine – way of thinking. This aligns perfectly with what Winterson says later on in *Art & Lies*: "That Time, the Destroyer, was a man, she had no doubt" (*AL* 60). Of course, such texts are begging for analysis from a gender perspective, but this will have to wait until chapter 6.

Art & Lies also contains more explicit references to Einstein's Special Theory of Relativity. For Sappho, Picasso and Handel, the train represents the possibility of escape from a daily reality filled with problems and injustice. At a certain point in their lives, they leave their normal surroundings, and board this train, hoping to start a new life.

From a distance only the light is visible, a speeding gleaming horizontal angel, trumpet out on a hard bend. The note bells. The note bells the beauty of the stretching train that pulls the light in a long gold thread. It catches in the wheels, it flashes on the doors, that open and close, that open and close, in commuter rhythm. (*AL* 3)

Long trains leaving. The square light in the windows. The yellow light on the black train. The reptile train with yellow scales. Yellow and BLACK yellow and BLACK yellow and BLACK chants the train.

The light was fretted around the border of the train; decorative light that made a cornice for the unrelieved metal, pale patterns worked against an austerity of line.

Had the light been fixed in Victorian embellishment it would have tired the eye and not refreshed it. Its charm was in its movement, the play of light, beautiful and surprising, new. New light escaped from an ancient sun.

Sun-yearred light.

In its effect the light was choral. Harmonies of power simultaneously achieved, a depth of light, not one note but many, notes of light sung together. In its high register, far beyond the ears of man, the music of the spheres, vibrating light noted in its own frequency. Light seen and heard. Light that writes on tablets of stone. Light that glories what it touches. Solemn self-delighting light.

The train crawled on beneath the speeding light that had already belted the earth. The scientific train and the artful light. (*AL* 25-26)

In *Art & Lies*, descriptions of the train are always accompanied by allusions to a strange, mystical behaviour of light. Here, light not only produces visual experiences, but also fuses with auditory experiences. The visual and the audible become one. Winterson uses a specific kind of scientific imagery to describe the peculiar behaviour of the light. The phrases “speeding gleaming horizontal angel” and the “train that pulls the light” are references to Einstein’s experiments with light on trains, which I will briefly go into below.

Einstein asked himself how we can determine the simultaneity of two events that occur at a great distance from each other. He worked it out as follows. Two clocks are far apart. We put observer A near the first clock, and observer B near the other clock. A third person, C, is put right in the middle. A and B send a light signal to C at exactly seven o’clock. When C observes both signals at the same time, both clocks are synchronous. Now A and B get on a long train: observer A goes into the carriage at the end of the train; observer B goes into the front carriage. The train starts to ride at a very high speed, and another observer D watches the railway. A sends a light signal to B and B reflects it back to A. A will answer, when asked, that this light beam takes just as long to go from A to B as from B to A. Light inside a riding train travels at the same speed as outside the train. D, however, observes something different. This is because A and B move with respect to D. As B moves in the same direction as the light sent by A, the light beam has to overtake B. The light sent back by B goes to meet A. According to D, the light beam will take more time to go from A to B than to return from B to A. The observers A and D differ in their opinion about the length of the time interval. So, it depends on the point of view of the observer how much time passes between two events. Time, in other words, is relative (cf. Einstein 1988:18-19).

The first of the two passages quoted above describes a long train “that pulls the light in a long gold thread” and says that “from a distance, only the light is visible”, the light that moves over a “hard bend”. These images relate to

Einstein's railway experiment not only in that a train and light beams jointly configure; but also because of the fact that light is observed from a distance. Both passages quoted above in fact describe the scene from the perspective of D. The fact that the train stretches itself confirms the idea that Winterson in fact describes Einstein's train experiment here. When the train is seen from D's point of view, according to Winterson, the train stretches itself. It seems to become longer, suggesting that for the observer, the light takes longer to get from A to B than from B to A. The image of the stretching train might therefore refer to the extra effort the light has to make to reach B: it has to overtake B.

The image of the stretching train refers to another scientific discussion at the same time. The idea of contracting moving objects was originally conceived by Lorentz and Fitzgerald. They witnessed how material bodies contract in the direction of their motion. Einstein later understood that the bodies did not really contract, but only *seemed* to contract because of a change in the way space and time are measured.

Moreover, Winterson expresses in these passages a typically twentieth-century topic in a form of rhetoric we would usually associate with religious discourse. Here, she links technology and physics to visions of the sublime, while referring to the Pythagorean concept of 'the music of the spheres'. In the fifth century B.C., Pythagoras regarded the stars and the planets as spheres, separated by intervals which were associated with tones. Together, these tones would create celestial music. As we can see in the second passage, the narrator's experience is an intense artistic and metaphysical experience. The harmonious transcendent vibration – the harmony of the spheres – is directly associated with the physical laws that describe the behaviour of light ("frequency", "speeding light"), technological development ("unrelieved metal") and rational, efficient structures ("austerity of line"). By doing so, she endows a seemingly materialist culture with new, sacred meaning. In her efforts to Romanticise reality, Winterson appropriates the new science, interpreting it in a way that makes science match her own aesthetic and magic realist goals. That Winterson (ab)uses Einstein's findings to make them fit her own goals becomes extremely clear when she introduces Einstein into *Gut Symmetries* as a character. There Einstein becomes a mystic, an alchemist, mysteriously creating formulas out of ancient words and numbers endowed with souls, beginning in the "waters of his spirit" (GS 23). Winterson thus amalgamates the most famous modern scientist of all with the secrets of hermetic philosophy.

So far, I have discussed how Winterson refers to Einstein's Special Theory of Relativity. But she is also inspired by the notions of time that have been developed since, made possible by Einstein's thinking. In one of her essays about Virginia Woolf, Winterson suggests that Woolf's world is permeated with alternative notions of time and space – ideas that science in fact only began to develop after 1920. In the passage below, Winterson argues that Woolf presents temporal and spatial dimensions as a single interconnected whole, at the same time indiscriminately intertwined with the human consciousness, which in its turn is an amalgam of both imagination and experience.

Woolf's connections across time and space, through the inner and outer worlds of imagination and experience, are made brilliantly, vertiginously, with not a glance over the edge. Cities and peoples pass beneath us, in a moment we are in England, in another moment in Persia, then the carpet flies on, ignoring the claims of the clock. (40 73)

As we will see in chapter 5, Winterson is clearly inspired by Woolf's connections between points in spacetime, and the way in which Woolf creates an escape from a world of rigid laws. For both Woolf and Winterson, spacetime is riddled with wormholes (cf. next section). But these wormholes do not merely connect coordinates in space and time. The realm of consciousness and the imagination has its own wormholes – wormholes of the mind – connecting one phantasmagoria to another. In that way, all possible realities are interconnected, which adds a new dimension to knowledge. The dizzy confusion within the postmodern epistemic system is able to fuse what the moderns used to separate: imagination and experience.

Winterson thus makes good use of the creative potential that was – intentionally or unintentionally – freed by Einstein and his followers. Winterson registers the imaginative possibilities of several scientific theories, and extends their artistic and emotional implications, turning them into instruments of her politics of aestheticisation.

Time Travel

Time has no meaning, space and place have no meaning, on this journey.
All times can be inhabited, all places visited. (STC 80)

The phenomenon of time travel is essential to the worldview put forward in Winterson's fiction. All of her works to date in one way or another involve

crossing temporal boundaries. It is not only in *Gut Symmetries* that we find scientifically inspired explanations for jumps through spacetime. Jordan's journey through time in *Sexing the Cherry* reveals that Winterson imaginatively manipulates ideas from the field of physics in her early work.

The last two chapters of this novel are called "1649" and "Some Years Later". This latter title hardly prepares us for the sudden transition Winterson has in store for her readers. Although at first we are led to believe that the story is still set in the seventeenth century – we are presented with explorers offering pineapples to a king – it soon becomes clear that Jordan has been transferred to the late twentieth century, complete with newspapers and television, Playboy and computer hackers. But Jordan is still more or less the same person. He still feels pineapples are strange objects and he has retained his passion for ships. The explorers we meet at the beginning of the chapter turn out to be figures in a painting in a museum. This painting in fact functions like a trapdoor, an interface between two points in spacetime. Inspired by this painting, Jordan joins the navy. But it is the same painting that takes him back to the seventeenth century:

I rested my arms on the railing and my head on my arms. I felt I was falling falling into a black hole with no stars and no life and no helmet. I heard a foot scrape on the deck beside me. Then a man's voice said, 'They are burying the King at Windsor today.' I snapped upright and looked full in the face of the man who was staring out over the water. I knew him but from where? And his clothes... nobody wears clothes like that any more. I looked beyond him, upwards. The sails creaked in the breeze, the main spar was heavy with rope. Further beyond I saw the Plough and Orion and the bright sickle of the moon. I heard a bird cry, sharp and fierce. Tradescant sighed. My name is Jordan. (STC 121)

It is no coincidence that Winterson uses the phrase 'black hole' when Jordan travels from one time system to another. The combination of a 'black hole' and time travel makes it clear that Winterson was inspired by the new physics. Black holes, even though sometimes located very far apart in space and time, are connected to one another by wormholes. Although physicists believe that nobody could survive inside a black hole, a literary interpretation of this phenomenon would allow travel through black holes and wormholes to distant spacetime regions. In *The Physics of Star Trek*, Lawrence Krauss describes the differences and likenesses between science and science fiction. He explains how scientists believe wormholes to function:

If spacetime is curved, then perhaps there are different ways of connecting two points so that the distance between them is much shorter than that which would be measured by traveling in a 'straight line' through curved space. (Krauss 1995:38)

Such wormholes are created as two microscopic 'singularities' – regions of spacetime where the curvature becomes infinitely sharp – find each other and momentarily join. (Krauss 1995:40)

Winterson obviously mixes literary techniques like flashbacks and flash-forwards with scientific ideas. But why does Winterson make use of these theories? The developments in the new sciences are akin to current literary shapings of time and space. The absolutist worldview has been replaced by a relational, situated idea of timespace, drawing upon Einstein's Special Theory of Relativity. Contemporary physicists such as Hawking discuss recently discovered phenomena such as black holes and wormholes. These phenomena cause time to behave in a much less orderly fashion than we had always assumed. Winterson is telling us, too, that the way in which the human mind handles reality is represented more closely by these new theories than by the traditional concepts of time and space. Subsequently, she liberally draws on the new sciences to propagate her fantastic imaginings. She feels that the human mind does not order the world according to chronological – linear – principles only. In fact, our memory actually deals with fragments of the past in a less uniform and structured way than prescribed by the rules of chronology: it puts together a story from remembered bits and pieces, making jumps, experiencing simultaneities, moving backwards and sideways, and with varying speed:

In a night 200,000 years can pass, time moving only in our minds. (*STC* 132)

A similar insight is found in Woolf's *Orlando*:

The mind of man, moreover, works with equal strangeness upon the body of time. An hour, once it lodges in the queer element of the human spirit, may be stretched to fifty or a hundred times its clock length; on the other hand, an hour may be accurately represented on the timepiece of the mind by one second. (Woolf 1928:91)

Whereas Woolf refers to the subjective experience of duration through the meandering workings of the human mind, Winterson, more radically, holds that

this subjective experience can actually produce radical jumps between different points in spacetime. This idea is not only communicated through the voices of Winterson's protagonists; it is also inherent in the way she structures her novels, and particularly in the way she uses various disruptions of linear time. I will expand on these structures in chapter 5. Time shifts in Winterson's fiction are not merely meant to amuse or to marvel, they signal instead a specific mentality, a particular way of looking at the world, and, conversely, the erratic way the world presents itself to her.

In Winterson's view, the common-sense notion of time does not match the workings of our mind at all. The human mind, she feels, does not experience time in any rigid form. She rather thinks of it as an incessant time traveller, an illusionist, and a fantasist. This, at least, is what Winterson suggests in the passage below.

Did my childhood happen? (...) Everyone remembers things which never happened. And it is common knowledge that people often forget things which did. Either we are all fantasists and liars or the past has nothing definite in it. I have heard people say we are shaped by our childhood. But which one? (*STC* 92)

Although Winterson does not directly refer to the psychology of memory, there are obvious parallels between the ideas she expresses here and contemporary research in this field. Quite recently, the phenomenon of 'recovered' or 'false memories' has led to the questioning of the reliability of psychoanalysis. The Houston trials of 1998 showed that psychoanalytic treatment had 'created' rather than 'recovered' memories of incest experiences during childhood. The preconception of the treatment determined the outcome – the past was 'made' by attempts to remember; attempts that proved to construct rather than to reflect. As a consequence, False Memory Syndrome has become a widely discussed phenomenon. To many, these insights imply that in our memory, and therefore in our dealing with the past, true correspondence or mimesis is a fiction. Following in the physicists' footsteps, psychologists were also confronted with the measurement problem; they became aware that their preconceptions determined the outcome of their observations.

By questioning the validity of memory, and the 'pastness' of the past, Winterson subverts the common-sense notion of time (and of history). The distinction between past and present dissolves:

Past? Present? Future? The language of the dead. Totality of time. (GS 49)

Winterson suggests that the common-sense concept of time is no longer true. If this is so, how could it have remained so powerful? Like Michel Foucault, Winterson believes that not its closeness to whatever truth, but science's aura of power plays an important role here. Following this line of argument, it was the aura of power and certainty that surrounds traditional science, which produced the common-sense image of time.

The unity of discourses on madness [or linear time, A.E.] would not be based upon the existence of the object 'madness' ['linear time' A.E.] or the constitution of a single horizon of objectivity; it would be the interplay of the rules that make possible the appearance of objects during a given period of time: objects that are shaped by measures of discrimination and repression (...) (Foucault 1997:32-33)

If we apply Foucault's argument to the social construction of the concept of 'time', the mechanical worldview, with its idea of continuity, has proven more powerful than notions that posited discontinuous and whimsical ideas of time. Winterson refuses to acquiesce in this status quo. All through her work, it is obvious that she wants to endorse other, repressed, experiences of and discourses on time. And that is why she combats science with science: she explores the artistic possibilities of the new physics. Winterson believes that the undisciplined, fantastic ideas that (to her) spring from the conclusions of quantum mechanics, point the way out of discursive oppression, and out of the dreariness of modernity. She wants to achieve greater acceptance for miraculous and fantastic modes of thought, not only as valid ways of thinking, but also with a truth value comparable to the aura of truth that still surrounds our common-sense worldview.

Winterson imports such abstract phenomena (or theoretical constructs) like black holes and wormholes into *Sexing the Cherry* and *Gut Symmetries*, to express the idea that strict divisions between past, present and future are not tenable, and to open up the possibility of time shifts. She juxtaposes fairy tales and the new physics to produce a new sensation of time: she crosses not only the boundaries between genres or epistemological classes, but also between various historical periods.

When I look out of this window I am looking back into the past. It's one of those wormholes you people talk about, a membrane between now

and then. A tunnel of energy. I work here, at this window, pulling the past like Rapunzel's hair. (GS 122)

"Rapunzel" is a seventeenth-century Italian fairy tale, that reached a wide audience when the Grimm brothers published it in their collection *Kinder- und Hausmärchen* in 1812. Winterson fuses theoretical constructs (wormholes) and a fairy tale ("Rapunzel") to enrich and embellish a worldview otherwise, at least in her opinion, devoid of depth. In the passage above, Alice is not talking of the past as something that has vanished. To her, the past is accessible from the present. In the passage below, we see that Alice considers the division between past, present, and future as the product of a purely rational state of mind, necessarily unsatisfactory and incomplete:

Walk with me. The past lies in wait. It is not behind. It seems to be in front. How else could it trip me as I start to run?
Past. Present. Future. The rational divisions of the rational life. And always underneath, in dreams, in recollections, in the moment of hesitation on a busy street, the hunch that life is not rational, not divided. That the mirrored compartments could break. (GS 20)

Man is not in control of the world he is living in, Alice is saying here. Reality can trip you up, it can break. According to Winterson, time shifts do not merely occur before the mind's eye, they are real experiences that nature confronts us with. Time shifts continually occur in our consciousness, presenting us with a succession of discontinuous images, experiences, ideas, expectations, perceptions and associations. Therefore, Winterson's idea of time defies the Aristotelian idea that time should be visualised as a line. She undermines the concept of historical development, denying logical sequentiality and causality. Winterson replaces the 'line' by the 'jump', both through time and through space (cf. page 103).

Strange Simultaneities

Boating for Beginners owes much of its wit to the anachronisms Winterson creates, conjoining persons, concepts, theories, vocabulary, institutions and objects from different times in one fictional world. Winterson creates anachronisms by having these things from different epochs meet in one world. In our common-sense understanding of time, everything has been assigned to specific loci on a historical timeline, and when this line gets tangled up like "a ball of string full of

knots” (OAF 91), unexpected ‘crossroads’ in time emerge where elements from the twentieth century collide with archaic objects and concepts. Commerce, photography, tourism, pop music and poststructuralism, for instance, by common consent do not belong in the era of the Old Testament. Consider this passage, however, wherein Noah and God decide to dramatise their books *Genesis or How I Did It* and *Exodus or Your Way Lies There*:

Ham and Shem were to play different aspects of YAHWEH because everyone agreed that God is a multifaceted and complex character who shouldn’t be restricted by a single actor. (BFB 21)

Here, biblical figures ventriloquize poststructural jargon on the fragmentation of the subject. In another passage, the twentieth-century tourist’s blasé attitude is juxtaposed to the sacred atmosphere of Mesopotamia:

Noah was an ordinary man, bored and fat, running a thriving little pleasure boat company called Boating for Beginners. Gaudily painted cabin cruisers took droves of babbling tourists up and down the Tigris and Euphrates, sightseeing. (BFB 12)

Noah is depicted as a small entrepreneur in a consumer society that is somehow situated in a time when Genesis still had to be written. The effect of this narrative strategy is that the familiar notion of sequentiality, linear development and causality have become useless. All moments in time exist at the same time; they simply *are*, they do not fade away. Apart from its humorous potential, this strategy also has philosophical implications. Winterson’s technique brings to mind Deutsch’s idea of the ‘multiverse’ (cf. page 130). Although we do not find explicit references to the new sciences in *Boating for Beginners*, the simultaneous ontology that constitutes its fictional world certainly echoes the idea of the multiverse. In postmodern historical fiction, the author often mixes ‘imagined’ or ‘possible’ situations with those that are generally considered realistic, often with the intention to ridicule distinctions between time frames or between the ‘real’ and the ‘imagined’. Elisabeth Wesseling for instance mentions that Angela Carter in *The Infernal Desire Machines of Doctor Hoffman* (1972) has “Van Gogh writing *Wuthering Heights*, Milton painting the frescoes on the walls of the Sistine Chapel, and other such incongruous concoctions” (Wesseling 1991:155). But Winterson is not satisfied by merely bringing forward other possibilities in history and making them ‘real’. In her historical novels, she also purposely creates a “complex ontology involving different domains”, that are “populated

by different kinds of beings” (McHale 1987:36). So we see two different strategies to equate the possible (but unreal) with the actual, and that is, firstly, by comparing alternative paths in history – ‘the path not taken, the forgotten angle’ – with the well-trodden paths of what has hitherto been considered ‘real’ or ‘actual’ history, and, secondly, by simultaneously featuring inhabitants of different ontological orders in one new, amalgamous, eclectic order.

Looking at Winterson’s work to date, it is in *Gut Symmetries* that borrowing from the new sciences is most frequent and most explicit. The important role that the past plays in our present is a theme that pervades Winterson’s oeuvre, but it takes different forms in different novels. In *Sexing the Cherry*, Winterson uses images that recall T.S. Eliot’s poetry, especially “Four Quartets”, in which time is an important theme. In both works, we are presented with a strange, uncommon conception of time. Eliot also speaks about this in his essay *Tradition and the Individual Talent*. The past is not yet finished, Eliot argues. All times exist at once,

(...) and the historical sense involves a perception, not only of the pastness of the past, but of its presence; the historical sense compels a man to write not merely with his own generation in his bones, but with a feeling that the whole of the literature of Europe from Homer and within it the whole of literature of his own country has a simultaneous existence and composes a simultaneous order. (Eliot in Abrams 1993:2171)

Winterson voices a very similar thought in the following passages:

Time: Change experienced and observed. Time measured by the angle of the turning earth as it rotates through its axis. The earth turning slowly on its spit under the fire of the sun. (*AL* 67)

Time turns me under the sun but I can turn the sun through time. Here, there, nowhere, carrying white roses never red. Mitylene 600 BC, the city 2000 After Death. All art belongs to the same period. The Grecian drinking horn sits beside Picasso’s bulls, Giotto is a friend of Cézanne. Who calls whom? Sappho to Mrs Woolf - Mrs Woolf to Sappho. The Over-and-Out across time, the two-way radio on a secret frequency. Art defeats Time. (*AL* 67)

Both to Eliot and to Winterson, all art has a simultaneous existence. Their writing reveals a perspective on time that resembles that of late twentieth-

century physicists – those physicists who believe in reality as a ‘block-universe’: a universe in which

(...) the whole of physical reality – past, present and future – is laid out once and for all, frozen in a single four-dimensional block. (Deutsch 1998:268)

Eliot and Winterson

Time present and time past
Are both perhaps present in time future
And time future contained in time past.
If all time is eternally present
All time is unredeemable.
What might have been is an abstraction
Remaining a perpetual possibility
Only in a world of speculation.
What might have been and what has been
Point to one end, which is always present.
Footfalls echo in the memory
Down the passage which we did not take
Towards the door we never opened
Into the rose-garden. (Eliot 1969:71)

These are the first fourteen lines of Eliot’s “Four Quartets”. What Eliot is saying here is quite unconventional, if not revolutionary – certainly if one considers the time in which these lines were written. Although the phrase “time future contained in time past” may be an expression of teleological or deterministic thinking – both old philosophical ideas – Eliot’s words can also be taken to mean that our future selves take us by the hand, just like our past selves. The phrase “time present and time past are both perhaps present in time future” then, would mean that past and present versions of our selves are not mere memories but continuous realities – those other selves would be characters with whom we can communicate. This could mean that the present and the past live on, a statement that Winterson makes in *Sexing the Cherry*:

Lies 1 : There is only the present and nothing to remember.

Lies 2 : Time is a straight line.

Lies 3 : The difference between the past and the future is that one has happened while the other has not. (STC 83)

Sexing the Cherry bears references to “Four Quartets”. We can see in the aphorisms above that Winterson shows her disapproval of the common-sense notion of time. Eliot condemns this notion of time as follows:

You shall not think ‘the past is finished’
Or ‘the future is before us’ (Eliot 1969:188)

Both writers reject the common-sense notion of time, and do so by using authoritative language: aphorism, enumeration, and imperative. Also, in the following passages both writers connect the notion of ‘invisible lives’ to the image of people sitting in trees:

For the most part I can see only the most obvious detail, the present, my present. But sometimes, by a trick of the light, I can see more than that. I can see countless lives existing together and receding slowly into the trees. (STC 92)

(...) for the leaves were full of children (Eliot 1969:172)

Ascend to summer in the tree
We move above the moving tree
In light upon the figured leaf (Ibid. 172)

The moment in the arbour (...),
The moment (...),
(...) involved with past and future. (Ibid. 173)

There rises the hidden laughter
Of children in the foliage
Quick now, here, now, always –
Ridiculous the waste sad time
Stretching before and after. (Ibid. 176)

While Winterson sees “countless lives receding slowly into the trees”, Eliot hears “children in the foliage”. He rejects the “waste sad” notion of linear time and favours simultaneity: “now, here, now, always”. In Winterson’s text, too, the narrator is able to experience time as simultaneous, an experience triggered by “a trick of the light” reminiscent of Eliot’s phrase “light upon the figured leaf”. Eliot’s image of laughing children sitting in a summer tree produces an intimate experience of nostalgia in the reader – bringing the past into the present. In Winterson’s text, people’s lives somehow ascend to treetop level, which is a

magical and beautiful event – producing an experience as intimate as Eliot’s nostalgia. So, in *Sexing the Cherry*, Winterson is clearly recycling images from “Burnt Norton”. In a recent interview, Winterson explains why:

MR: You have said that *Sexing the Cherry* is a meditation on T.S. Eliot’s “*Four Quartets*”. How?

JW: It’s about time. It’s about the nature of time, and time is one of the things that I’m obsessed with... What it is, how it affects us, how it moves through us, how we move through it. And so I took that poem as a starting point to explore. And of course the river runs through *Four Quartets* and there’s always water in my work, but the river runs through *Sexing the Cherry*, the river Thames is very important there. Just as it is in Virginia Woolf’s *Orlando*. We use these things because they come, already full of meaning. It was Peter Ackroyd who said in his Dickens biography that simply to introduce the Thames into a book is to bring with it all of that weight of history which has gone before, and I was trying to do that. I was using it literally and metaphorically as a place where time could flow. (Winterson 2002c)

Before I go on to show why these correspondences between the work of Eliot and Winterson are interesting, the end of this passage requires some explanation. Although I said earlier that Winterson does not believe that time passes linearly, in this passage Winterson indicates that time flows. ‘Flowing time’ is a concept usually associated with the Newtonian idea of time. But to Newton, ‘flow’ means ‘to flow equably’, whereas Winterson associates ‘flow’ with a movement far more turbulent, as we can see in this passage from *Gut Symmetries*:

A river (...) can flow in circles; its eddies and whirlpools regularly break up its strong press forward. The riverrun is maverick, there is a high chance of cross-current, a snag of time that returns us without warning to a place we thought we had sailed through long since. (GS 104-105)

Winterson’s ‘flow’ is not the same ‘flow’ as in the Enlightenment notion of time. To her, time does not pass by, and movement through time is not predictable.

Winterson’s attitude towards the past and historical development can be seen as a Romantic as well as a postmodern reaction against the linear conception of time implicit in the philosophy of the Enlightenment. The Romantic and postmodern perspectives on time and history can be seen as reactions against the a-historical attitude of the Enlightenment. Postmodernists set their sense of nostalgia and historical eclecticism against the heritage of the

Enlightenment, because they consider the metanarrative of progress as oppressive. The Romantics turned to the past to escape from society. Stephen Bann, in *Romanticism and the Rise of History*, explains that the interest in the past that emerges in Romanticism is not the same as the historical consciousness that went before. In fact, a fundamental shift took place; history was no longer regarded as an isolated practice, unconnected to society, but was instead believed to influence the whole of society and slowly caused boundaries between disciplines to fade. "History", says Bann, "is the relentless appropriation, by text, figure, and scenographic representation, of what is already irretrievably lost" (Bann 1995:10). Winterson uses this strategy of "relentless appropriation" and of escape, however, without feeling that the past is "irretrievably lost".

Her historical and escapist attitude is not always directly inspired by the Romantics. In the part of *Sexing the Cherry* I just discussed, Winterson is in fact advocating a Romantic historical attitude by recycling imagery of a Modernist poet. She uses Eliot's themes and language as a vehicle to express a complaint about the modern western world. Both Eliot, in his early poetry like "The Waste Land", and Winterson, in *Sexing the Cherry* and *Art & Lies*, react against the decay of culture. Both Eliot and Winterson feel that literature has an important role to play in an increasingly superficial society. Even though they wrote in different periods, they are equally aware of the growing complexity of civilisation and language. They both believe that a writer should create works of art that reflect that complexity, and create a poetic language able to function as an antidote against superficiality, a language that questions received strategies of representation. It makes sense for Winterson to refer to Eliot rather than the Romantics when discussing attitudes to the past, because the Romantics did not question conventional ways of representing reality as Eliot and other Modernists do. Both Eliot's and Winterson's treatment of time in their works contributes to their search for a higher reality. It exemplifies their struggle against the conventions of realism in art. They aim at an alternative way of describing reality, foregrounding the power of language to create worlds that counteract the landscapes of the 'waste land' of modernity. Keeping the past alive is an important strategy in this creative process.

Both Eliot and Winterson position themselves as anti-moderns. Their texts disavow the modern belief in a "Motor von Steigerungs- und Erweiterungsprozessen der Rationalität" (Welsch 1991:75), simply because they undermine the linear model that is prerequisite for "Steigerung" and "Erweiterung". When the past is not finished and the future is not before us, the

programmatic outline of modernity loses its value. The modern project and its prospects for progress depends on a view of time as linear and steady. Modern philosophies like Hegel's and Habermas' rest on the notion of time as passing by. Both Eliot and Winterson contradict such notions.

In "Four Quartets", Eliot says that "all time is eternally present". When David Deutsch discusses time as a quantum concept, he uses a description that is remarkably similar:

So a particular moment cannot become the present, or cease to be the present, for these would be changes. Therefore, the present cannot, objectively, be a single moment. (Deutsch 1997:265) [*Italics A.E.*]

This shows the extent to which Eliot was in tune with the evolving ideas of his time. For Winterson, however, this idea is only a starting point. In "Four Quartets", Eliot says that "what might have been is an abstraction". So what could occur, but does not, remains "a perpetual possibility / Only in a world of speculation" (Eliot 1969:171). In other words: he regards possible worlds as unreal worlds: they have a fictional existence rather than a physical one. So, where Winterson (in line with current science) attaches reality status to the possible, Eliot directs the possible to the realm of fiction.

David Deutsch and Winterson both confirm the ontological status of the possible, whereas Eliot sticks to an ontology characterised by a bifurcation between 'real' and 'imagined'. Contemporary physics maintains that we, linguistically and mentally, discern between factual statements and counter-factual statements. Deutsch states that we evolved particular language constructs for talking about different kinds of snapshots: tenses for time, and 'if...then-constructions', and conditional and subjunctive forms of verbs for possibilities.

We have traditionally placed these two types of snapshot – other times, and other universes – in entirely different conceptual categories. Now we see that this distinction is unnecessary". (Deutsch 1998:278-279)

An example of what we agree to be a factual statement is 'Jeanette Winterson is a writer'; a counter-factual one would be 'Jeanette Winterson is a clergywoman'. Now, if we look at history in a traditional way, we could say that if we make a polaroid picture of all facts and events, everywhere, and at every given moment, we have a pile of pictures that together make up the whole factual history of the universe. All polaroids ordered chronologically would thus be universal history.

Consider the following situation: I am standing opposite a man and I am making a choice: 'shall I kiss him, or shall I not kiss him?'. In the traditional view of history, if I choose not to kiss him, the moment-of-not-kissing is pictured and added to the archive of polaroids. Any other choice, and the subsequent outcome, would not exist in the universe.

However, according to physicists that believe in the Multiple Worlds Interpretation of quantum mechanics – and therefore in the existence of parallel universes, these alternate histories *do* exist. From this perspective, the world splits into many worlds, one world for each different possibility. In this way, the set of worlds branches endlessly. What we perceive as the present, lies in the pasts of an innumerable amount of different futures. Everything that *can* happen, does happen, in other universes. In these places, the world in which 'I kissed him', and the world in which Jeanette Winterson became a clergywoman actually exist. Another example: according to most historians of science, the scientist Michael Faraday died in 1867. But as Deutsch puts it: "...in the multiverse there are almost certainly some universes in which Faraday died in 1830" and "There is nothing arbitrary about which variants of our universe the counter-factual 'if Faraday had died in 1830...' refers to: it refers to *the variants which really occur* somewhere in the multiverse" (Deutsch 1998:276). In Deutsch's view, the multiverse contains not only the version of ourselves that we know, but also innumerable other lives. There are worlds in which Winterson became a clergywoman and there are versions of me that did kiss the man. Perceived in this way, there is no great ontological difference between past, future and possibility. David Deutsch argues that

The snapshots which we call 'other times in our universe' are distinguished from 'other universes' only from our perspective, and only in that they are especially closely related to ours by the laws of physics. They are therefore the ones of whose existence our own snapshot holds the most evidence. (Deutsch 1998:278)

As we have seen, T.S. Eliot postulates a great ontological difference between time and possibility. Winterson and Deutsch, however, do not. In the next section, we will see how Winterson weaves possibility, past, present and future into a single model of reality.

The Grid: Physics and History

The scene I have just described to you may lie in the future or the past. Either I have found Fortunata or I will find her. I cannot be sure. Either I am remembering her or I am still imagining her. But she is somewhere in the grid of time, a co-ordinate, as I am. (*STC* 93)

Here, Jordan mentions the grid, which is perhaps the most abstract concept to be found in Jeanette Winterson's work. It describes how time, space and possibility are joined. The grid can be seen as the underlying organising principle of spacetime. It is like an infinite net or web, a coherent whole of co-ordinates, where places and events interlace. In the grid, reality is a series of parallel events, parallel places, parallel times, and parallel possibilities. The points where the threads are knotted (co-ordinates) can be seen as states of affairs; as snapshots of how things were/are/will be. As we can see in the passage below, Winterson sees reality as the simultaneous existence of all possible times, events, and selves:

If all time is eternally present, there is no reason why we should not step out of one present into another.

The inward life tells us that we are multiple not single, and that our existence is really countless existences holding hands like those cut-out paper dolls, but unlike the dolls never coming to an end. (*STC* 90)

From Jordan's musings about Fortunata cited above, we gather that a person's consciousness moves through this simultaneity, i.e. the grid, much in the same way as a particle orbits around a nucleus. Particles circle in steady orbits, yet sometimes they move one layer closer to or away from the nucleus: a quantum jump transports the particles to another orbit. Likewise, the human consciousness experiences a 'steady orbit' of continuity and flow; yet sometimes it is blown off course. When this happens, our experience of spacetime is ruptured and fragmented. Subjective experiences highlight a highly capricious path through the grid. This path is not a linear succession of events, as is clear, for instance, from Jordan's unexpected time travel (cf. page 118). In chapter 3, too, we saw that Winterson's characters were violently transported from one space to another (cf. page 93). Such shifts often occur in Winterson's work. In chapter 5, I shall go into this in more detail, discussing the way in which Winterson stresses discontinuity in the interplay between spacetime and the self (cf. page 172).

The narrator in *Written on the Body*, too, experiences bulges and holes in spacetime that he or she cannot account for.

But molecules and the human beings they are a part of exist in a universe of possibility. We touch one another, bond and break, drift away on force-fields we don't understand. (*WOB* 62)

Not only according to Jordan in the passage quoted above, but also according to this narrator, people move freely and discontinuously through fields of coordinates. They experience non-linear movements through a universe structured not unlike Deutsch's 'block universe' mentioned earlier. Such movements are non-linear, and as such they fit perfectly in Winterson's non-modern politics of aestheticisation, because they enable her to re-enchant established accounts of reality.

The grid is at the same time a model for reality that does away with boundaries. The grid is comprehensive and infinite. It also comprises those realities we do not experience in an everyday state of mind. The grid in fact is the framework that underlies time travel, cyclical movements, wormholes and the like in Winterson's work. Such 'immaterial' elements of our world as metaphysical revelations, possible universes, the past and the future, are considered equivalent to what was formerly seen as 'actual', as 'real'. Fiction is therefore given an epistemic status equivalent to truth, and vice versa. The fact that consciousness behaves unpredictably in a grid where all kinds of ontological layers are equal, allows Winterson to achieve epistemological equivalence among discourses. As can be concluded from Brian McHale's *Postmodernist Fiction*, postmodern literature foregrounds ontological concerns, and describes amongst other things 'possible' and 'impossible' universes, in line with "contemporary 'possible-worlds' theorists" (McHale 1987:27). Likewise, Winterson's idea of reality parallels the scientific concept of the multiverse. Postmodern literary writing and postmodern historiography are, thus, in line with what we could call 'postmodern science'. Postmodern historiography is in fact an epistemological upgrading of alternative histories; incorporating into history perspectives that were traditionally regarded as untrue. Postmodern historiography and the new sciences in fact both assign truth value to the imaginary. Indeed, according to Deutsch, facts that are mentally construed in our linguistic system with 'if...then' constructions, are not just mental constructs but physical actualities.

Appealing to imaginary universes does not work, because we can imagine any universes we like, in any proportions we like. But in the multiverse, universes are present in definite proportions (...) (Deutsch 1998:276)

In the same way, postmodern writing ‘upgrades’ alternative side-stories, recognisable by their conditional status, like this passage from *The Passion*:

Strange to think that if Bonaparte hadn’t divorced Joséphine, the geranium might never have come to France. (TP 155)

Winterson subverts hierarchic historical structures. Traditionally, national and political history (about Napoleon Bonaparte, for instance) are subsumed under ‘important history’, while the history of quotidian life (about geraniums in the household, for instance) was considered of marginal importance. Winterson’s notion of the grid therefore enables her to come up with a complex ontology that does away with boundaries not only between space and time, but also between time and possibility, and the ‘actual’ and the ‘fictional’. The latter diffusion of borders destabilises the hierarchies that dominated traditional historiography. Fiction or non-fiction – from within the grid, this distinction becomes meaningless:

I don’t know if other worlds exist in space or time. Perhaps this is the only one and the rest is rich imaginings. Either way it doesn’t matter. We have to protect both possibilities. (STC 128)

Postmodernism and Time

He wrote, FUTURE. And then he put a line through it. What did he mean? His future? My future? I thought back to those sea-salt days when the sun had turned the grass yellow and men had married mermaids. I started my little book then, the one I still have and Domino had turned on me and called the future a dream. *There’s only the present, Henri*.

He had never talked of what he wanted to do, where he was going, he never joined in the aimless conversations that clustered round the idea of something better in another time. He didn’t believe in the future, only the present, and as our future, our years, had turned so relentlessly into identical presents, I understood him more. Eight years had passed and I was still at war, cooking chickens, waiting to go home for good. Eight years of talking about the future and seeing it turn into the present. Years of thinking, ‘In another year, I’ll be doing something different,’ and in another year doing just the same.

Future. Crossed out.
That's what war does. (TP 86)

In *The Passion*, war kills Henri's dreams about the future, perhaps even the future itself. Winterson chose Napoleon here, because it was he who institutionalised a number of important Enlightenment principles in his Empire. His world was built on a ruthless rationality, devoid of human feeling. This systematic rationality presented itself not only on the battlefield, but also when he reshaped France into a modern nation state. He founded universities, initiated modern building projects and, important in the context of the novel, straight roads. Winterson relates this modernity, which was supposedly the era of progress, to Henri's inability to dream and feel. All that remains is a bitter disappointment. The values Winterson deems so highly, the imagination, dreams, are victimised by a totalitarian regime.

Gerald James Whitrow, in *Time in History*, describes how people held on to the idea of progressive cultural development, and which philosophical texts sustained this idea. He also shows that a cyclical idea of development instead of a linear one came in fashion after Blake and Shelley gave voice to "the menace of time" (Whitrow 1988:179), and after Yeats and Nietzsche argued that cultural development goes through cycles. He explains how the great wars of the twentieth century gradually yet unavoidably put and end to the age of optimism. In the first decades of the twentieth century, when the socio-economic problems that surrounded the First World War made themselves felt, the perspective on human thinking and enterprise shifted radically:

And the twentieth-century historians and sociologists Spengler, Pareto and Toynbee all believed in the cyclical nature of history. (...) Following the First World War the general climate of opinion, particularly in Germany, caused the pessimistic world views of Oswald Spengler to attract considerable attention. His widely read book *The Decline of the West* seemed to many British readers more cogent than the old-fashioned optimism expressed by J.B. Bury in his book *The Idea of Progress*, published in 1920. (Whitrow 1988:179)

Stent believes, like Spengler, that scientific progress may be coming to an end. (Whitrow 1988:180)

Warfare played a decisive role in the shift from progressivism to cultural pessimism, and the way to describe this shift is to say that the search for

continuity was abandoned in favour of the pursuit of discontinuity. As Michel Foucault puts it in *The Archaeology of Knowledge*,

Beneath the great continuities of thought, beneath the solid, homogeneous manifestations of a single mind or of a collective mentality, beneath the stubborn development of a science striving to exist and to reach completion at the very outset, beneath the persistence of a particular genre, form, discipline, or theoretical activity, one is now trying to detect the incidence of interruptions. (Foucault 1997:4)

Baltimore scholar Elizabeth Deeds Ermarth describes how postmodern writing and traditional history are opposed to one another in terms of the expression of temporality: whereas in history, “consciousness is rationalized by a narrative time that extends from here to eternity”, postmodern writing recognises “disturbing fractures”. History has traditionally preferred the technique of “single point perspective”, that was first developed in Renaissance painting and that posits a “common horizon”. Postmodern writing celebrates the approach that was also traditional in Medieval painting, the “quasirepresentational space fractured by competing vanishing points”. There is no longer “(‘a world’) that remain[s] the same regardless of his or her position and [that] extend[s] to infinity, thus having the value of universal truth”. Time is no longer “a neutral homogeneous medium like the space of pictorial realism” but rather belongs to a “counterintuitive system” that is part of a “culture with values diametrically opposed to the culture of representation and science” (Deeds Ermarth 1992:24-27).

The old worldview based on linear progression, that celebrated the notion of time as accumulation, was replaced by a worldview in which time is untrustworthy (echoing the theory of relativity) and discontinuous (echoing quantum mechanics). In the postmodern worldview, time is not deterministic. In Winterson’s world, it is open-ended, enabling the Romantic soul, filled with *Sehnsucht*, to escape from the confining terror of the construct we call ‘everyday reality’.

If western thought abandons the idea of progressivism, then the future can no longer uphold the promise of happiness. The postmodern era brought with it a rising suspicion towards programmatic promises of a better collective future. Instead, it affirms the value of the present. We do not live to realise our dreams in the future: one should seize the present. In *The Passion*, Winterson affirms her focus on the present:

Domino said it was in the present, in the moment only that you could be free, rarely and unexpectedly. (TP 154)

Forget about controlling the future, Winterson tells her readers, start accepting the unexpected. For Winterson, chance – contingency – is the much-needed antidote for a world of control freaks. By denying the existence of progress through human action, Winterson eschews the *Dialektik des Geistes*, that is the crux not only of Hegel's philosophy but of modernity as a whole (cf. Welsch 1991). As alternatives to this dialectic, Winterson installs the uncertain and the accidental as the driving forces of a new worldview. In her work, the notion of contingency is not confined to its contents alone, it is also embedded in the structure of her novels. *The Passion*, for instance, opens with Henri's narrative. He is abruptly interrupted when the second chapter starts, which is narrated by another character, Villanelle. Like the first chapter, the second also portrays part of the Napoleonic wars. Beyond this, however, the two chapters have little in common; they do not share a single character, event, or place. The reader's expectations of continuity are frustrated, as there seems to be no logical pattern in the juxtaposition of these two stories. There is no way to link Henri's and Villanelle's narratives until the two of them meet in the third chapter. With the juxtaposition of the two stories, Winterson expresses the idea that events do not have a deeper cause or a purpose; they just *are*. And they are beautiful in themselves, in the present. In *The Passion*, for instance, the love affair between Henri and Villanelle ends without a dramatic leap of the heart, without playing out a plot as we find it in classical tragedy. The absence of such an apotheosis will dissatisfy any reader seeking for 'completion'. Winterson's repudiation of linear plot is even more manifest in the structure of *The PowerBook*, in which the narrator, sitting behind her computer screen, sends stories on request, a new one every night. The separate e-mail sessions generate meaningful moments that stand on their own, and that are, eventually, lost in cyberspace. Coherence and continuity are lost, and the locality and temporality of meaning are reaffirmed.

In *Oranges Are Not the Only Fruit*, we find a passage about the writing of history and our ability to recapture the past.

(...) history is a string full of knots, the best you can do is admire it, and maybe knot it up a bit more. (...) There is a certain seductiveness about dead things. You can ill treat, alter and recolour what's dead. It won't complain. (OAF 166)

Winterson argues that trying to make sense of the chaos of remembered and recorded time is impossible and pointless. She feels we should accept different explanations of and different perspectives upon the past in the disordered way that we find them.

In *Gut Symmetries*, she expresses doubts about the supposed truth of logbooks, which in history as well as in science are often seen as faithful recordings of the past.

Should it daunt me that the things I thought would be important, my list of singularities and tide marks, is as useless as the inventory of a demolished house? I no longer recognise the urgency of my old diaries with their careful recording of what mattered. What I write down is in another person's handwriting. What has held me are the things I did not say, the things I put away. (GS 79)

Winterson questions realist epistemological notions, and proposes a postmodern acceptance of the erratic way the human mind works. Postmodern notions of the fragmented self feed her distrust of objective memory. The thinking and experiencing self may even be so scattered that the notion of coherence in history or other recordings of reality must necessarily be abandoned as well. How can maps of the world be standardised and unified if the self, the mind is not? To Winterson, the mind makes mysterious jumps in the simultaneous structure of past, present, future and possibility – a structure we have called the 'grid'. This activity of the mind corresponds with postmodern notions of fragmentation and uncertainty. It puts an end to predictability, and undermines realism. As Deeds Ermarth puts it:

What postmodernism supplants, then, is the discourse of representation characteristic of the long and productive era that produced historical thinking, or what Meyer Schapiro calls "the immense, historically developed capacity to keep the world in mind." (Deeds Ermarth 1992:5)

Winterson does not believe in this capacity to "keep the world in mind" – the ability to remember the past as it was. This does not mean, however, that we should cease to remember. The question is, how to remember. Writing history does not take place outside of ideology. The past is always a reconstruction coloured by present preoccupations and present language. Historians have discussed this problem extensively and have developed different views on it. Some say that we should try to transport ourselves back to the period under

research, and absorb as many ideas, facts, thoughts, feelings, intuitions relating to the time in question as possible. By imaginatively immersing oneself in that distant paradigm, one would be able to understand and explain what happened at the time. Others, however, radically discard this method. They doubt the status of such comprehensive accounts, fluent narratives, gained from today's interpretations of a limited number of obscure facts. The modelling of raw historical material, they say, cannot result in a reliable representation of the past. The question remains whether the narratives in question, the resulting logical patterns, are inherent in the past or whether they 'merely' are historians' mental exercises. Is history science or poetry? Is the act of structuring and explaining a creative or a mimetic activity?

In "The Historical Text as Literary Artifact", the third chapter of his *Tropics of Discourse, Essays in Cultural Criticism*, the American historian Hayden White discusses a metahistorical question relevant to the one I just described:

What is the epistemological status of historical *explanations*, as compared with other kinds of explanations that might be offered to account for the materials with which historians ordinarily deal? What are the possible *forms* of historical representation and what are their bases? (White 1978:81)

He poses the question whether history should be seen as a truthful or a fictional representation of past sets of events. He argues that there is no real distinction (as Northrop Frye maintains) between myth (being an invented story of possible events) and history (as a scientific, objective record of past events). Consequently, history – like fiction – is the product of invention. For White:

(...) there has been a reluctance to consider historical narratives as what they most manifestly are: verbal fictions, the contents of which are as much *invented* as *found* and the forms of which have more in common with their counterparts in literature than they have in common with those in the sciences. (White 1978:82)

Hayden White says that historical narratives are, unlike those in the sciences, to a large extent constructed. That makes him an adherer of the 'two cultures' philosophy. Thomas Kuhn, as I mentioned in chapter 1, argues that even the 'facts' that are produced by the natural sciences, are fictional constructs as well. He feels that the narrative structures in which science casts all experienced facts, whether written in mathematical or other languages, are to a large extent

fictional. White believes that the events of the past are turned into a story by means of several techniques: highlighting, suppression, but also point of view, and variation of tone. These are the same techniques that are used in literary writing, and not methods we would expect in scientific texts. But science is like history in that it tries to make sense of sets of events, and expresses its conclusions in narrative form. For instance, when events are regarded as sequential and causally connected, the structure of the scientific narrative will stress this continuity.

Hayden White does not question the linear succession of events. Looking at it rationally, it may not seem sensible to deny that the wheel was invented before the car was. However, it cannot be denied that there are other ways to plot the chronological arrangement of events. To say that the past is always plotted in the light of the present is to say that the present seems to take prevalence upon the past. On the one hand, there is our present-day perspective; on the other the facts that have purportedly taken place in the past. The ordering, writing subject – the historian – is not a part of that past. His perspective is the looking glass that shapes the interpretation of the facts observed. Writing history is not a ‘representation’ but an act of ‘presentation’, creating another reality. The present has become the originating force from which the past derives.

If we now turn to literature again, we can see that postmodern authors, too, acknowledge this crisis of historical representation.

Postmodernism transforms the historical construction of temporality that took shape in the Renaissance and that informs the humanistic tradition, and it is in this way that postmodernism most radically undermines both realist and humanist practice. (Deeds Ermarth 1992:xi)

Much postmodern literature not only questions the historical method but also erases the boundaries between literature and history. Is it possible to distinguish between writing fiction and writing history? Linda Hutcheon gives a brief overview of the different points of view in the chapter on “Historiographic Metafiction” in *A Poetics of Postmodernism*. I.A. Richards considered literature to consist of ‘pseudo-statements’. Frye opined that “art was hypothetical, not real – that is verbal formulations which imitate real propositions.” (Hutcheon 1988:109). Hutcheon mentions that both Philip Sydney and the structuralists argue that to discuss truth in relation to literature is meaningless. The modern idea of history is founded on a belief in truthful representation, whereas in *Oranges Are Not the Only Fruit*, Winterson writes:

History should be a hammock for swinging and a game for playing, the way cats play. Claw it, chew it, rearrange it and at bedtime it's still a ball of string full of knots. Nobody should mind. (*OAF* 91)

Winterson discards historians' scientific claims. Her perspective on history – that it is a game – undermines all serious efforts to achieve truth. She is giving up on the distinction between history and fiction, like she does on the difference between science and literature.

Science and Literature Revisited

I opened this chapter with Meyerhoff's claim that science stresses one kind of experience and art another (cf. page 107). From what followed, it is clear that the new sciences seem to be working in tandem with, rather than against the arts when it comes to conceptualising (that is also to say: to capture in metaphors) certain experiences of time and space that cannot be rendered by means of the traditional conceptual models we inherited from modernity and before. The concept of linear time, on the one hand, and time as an erratic phenomenon on the other, constitute a bifurcation that cannot be explained by referring to a distinction between science and the arts. The arts have often expressed the idea of time as an arrow, and now science moves beyond the common-sense notion of time. We can explain the concurrence of these two rival concepts of time from the antithesis between the project of modernity, which stresses the logical and predictable nature of time, and postmodernity, to which Winterson contributes, highlighting indeterminate aspects of time.

Although both the theory of relativity and the theory of possible worlds, as well as postmodern rewritings of history, deny the notions of absolute time and absolute history, the Aristotelian worldview is still very much alive. With its enormous tenacity it still dictates our common sense. One way or the other, it must have touched or reflected something essential in human nature to be able to last this long. Perhaps that tenacity causes Winterson's hammering perseverance:

Time is not constant. Time in stories least of all. Anyone can fall asleep and lose generations in their dreams. (*TWOP* 72)

So the past had gone. I had escaped. Such things are possible. (*TP* 125)

The second passage quoted here is very illuminating. Obviously, Winterson feels the need to spell out to her readers, what she is aiming at. It does not suffice to make the past disappear and her character escape – she needs to educate her readers by stressing that “such things are possible”.

Today, people are often only faintly aware of the theory of relativity, and its implications. Yet, they continue to behave according to common-sense notions inherited from the past. For Winterson, two incommensurable ideas of time exist alongside each other. Winterson’s world seems to be caught between these binary pairs: linear versus erratic, law versus whim, science versus art. However, we have seen in this chapter that Winterson not only uses images, ideas, and theories from science to support the linear and law-like, but that she also appropriates science to illustrate the erratic and whimsical. Though science can indeed be an enemy to Winterson, this is not necessarily true for all its manifestations. Winterson rejects those forms of science based on determinism and classical empiricism, as well as, as we will see in chapter 6, forms of science that make use of clinical, distanced methods. She celebrates, however, an open-ended science that can reunite us with magic, wonder, uncertainty, and the passionate involvement of human thinking with the world. Jeanette Winterson’s urge to make the world an enchanted place is therefore not opposed to science per se, but rather to the rationalist mentality in general, to the project of modernity, and to the latter’s remnants in our everyday world, such as the interests of practical management, the administrative concerns of planning and time control. She has always been dismissive of the world of economic interests, as in the following passage from *Art Objects* where science is portrayed as the accomplice of consumer culture:

I like to live slowly. Modern life is too fast for me. That may be because I was brought up without the go-faster gadgets of science, and now that I can afford them, see no virtues in filling the day with car rides, plane rides, mobile phones, computer communication. (...) The garden I cultivate, (...) the time it takes to read a book, none of those things can happen in microwave moments. (...) One of the casualties of progress is peace and quiet. (AO 158-159)

In *Art Objects*, Winterson links science and technology to twentieth-century consumerism. Yet, as we can see from *The PowerBook*, her attitude towards “computer communication” is not consistent at all: it changes according to the use she can put it to. If computer communication can serve as a vehicle for her

philosophy of the marvellous, she is happy to allow it into her sacred spaces. Just like her opinion of science, her opinion of information technology oscillates with the specific context. She *is* consistent in one respect, though. Her rejection of the structures of efficiency, commercial modernity and governmental power, has always been unconditional. Her dismissal of the rationality that is instrumental to modernity goes hand in hand with her rejection of many features of late twentieth-century society, such as supermarkets, central heating, mass media, office work, and commuter rhythms.

Winterson's destabilisation of the common-sense worldview, coupled with the way she uses relativity theory to outline alternative conceptualisations of time and history, should be seen as a renunciation of the project of modernity. Her methods of aestheticisation change the image of the world. They form an antidote, not necessarily against science as such, but against the dreariness of institutionalised rationality. This insight into Winterson's writing demonstrates the fallacy of thinking that the interests of literature are ultimately different from those of science. Winterson establishes creative fields of which literature and science are co-producers. She is able to create a world where the binary oppositions between science and literature, rationality and emotion, fact versus fiction, can be overcome. However, we have to be aware that Winterson only accepts science when it is in accordance with her aesthetic ideals of indeterminacy and uncertainty, and, as we will see in chapter 6, with her ideal of passionate involvement and emotional attachment.



‘SCIENCE HAS NO SEX?’ ON GENDER AND RATIONALITY

“Essentialists have (...) held that science is and should be manly”, says Londa Schiebinger in *The Mind has no Sex?* (Schiebinger 1989:273). John Limon makes a similar observation in *The Place of Fiction in the Time of Science*: “Writers, male or female, are taken as the women of the intellectual world, and science seems the most masculine of disciplines. The public image of the scientist (...) is first of all masculine, and second of all, oddly, unsexy” (Limon 1990:26). Genevieve Lloyd’s *The Man of Reason* is a study of the Western philosophical tradition and its ideal of reason as it has been formulated by the ‘great’ philosophers. She shows that ‘reason’ is not a sexually neutral conception (Lloyd 1995). What are Winterson’s points of view towards femininity and masculinity, intuition and rationality? Does she endorse these binary oppositions that have dominated our thinking for so long? Or is she able to deconstruct essentialist notions of femininity and masculinity? We will see that science’s supposed manliness determines her disapproval of it and that she proposes an alternative kind of science, in which female ways of knowing are institutionalised.

Winterson’s novels constantly move in and out of the intellectual discussions that question ideas of female and male identity. Her novels raise questions of sex and gender through their use of vocabulary, the characters figuring in them, opinions that the characters express, narrative structures, and philosophical statements explicitly made. The nature of Winterson’s feminist viewpoint can be illustrated by comparing it to the three perspectives that are generally distinguished within women’s studies. These are sameness feminism, difference feminism, and deconstruction feminism. Usually, these positions are mutually exclusive. Paradoxically, however, Winterson’s work expresses opinions that are derived from each of these positions. In the sections below, I shall therefore discuss to what extent and in which contexts Winterson aligns herself with these

three perspectives. We shall see that Winterson does not take a well-defined stance in the theoretical debate that figures between the lines of her writing. Winterson's philosophy of sex and gender will turn out to be changeable and unstable – she both affirms and deconstructs the ancient opposition between 'femininity' and 'masculinity'.

Sameness Feminism

Sameness feminism holds that the sexes do not differ as much as was traditionally assumed. This position takes the Enlightenment view of rationality as its starting point. Sameness feminism argues that all people deserve respect because they are rational. The human capacity for rationality is precisely what distinguishes us from other creatures in nature, who, not incidentally, are not treated with proper respect. Women have been unfairly excluded from the respect that is due to them as human beings on the basis of the assumption that they are less rational and more 'natural' than men (cf. DiStefano 1990).

In her introduction to Elizabeth Inchbald's *A Simple Story*, Winterson occupies a position close to sameness feminism. According to Winterson, women are as rational as men, but in the eighteenth century 'woman' came to be constructed as different from 'man'.

During the eighteenth century, science and philosophy were working together to provide a picture of a man as a rational self-controlled creature, both subject to the winds of fate or any earlier idea of spooks and spirits. By means of his intellect he was also supposed to be able to control his emotions, though women of course could not. Dorriforth [a character in *A Simple Story*, who is a Catholic priest, A.E.] is a keen example of this thinking. He struggles against passion, is beaten, but once hurt closes his heart entirely and grows to despise emotion. The folly of this and the cruelty it imposes on others is juxtaposed against the sensitive, ever-patient behaviour of Miss Milner's daughter and her companion who constantly expose themselves to love and pain. There's a delicate balance between heart and head, a balance that masculine and feminine polarities have destroyed. Neither sex can be the sole keeper of either, to teach men to think and women to feel is a recipe for disaster. The eighteenth century felt they had to prove that the sexes were different just as their mania for solid ground beneath their feet meant they had to 'prove' that animals couldn't have souls. Once theology and prejudice met up with science (of a kind) many more doors were closed than were opened, especially for women, and the way was paved for those

ludicrous experiments involving the size of women's heads, the weight of their brains, the effect of menstruation on rationality and so on. (Winterson in Inchbald 1986)

Among those engaged in questions on 'women and science' and 'women in science' one can detect a strong preference for sameness feminism. Arguing from the idea that 'different means less', the American science education expert Sheila Tobias and the Dutch scientific journalist Marianne Offereins argue that women deserve to be seen as just as intellectual and just as capable of doing mathematical calculations as men are. They believe that there are no convincing experiments proving that women's brains are any different than men's, and that women, if they are brought up and educated with the same technical toys as boys, will overcome their 'maths anxiety'. The sameness-feminist sentiment Winterson expresses in this introduction cannot be found in her fiction, where she adheres both deconstruction feminism (see below) and difference feminism (cf. page 152).

Deconstruction Feminism

Deconstruction feminism argues that feminism must break with the rationalist paradigm by detaching itself from the assumptions of the modern project and by detaching itself from difference feminism (cf. page 152). In this approach, gender is treated with greater sensibility than in sameness feminism, but with more suspicion than in difference feminism. Deconstruction feminism fiercely rejects the linguistic and conceptual frameworks of rationalism. Avoiding a position either within or outside of that rationalist framework, either for or against essentialist notions of sex difference, deconstruction feminism seeks to transcend the discourse of rationalism and to offer new, decentered, and partial or fractured narratives of opposition. Here, difference is simultaneously upheld and deconstructed (cf. DiStefano 1990).

Jeanette Winterson aligns herself most notably with the deconstruction feminist attitude. I will argue that Winterson creates characters that fall outside the categories of 'sameness' and 'difference'. Jordan and the Dog-Woman, The Twelve Dancing Princesses, the narrator in *Written on the Body*, and Villanelle in *The Passion* are all decentered characters, drifting in a no-man's land, escaping traditional stereotypes of sex and gender. Winterson creates violent women, women with masculine bodily parts, cross-dressers and men and women who

defy traditional gender stereotypes. We shall see that for Winterson men do not have to be rational per se, but that they can adopt a feminine way of thinking.

Winterson's deconstructive practice can be viewed in the light of the theory of *écriture féminine*. Hélène Cixous' and Luce Irigaray's theory of 'women's writing' is applicable to Winterson's deconstructionist practice. The idea of the subject that is implicit in the *écriture féminine* amounts to a critique of the idea of language and of the subject that is expressed in structuralism. This critique addresses the structuralist idea that meaning is created by means of oppositional structures. Cixous and Irigaray point out that the semantic oppositions between such contrasting pairs (male versus female, black versus white, heterosexual versus homosexual) are not really opposites, because in linguistic practice these structures are ordered hierarchically. One side of the opposition is always more powerful than the other. *Écriture féminine* reverses the consensus about the meaning of the feminine and the masculine in our culture.

With her *écriture féminine*, Winterson endows her male characters with non-stereotype gender identities. Take the following couple of sentences:

There's a bird here, a tiny bird that has no mother. (...) At night it sleeps in my room in a collar box. I won't give it a name. I'm not Adam. (TP 156)

To Henri, the narrator of this passage, naming the bird would not be a neutral or innocent act, but a definitive, constitutive act. To give a name entails power. He refers to the Bible, that – displaying an essentialist philosophy – begins with God's creation of the world, and continues with Adam's naming:

19 And out of the ground the LORD God formed every beast of the field, and every fowl of the air; and brought *them* unto Adam to see what he would call them: and whatsoever Adam called every living creature, that *was* the name thereof.

20 And Adam gave names to all cattle, and to the fowl of the air, and to every beast of the field; but for Adam there was not found an help meet for him (Genesis 2:19-20)

Seen from the perspective of Austin's theory of speech acts (Austin 1992) and Sapir and Whorf's Linguistic Relativity Thesis (to which I shall return later), naming is equivalent to creating, making Adam the powerful patriarch of reality. Adam's divine right to name is exclusively masculine. Feminists consider naming – conceptualising – as empowerment. The fact that the Bible does not allow women the right to name can be seen as a marginalisation of the woman's voice.

Winterson, too, regards naming as an act that constitutes reality. In *Art Objects*, she repeatedly stresses the power that language holds over the world:

It is the artist who must apprehend things fully, in their own right, communicating them not as symbols but as living realities with the power to move. (AO 145)

Winterson, however, counters the biblical assertion that men have the exclusive power to create the world linguistically, when she stages Henri as a man who refuses the power that goes along with naming. Winterson wants to differentiate between different kinds of masculinity rather than hold on to one single category. Moreover, the feminine critique of manly empowerment is voiced by a male character – a strategy that undermines oppositional structures.

Before we ask ourselves to what extent Winterson's novels must be regarded as deconstructionist, I shall briefly explain why deconstruction occupies a special place in feminism. As Mary Poovey explains in her article "Feminism and Deconstruction" (Poovey 1988), a feminist use of deconstruction necessarily transforms feminism. To accept the premises of deconstruction is to accept that although the body is sexed, neither sexuality nor social identity is determined exclusively by the body. Instead of reflecting a unitary self, identity is relational; as such, the concept of 'woman' only acquires its meaning from its placement in relation to 'man'. Earlier feminist movements were based on stressing difference, defining typically female characteristics (peacefulness, for instance) and argued that culture would never survive without these. Or they were politically oriented, emphasising equality and sameness, stressing similarities between men and women, arguing that women can do the same things as well as men. Deconstruction feminism, however, calls into question the binary structure implicit in such feminist movements. So, the introduction of deconstruction into feminism was to dissolve feminism as we knew it.

In her novels, Winterson uses deconstruction as a political strategy aimed at reformulating male and female identity. She creates characters that fall outside the traditional categories of 'male' and 'female'. The characters in *The Passion* and *Sexing the Cherry* do not eschew cross-dressing, for instance. Binary structures fade away. We find no transvestites in *Written on the Body*, but the androgyny and the masquerade can be traced in the novel's structure and in the narrative perspective. The central character's sex remains undetermined, which implies

that the character of Louise might either be bisexual or heterosexual (she was already married) and that Elgin's rival could be male, but also female. Just as the exact relation between Elgin and his opponent remains vague, the sexual activities taking place between Louise and the narrator are left unspecified.

Many men in Winterson's books break away from masculine stereotypes. She deliberately creates vulnerable and frightened men to empty the set of characteristics usually associated with the idea of 'man' of its meaning (although she also creates strong men, like the preachers in *Sexing the Cherry*, and Elgin in *Written on the Body*). It would make sense to argue, therefore, that Winterson pleads to discard worn-out identities and role models; that she favours the idea that it is the task of (women-) writers to upturn structures of meaning linked to masculinity and femininity. For the most part, this statement holds up, and Winterson's work converges with what is known in philosophy and critical theory as poststructuralism. But at some points in Winterson's fiction, we can see that she deliberately holds on to the binary model.

Poststructuralist ideas feature in Jeanette Winterson's novels in several ways. At this point, I shall focus on the fuzzy gender of Winterson's masculine protagonists, taking Jordan in *Sexing the Cherry* as an example. Marianne DeKoven defines 'masculine language' as objective, orderly, lucid, linear, mastered, and coherent. Based on this definition, it does not make sense to call Jordan's narrative 'masculine'; to call it feminine would be far more appropriate. He is constantly and chaotically shifting between real and imaginary situations. Furthermore, he feels absent from everyday, common-sense reality and refuses to formulate principles, truths, or other kinds of fixed conclusions. The language he uses reflects this, and is anything but exact and to the point:

In the city of words that I have told you about the smell of wild strawberries was the smell characteristic of the house that I have not yet told you about. The runners of these plants spread from the beds bounded by stone tiles and fastened themselves over terracotta pots and flaking ironwork and hid the big flags that paved the courtyard. (*STC* 20)

Jordan's language fits DeKoven's female kind of language much better than it does its male equivalent: it is anarchic, indeterminate, and open-ended (cf. DeKoven 1983). Jordan's mind does not fit into preconceived moulds of masculinity – his gender is indefinite.

Often, Winterson does not distinguish between gender identities. Not only in *Written on the Body*, the narrator's sex is undetermined; in *The PowerBook* it also

remains unclear whether Ali/Alix is a man or a woman. The passage below shows how Winterson dissolves gender identity:

A man or a woman sunk in dreams that cannot be spoken, about a life they do not possess, comes suddenly to a door in the wall. They open it. Beyond the door is that life and a man or a woman to whom it is already natural. It may not be possessions they want, it may very well be the lack of them, but the secret life is suddenly revealed. This is their true home and this is their beloved. (*STC* 74)

Linguistically speaking, 'a man or a woman' is a singular subject and not a plural one. Here however, the singularity of 'a man or a woman', is attached to the plurality of the personal pronoun 'they' and the verb 'do' but also to the singularity of the verb 'comes'. The narrator here is speaking about one person and about more persons at the same time – there is *one partner* to whom (singular) the new life is already natural but *they* (plural) may not want possessions. Winterson appears to consider 'a man or woman' to be both singular and plural. The *or* in 'A man or a woman' divides gender categories in two distinct opposites, but then the two are merged and they become both singular and plural at the same time. There is no consistent treatment of gender here.

Another striking application of deconstruction feminism in Winterson's work is the representation of women's violence. Until about 1987, women's violence was rarely represented in art. The advent of the feminist movie in the mid-eighties marks a sudden preoccupation with this phenomenon. As Smelik indicates in her article "Het stille geweld" ["Silent Violence"] (Smelik 1989), many feminist movies show women's violence against men. "Women have now become terrorists, bank-robbers, guerrilla-warriors and murderers", she says (cf. Smelik 1989:235). Reading *Sexing the Cherry*, we can easily characterise the Dog-Woman and some of the Twelve Dancing Princesses as violent. The Dog-Woman, a terrifying giant who owns fifty fighting-dogs and who lives in a hut on the banks of the stinking Thames, hates to wash, she can put twelve oranges in her mouth at the same time and at one point bites off a penis like a juicy piece of cucumber. She strangles her opponents, mostly hypocrite puritans, but also other men who treat her disparagingly, without the slightest remorse:

'Mr. Tradescant,' I said, 'I am defending the King'

'A noble cause,' said he.

At this, my neighbour claimed he'd never kneel before a king until he knelt before Jesus. Any time now, he said, the Rule of Saints would begin

on earth and all the sinners would be burned up and confounded.
I had no choice but to strangle him, and though I used only one hand and
held him from the ground at arm's length, he was purple in no time (...)
(*STC* 27-28)

The novel is partly set in 1649, at the time of the English Civil War, and a group of Royalists, among whom the Dog-Woman, plans to avenge the King's murder. Reminded by one of her enemies, a puritan, of the biblical text 'an eye for an eye, a tooth for a tooth', the Dog-Woman collects one hundred and nineteen eyeballs (one of her victims had already lost one) and over two thousand teeth of Puritans she meets in the streets. But what should one do with all these eyeballs? She feeds them to her dogs. And the teeth make good drainage for her bed of watercress.

Halfway through the novel, the Twelve Dancing Princesses each tell their own story of how they got rid of their husbands. One of the Princesses collected religious items. She owned the body of a saint, wrapped in cloth. When her husband tried to end her hobby – "She had not minded her husband much more than any wife does until he had tried to stop her hobby" (*STC* 49) – by burning the body of the saint, she wrapped his body in cloth and threw him into the fire too. Another princess had a husband who was very beautiful, but he never touched her. He loved a boy instead of her. She pierced him with an arrow. Another poisoned her husband for no particular reason.

The violent behaviour of these characters urges the reader to rethink the categories of male and female "from a standpoint outside such received conceptual oppositions" (cf. Norris 1987:149). A deconstructivist reading of *Sexing the Cherry* implies "the dismantling of conceptual oppositions, the taking apart of hierarchical systems of thought which can then be reinscribed within a different order of textual signification (cf. Norris 1987:19). Geneviève Lloyd points out the oppositions traditionally identified with 'male' and 'female' identities. Aggression is placed at the male side of this binary division, as are odd numbers, aggressive behaviour and reason. Even numbers, nurturing skills and emotion are regarded as feminine (Lloyd 1995:104). Although the women in this novel all explode traditional ideas of female identity, some are more dominant than others, and they resort to violence for different reasons. Whereas the Dog-Woman is too big a presence, too self-assured to ever become a real victim of men's domination or to be overlooked in a world where male language and male interests rule, the Dancing Princesses are more docile, and have been locked away in marriage, hampered in their freedom.

The Dancing Princesses used to fly out of the window secretly, to a silver city where everybody spent their time dancing. Dancing and flying frequently serve as metaphors for freedom in Winterson's novels. They seek to be free of the men who confine them. The princesses had to be back before their "father came to wake us in the morning". But "eventually a clever prince caught us flying through the window" (*STC* 48). The men are in a position to contain the women's freedom; the women have to obey their rules. Men are seen as warders of the prison in which women are caught. The rules are designed by men and the women just have to obey. The feminine world is characterised by anarchistic freedom, humour, art, dance, and love. The masculine world is characterised by hierarchical structures, confinement, politics, seriousness, and battle. But the women do not hesitate to battle in order to escape from the world in which they are trapped. In this novel, Winterson's female characters never seem to doubt that the only way to avenge their imprisonment is to murder men. On the one hand, this exaggeration is bizarre and humorous. On the other hand, the cold rationality of their killings highlights the bitterness underlying these acts of violence.

We are entering the realm of deconstruction in Winterson's novels at the same moment when we sense the surreal. When we experience how reality and fiction both dissolve into a mystical realm, linguistic patterns, categories and concepts lose their firm basis. There is a pervading sense of the naïve and the mystical about her work, adding a fairy-tale quality to it. It is this fairy tale quality, this fictionality, that establishes a new order of textual signification that transcends oppositional thinking. The Dog-Woman is a case in point: she is such an astounding creation that she cannot be fitted into any category – she is an aporia herself. She is masculine in her violence and proportions, and lacks all sense of empathy. Sometimes, however, she thinks she weighs nothing, she is extremely helpful to others or says things that conform to the stereotyped role model: "I would have liked to pour out a child from my body" (*STC* 11). It is exactly this kind of oscillation that allows Winterson to create characters that escape from the confines of worlds organised by oppositional pairs. The Dog-Woman's identity is deliberately ambiguous and unstable. For this reason, *Sexing the Cherry* can be regarded as expressing the Derridean notion that "no final and transcendental signified can be fixed", and that "the meaning of the text is unstable, undecidable" (Rice and Waugh 1996:174), leaving the reader with a paradox. This may be true for *Sexing the Cherry*, but certainly not when we look

at Winterson's oeuvre as a whole. Below, I will show that eventually Winterson *does* fix the meaning of 'masculine' and 'feminine'.

Difference Feminism

Difference feminism acknowledges more differences between men and women than sameness feminism does. It attempts to reevaluate, rather than overcome, traditional feminine experience, and to redefine the meaning of rationality in a manner that takes women's traditional activities into account. Difference feminism recognises the devaluation of feminine nature by rational discourses and therefore aims at a re-appreciation of the feminine identity. Significantly, the terms used to express this valuation are precisely the terms associated with the excluded 'other': difference feminism celebrates the "feminised irrational", and sets it against the "gender-neutral pretensions of a rationalist culture" that has, from its very beginnings, opposed itself to nature, the body, and intuition. This perspective appreciates women in their own, different, identity, and wants to realise that they find respect as such, and not as imperfect copies of men (cf. DiStefano 1990).

Winterson adheres to difference feminism in at least part of her fiction. She portrays rational men (Elgin, Jove) as evil and artistic women (Sappho, Picasso) as good. We already reflected upon Winterson's depiction of men as the gaolers of women, as rationalist surgeons invading women's reality and bodies, and upon the fact that Winterson's 'straw man for manhood' Isaac Newton created a mechanical, deterministic world where human bodies cannot fly or perform other fantastic feats. Winterson's Picasso was sexually harassed by her brother and revolts against this by seeking refuge in the artistic. She reacts by painting the house of her parents in all kinds of colours. Her parents correctly interpret this as a testimony of the masculine violence that has been acted upon her.

Winterson equates the difference between the male and the female with the contrast between scientific narrow-mindedness and artistic open-mindedness. Antagonist male characters like Jove, Matthew, and Elgin are representatives of a rationalist culture that rejects subjectivity, intuition, and the fantastic. Their world is characterised by rationality and dominance. Women, on the contrary, are identified as emotionally and imaginatively rich.

Winterson's difference feminism can best be illustrated by way of the set of oppositions she elaborates in *Sexing the Cherry* and in *Art & Lies*. In both novels, women are able to dissolve gravity. The Dancing Princesses fly out of the

window every night, to visit a floating city that does not exist in the minds of rationalists. Picasso does not hit the ground when she jumps from a roof, which is literally described as a victory over Newton's deterministic worldview and its concomitant rigid natural laws. Women, in other words, are not 'locked up' in the web of natural laws as constructed by Enlightenment science. Because Winterson mixes fairy tale and myth into everyday reality, her work acquires a magic realist quality. As Theo D'haen argues in his "Postmodernisms: from Fantastic to Magic Realist", "magic realism is a form of resistance" (D'haen 1997:285, cf. page 78). Indeed, Winterson's *Dancing Princesses* and *Picasso*, magically escaping rationalism's laws of nature, should be seen as putting up resistance against the 'man of reason' or the reason of men.

As we can see elsewhere, Winterson says that men deem themselves weighty and women think they are light (cf. page 46 and page 155). The dissolution of the laws of gravity then corresponds to women's lightness. In Winterson's novels, men are heavy, and they never fly or dance; they are stuck in the Newtonian – scientific – paradigm. Women are equated with freedom and an anarchistic attitude towards science's fixed laws. There is one instance in Winterson's fiction to date where a man feels he is becoming too heavy. He uses a rational trick to escape gravity:

Then my heaviness was at its limit and I could not raise myself up from where I was sitting. But I did look around me and I was one in a long line of unfortunates sitting like crows on a fallen tree. All were wailing piteously and none could move on account of their sorrows. I was lucky that my hands were free, and reaching down into my fish basket I took out a red mullet and waved it over my head. Soon a flock of sea birds appeared screeching at the sight of the fish. (...) When they fastened their beaks on my bait I did not let go and the birds, maddened at any resistance to their feeding, flapped all the harder and succeeded in pulling me up with them. (*STC* 33)

It is clear that Winterson favours female philosophical lightness over masculine conceptual fixity. In *Great Moments in Aviation* too, flying and femininity are connected. Here we find Gabriel Angel (a young woman), who explains:

It was in the year 1703 in the country of Portugal. Father Bartolomeu came up with the idea of flying. He liked to imagine the angels with their great gold wings cut across the sun and their bodies bright as dragonflies. (*GMA* 32)

Then, the script indicates a flash back:

[Gabriel is a little girl, about eight. She's naked except for a pair of gold wings strapped to her. She seems to be flying across the front of Vesuvia's shack. Back and forth she flies.] (GMA 32)

It is striking that Cixous uses the idea of flying too. She stresses that women should try to find and develop a voice of their own with the aid of a strategy she calls *voler* which means both 'stealing' and 'flying'. Women must steal a voice because they are not the owners of any cultural heritage. They are able to fly because they are not bound by the limits of genre nor by fixed structures of meaning (Buikema and Smelik 1993:25).

Masculinity and gravity are linked in *Art & Lies* as well, when Newton's apple is brought up, referring to the legend about Newton's invention of gravity. The University of Cambridge was closed due to the plague. Newton had to flee to his family's country residence, where he happened to lie down under an apple tree. When an apple fell on his head, this triggered a line of thought that finally led to the principle of gravity. In *Art & Lies*, the apple functions as a symbol of gravity, and of the pathetic things men believe in:

He used to come to her, when she had first advertised her credentials, and he often brought an apple which he never ate. He said it had fallen on his head, and he gazed at it with all the wonder of a soothsayer into a globe. Poor man, very often she distracted him, but it was to the apple he returned.

He had said 'This fell on my head. Why?'

'Codling moth,' said the Doll. She was still fond of him. She was fond in her work, but in love? Never Never Never. Yet, she liked men, foolish, boyish, trumpeting men. (*AL* 130)

The Doll regards Newton's theory with contempt and sees his scientific findings as the fiddling of an imbecile. Doll Sneerpiece herself is an obscure old lady who hangs about in a night club called The Cock and Gun. The night club is an almost absurd world of theatrical illusion, of costumed tricks: a world where everything is possible and where appearance and reality fuse. The Doll's critique of reason has its roots in an operative reality. In Winterson's work, compared to feminine love, passion, intuition and emotion, men's rationality is but a pitiful thing.

So we see that the presence of deconstructionist practices in Winterson's novels does not necessarily exclude the presence of binary, oppositional

thinking. Winterson's ideas on gender prove to be quite changeable. The passage from *Sexing the Cherry* quoted below provides us with a highly complex situation with respect to gender relations.

After my experience in the pen of prostitutes I decided to continue as a woman for a time and took a job on a fish stall.

I noticed that women have a private language. A language not dependent on the constructions of men but structured by signs and expressions, and that uses ordinary words as code-words meaning something other. (...)

Thinking to teach me about men, worrying that I knew nothing, she wrote me a rule book of which I will list the first page.

1. Men are easy to please but are not pleased for long before some new novelty must delight them.
2. Men are easy to make passionate but are unable to sustain it.
3. Men are always seeking soft women but find their lives in ruins without strong women.
4. Men must be occupied at all times otherwise they make mischief.
5. Men deem themselves weighty and women light. Therefore it is simple to tie a stone round their necks and drown them should they become too troublesome.
6. Men are best left in groups by themselves where they will entirely wear themselves out in drunkenness and competition. While this is taking place a woman may carry on with her life unhindered.
7. Men are never to be trusted with what is closest to your heart, and if it is they who are closest to your heart, do not tell them.
8. If a man asks you for money, do not give it to him.
9. If you ask a man for money and he does not give it to you, sell his richest possession and leave at once.
10. Your greatest strength is that every man believes he knows the sum and possibility of every woman.

I was much upset when I read this first page, but observing my own heart and the behaviour of those around me I conceded it to be true. Then my heaviness was at its limit and I could not raise myself up from where I was sitting. (*STC* 31-33)

This passage describes Jordan's decision to put on a dress for a while, in order to try and find out how women act when they are amongst themselves. Dressed as a girl, he meets some women at the market place. A fanatic difference feminist instructs Jordan how to treat men, imposing a fixed set of rules.

This passage opens with the idea of cross-dressing. Changing appearances is in fact a deconstructionist act. Cross-dressing defies sexual classification: male characteristics are masked and female characteristics are put on. Essentialist gender divisions are replaced with a constructed identity: being male or female is not an unchangeable fact in nature but rather a matter of cultural constructs, open to manipulation. This act is immediately followed by the idea of linguistic constructivism. Jordan notices that women's language is different from men's language. He finds out that if masculine language simply uses a certain word to denote an idea, female language uses these words as code-words meaning something entirely different, thereby subverting masculine semantics.

So far, all this strongly resembles deconstruction feminism. However, the set of rules that follows expresses oppositional thinking. So far, the women's statements and actions create binary oppositions between masculinity and femininity, while Jordan deconstructs the oppositions. But in his narrative following the set of rules, we can see that he decides these rules to be true. What should the reader do with this? There is no authorial intrusion that guides the reader through the ambiguity presented, as is often the case in Winterson's novels.

We cannot assume without any problem that Winterson advocates the ideas of difference feminism in this passage. She has obviously added a twist: the man involved in this situation, Jordan, does not fit the category of 'all men' at all. Jordan is not the typical insensitive macho, nor someone who "cannot be trusted with what is closest to one's heart". He is one of the few male characters in her work capable of acknowledging genuine feelings. Winterson even takes this one step further, as it is a man – Jordan – who ultimately accepts the truth of these feminist ideas. By presenting Jordan doing so, Winterson also ridicules the difference-feminist ideology. Here, Winterson expresses difference feminism and deconstruction feminism at the same time.

Are these feminist axioms merely the whims of a marginal character or should we take them more seriously? How strongly does essentialist thinking figure in Winterson's worldview? Below, I will show that, however often Winterson deconstructs received notions of masculinity and femininity, in the end she always aims to affirm those characteristics that are traditionally conceived as feminine. Central in *Sexing the Cherry* for instance, is the idea that women should learn to believe in the strength of their own worldview and in the power of their imagination to help them shake off the traditional image of women as weak, small, and sweet. As the female characters are confronted with

an obvious and indisputable domination by men, they have no choice but to gain strength and weight, and to adopt a self-assured and radical attitude.

The set of rules listed in *Sexing the Cherry* can from the standpoint of poststructuralism be seen as an instance of over-simplified myth-making in the vein of American therapist John Gray's well-known *Men Are from Mars, Women Are from Venus*. At the same time, these rules do fit the main political message of the novel, which is to free the imagination from laws, to liberate women from male domination, and to liberate mankind from the mistakes men have made while ruling the world. These mistakes are spelled out at the end of the novel where the excesses of western capitalism and militarism are addressed.

One could argue that Winterson merely presents a juxtaposition of voices, pointing out contrasts between the various views of the separate narrators, including her own. One might even consider Winterson's staging of both deconstructionist views and binary oppositions as a way to arrive at a pragmatist collage, a polyphony of voices, refusing to settle into a single grand narrative. But Winterson does settle into a single grand narrative. In *Gut Symmetries*, the women are victorious in the end, and in *Great Moments in Aviation* Gabriel Angel is the only character who is continuously respectable. Indeed, in "The Erupting Lesbian Body", Cath Stowers concludes:

Written on the Body can thus provide insights into what a distinctly lesbian aesthetic may look like, suggesting potential figurations of an enduring lesbian battle with gender binaries. The main characters in all of Winterson's novels remodel themselves more as woman, following pleasures which are suggested to be more female, pleasures of palimpsestic representation instead of official exclusionary paradigms; of fluid multiplicity instead of phallic singularity. (Stowers 1998:99)

In Winterson's collection of essays, *Art Objects*, we find additional evidence of Winterson's personal binary conception of gender (as opposed to that of her fictional characters). In the essays, she uses male personal pronouns to describe weaklings or evildoers, and female personal pronouns when a respected artistic soul mate is referred to.

But our poor art-lover in his aesthetic laboratory has not succeeded in freeing himself from the protection of assumption. What he has found is that the painting objects to his lack of concentration; his failure to meet intensity with intensity. He still has not discovered anything about the

painting but the painting has discovered a lot about him. He is inadequate and the painting has told him so. (AO 10)

“He” is a man, a scientist, and unable to understand art. The image of the artist emerging from *Art Objects* is female:

How much can we imagine? The artist is an imaginer. The artist imagines the forbidden because to her it is not forbidden. If she is freer than other people it is the freedom of her single allegiance to her work. (AO 116)

It is clear that Winterson opts for oppositional, essentialist thinking here. “He” is a pathetic loser, “she” is strong and free. Moreover, the artist is female, and the scientist is male. The closer we look at Winterson’s work, the stronger Winterson’s difference feminism – as opposed to her deconstruction feminism – proves to be. I shall go into the theme of the ‘male gaze’, which reveals more of oppositional thinking in Winterson’s fiction.

The Male Gaze

The issue of the male gaze and its controlling effects has received a lot of attention from feminist cultural analysts during the eighties and nineties of the past century. Paulina Palmer gives a brief overview of a number of novels and short stories addressing this theme in *Contemporary Women’s Fiction* (Palmer 1989:34-37). The polarised positions of observer and observed are relevant to the relations between the sexes, as Coward points out:

In this society, looking has become a crucial aspect of sexual relations, not because of any natural impulse, but because it is one of the ways in which domination and subordination are expressed. The relations involved in looking enmesh with coercive beliefs about appropriate sexual behaviour for men and women. (Coward 1984:41)

Jeanette Winterson is touching upon this theme too. In *Art & Lies* the doctor Handel and Sappho, the Lesbian poet, experience sexual pleasure through looking. For Sappho, looking produces one of the most powerful sensations of erotic beauty and the miracle of love. Sappho sees Picasso “on a ledge in the night” (AL 132) as she is standing on the rooftop ready to jump, and that moment of visual contact expands into a marvellous connection: “What did I see when I looked at you?” “I saw your colours in prismatic white, a see-through angel in unfitting clothes” (AL 132). Here, the act of seeing instantaneously

constitutes erotic involvement, and admiration. To Handel, looking at women is a pleasurable experience of a different nature:

I like to look at women. That is one of the reasons why I became a doctor. As a priest my contact is necessarily limited. I like to look at women; they undress before me with a shyness I find touching. (*AL* 9)

The act of looking in a lesbian relationship expresses and produces a sense of equality and identification. By contrast, in the heterosexual act of looking, a woman is on display as a sexual spectacle. Suzanna Danuta Walters speaks of this in her book *Material Girls: Making Sense of Feminist Cultural Theory*. She remarks that much of the early feminist critique concentrated upon the phenomenon of women being represented as sexual objects, as 'on display' (Walters 1995:50). To describe a woman seeing another woman, functioning as passive object, is less common. Winterson describes Sappho's sensations when she looks at Picasso, her lover. Sappho aestheticises the body, and her perception of the other woman is erotically tinted. The female body is experienced as a work of art, as an ancient sculpture. The lesbian gaze is unlike the male gaze, since it does not imply relations of power. In this way, Winterson criticises masculine attempts at constructing an image of women through the process of reification.

In *Contemporary Women's Fiction. Narrative Practice and Feminist Theory*, Paulina Palmer elaborates upon the controlling effects of the male gaze (Palmer 1989:34-37). She shows how women can become oppressively conscious of the power that the gaze wields in dictating and controlling not only their appearance but also their identity and sense of self-value. As John Berger says in his *Ways of Seeing*,

(...) *men act and women appear*. Men look at women. Women watch themselves being looked at. This determines not only most relations between men and women but also the relation of women to themselves. The surveyor of woman in herself is male: the surveyed female. Thus she turns herself into an object of vision: a sight. (Berger 1972:46-47)

In *Gut Symmetries*, we can discern a similar process. Here, it is Stella who is looked at with disapproval. The fact that she is looked at this way causes her self-esteem to evaporate. Then, she looks in the mirror and finds that she not only feels ugly, but that she really has become ugly. Jove's disapproval of Stella's behaviour is felt in his way of looking at her, which is likened to the way he looks at an irritating piece of mathematics. The woman feels that his gaze expresses that her

appearance is inelegant, cumbersome, boring, and dirty. The act of looking itself is described as “indifferent”. Looking at a beautiful woman, as we can see in the text, is not boring and not filled with indifference. The fact that this woman is regarded as something ugly, makes her look into the mirror. At that moment, the woman looks at herself through the eyes of the masculine surveyor. The person she looks at is not herself but the surveyed female. Her self-image is dictated by the way Jove sees her.

He frowned at me as though I were an inelegant equation; necessary but cumbersome, a bore to manipulate. I was no longer his living beauty of physical laws. No doubt he was telling her about the poetry of numbers. I looked in the mirror. Was that my face? I was gargoyled with grief. A stretched taunted thing. A waterspout of misery. He had poured his indifference down on me and I had let it out as dirty water. He thought I was the dirty water not himself. (GS 34)

A particular kind of male gaze in Winterson's fiction is what I would call the ‘medical gaze’.

The eyes, strangely illuminated by the sickly storm, had the look of operating lights, and he remembered the hideous moment, after the anaesthetic, when the patient revives, and sees, unfocused, the huge swimming lights, too close, much too close, and the green mask of the surgeon staring down.

She had woken and felt for her breast. (AL 188)

In this passage, the very act of looking is described as an invasion into a private sphere, as if it becomes a medical intervention. The physical harm caused by the scalpel is compared to the psychological harm caused by the eyes peering at the reified woman.

In our cultural history, the eye, normally a recipient of photons, incapable of producing particles, is often presented as source of light or even as a powerful weapon (Donaldson-Evans 1980). In art, eyes are often pictured as the sources of light beams piercing objects made of hard material, as X-ray beams going through somebody to see what that person is hiding, or as the cause of certain events, as in the ‘evil eye’. Likewise, in the quotation above, the eye and the operating light are interchangeable. The fact that the eye acts; that it penetrates, is stressed by the image of the lamp. It is hard to understand that looking involves power when one pictures the eye as a mere receptor: to receive is

passive and safe. Sending a beam in the direction of someone or something, is active and possibly harmful. Winterson changes the image of the eye as a receptor into that of an active penetrator. Here, the narrator's – Handel's – belief that the masculine medical gaze can cause harm, is illustrated by replacing eyes with operating lights.

But Handel's own 'male gaze' is not representative of masculine dominance without remorse. His gaze reveals his conscience and his failure as a lover. His way of looking often involves frustration and guilt, causing a masculine superior attitude to melt away into a feeling of inferiority. This feeling is accompanied by acts of withdrawal. Handel refrains from attempts to enter into the female sphere, either visually, sexually or medically. By contrast, the masculine penetrations into the feminine that do occur in the novel, either visually or medically, become even more suspect. The men who do not withdraw are depicted as aggressors. In *Art & Lies*, Handel withdraws from his attempts to enter the zone of female beauty and sexuality because of severe doubt and insecurity:

And women? Look at her, slender as the reeds of Solomon, her hair in Absalom trails. What to do with beauty? I have never been quite sure...
(AL 100)

I looked at her, her hair in a perpetual spray around the sculpting of her shoulders, her body, a living fountain of red and gold.
I looked at her and turned away. Turned away from beauty. Turned away from love. Turned away and closed the door on the unused room. The next day she caught the train. (AL 112)

Handel merely looks at women, he does not enter into 'real' sexual relations. This does not mean that he regards looking strictly as a strictly neutral activity. He realises that looking can in itself be an act of power, access, and control. Because of his enormous empathy and religious conscience, Handel's medical gaze is filled with tormented feelings. He is constantly and intensely aware of the impact of the doctor's act of looking at a patient. He experiences his own gaze as a torment to the patient.

Handel is aware of the brutality of the male, medical eye penetrating into the female zone: he equates looking at a woman with penetrating a woman and, being a virgin and suffering from insecurity and fear of failure, he is always

concerned for the object of his gaze and constantly apologises for the impact this has upon his female patients.

How does the idea of the physician's penetrating and harmful gaze link up with Winterson's feminist critique of science? Does Winterson affirm or deconstruct gender difference when she speaks of medicine? In Winterson's novels so far, the medical gaze is manly because there are only two doctors, who are both male: Handel, the surgeon in *Art & Lies*, and Elgin, the oncologist in *Written on the Body*. Their gaze is (potentially) painful because it is male and therefore detached and objectifying. Winterson's feminine alternative to masculine forms of medicine involves a kinder and more sympathetic type of observation instead. A more detailed discussion of Winterson's feminist medicine, however, will have to wait until chapter 6.

At the beginning of this chapter, we wanted to examine where Winterson stands in matters of sex and gender. Winterson's final stance in gender issues comprises both an oppositional and a deconstructionist philosophy. Although she changes semantic structures to undermine the stability of gender categories, she is in fact battling out a war between the sexes. In this battle, Winterson ultimately sides with the feminine forces, with which we relapse into oppositional thinking. Winterson does not always concern herself with deconstructing oppositional thinking between man and woman, and between science and literature. Although she is engaged in solving the problem of dichotomy, and as much as she is writing in the nineties of the twentieth century and obviously practicing deconstructionist techniques in her novels, she often simply upholds the old binary structures. Even in *The Passion*, in which cross-dressing is such an important theme, the ending points at a feminine victory. Winterson says about it in an interview with Christelle Méplon: "Ik heb willen eindigen met het beeld van een man in zijn fallische toren en een vrije vrouw. Vrouwen kunnen makkelijker ontsnappen" ["I wanted to end with the image of a man in his phallic tower and a free woman. Women can escape more easily"] (Winterson in Méplon 2000).

My interpretation of Winterson's overall feminist standpoint is confirmed by Helena Grice and Tim Woods, who write that the triangular structure of *Gut Symmetries* is a means to disrupt binarism, but that "Binary structures are ultimately left untouched where it suits the book's sexual ideology" (Grice and Woods 1998:125). Grice and Woods suggest that "ultimately Winterson leaves certain gendered stereotypes in place, despite her self-consciousness about the gender politics of the binary love-plot" (Grice and Woods 1998:10). Indeed,

Winterson occasionally does deconstruct traditional dichotomies sometimes, but in the end she does not succeed in breaking through the power of binary thinking.

Feminine Language, Feminine World

Jeanette Winterson uses a feminine language to create a feminine world. But how can language be gendered? And what is the relationship between word and world, to a feminist writer? To answer these questions, I will discuss her work in the context of the writings of Gertrude Stein and Virginia Woolf, who share Winterson's feminist goals.

In *A Different Language*, Marianne DeKoven distinguishes masculine, patriarchal language, being objective, ordered, lucid, linear, mastered and coherent, from feminine language, which is anarchic, indeterminate, multiple, and open-ended. She specifically discusses Gertrude Stein's writing, which, according to DeKoven, is set against the patriarchal character of her culture and therefore against its patriarchal language.

Reading Stein's *Lectures in America* (Stein 1957) or *The Autobiography of Alice B. Toklas* (Stein 1960), for example, is an extraordinary experience. Her use of language ensures an extraordinary reading experience:

One whom some were certainly following was one who was completely charming. One whom some were certainly following was one who was charming. One whom some were following was one who was completely charming. (Stein 1934:293)

If it describes what it sees how does it do it. If it describes what it knows how does it do it and what is the difference between what it sees and what it knows. And then too there is what it feels and then also there is what it hopes and wishes and then too there is what it would see if it could see and then there is what it explains. (Stein 1957:14)

I want to elaborate on DeKoven's idea that Stein's interests are anti-patriarchal, and go on to show here that Winterson's aims are similar to Stein's. I will argue that their lesbianism is a force behind their mutual depreciation of masculine constructions of reality – and that this is why they construct an alternative reality by using a different language.

Both Winterson and Stein present themselves as lesbian writers. Winterson's plots often involve a triumph of lesbian love and a downgrading of

masculine roles in the plot, as we find in *Oranges Are Not the Only Fruit*, in *Written on the Body* and in *Gut Symmetries*. Gertrude Stein's *Miss Furr and Miss Skeene* cautiously raises a lesbian voice: the book, written in the nineteen twenties, already associates the phrase "gay" with a homosexual couple, indicating furthermore that such bonds are "regular" and in fact, something to be artistically "cultivated".

Helen Furr and Georgine Skeene lived together then. Georgine Skeene liked travelling. Helen Furr did not care about travelling, she liked to stay in one place and be gay there. They were together then and travelled to another place and stayed there and were gay there. (Stein in Reynolds 1993)

Stein's and Winterson's lesbian authorship goes hand in hand with their difference feminism. Moreover, their belief in feminine values inspires both authors to write in a way that is directly aimed against the conventions of language – conventions that had emerged from a past where the male voice was dominant. A major strategy in both writers' work consists of undermining representation by means of linguistic experiment.

Stein's prose does not aim to represent a situation, object or idea, but tries to capture the process of perceiving and understanding itself. Her writing displays the way in which the world and our cognition form an inseparable whole. Her rambling and repetitive style refuses coherence and order, and rejects a final resolve. Stein's texts owe their effect to repetition, rhythm, and an odd positioning of words. The tentative nature of the sequence of words conveys a preference for open-endedness.

Stein and Winterson both frustrate the need to divide sentences in main clauses and subordinate clauses. Stein, for instance, hardly ever uses commas. By doing so she disrupts traditional preconceptions with respect to structure and syntax. Winterson's style sometimes resembles Stein's – in this passage from *Gut Symmetries*, for instance:

The sex bed the love bed the afternoon and night bed where I held him
he held her bed the ripe rotting sly bed. (GS 30)

The received notions about the production of meaning are completely ignored. It is this refusal to acknowledge syntactical hierarchy, that can be interpreted as a feminist act – as a sign of radical difference feminism. Winterson's style resembles Stein's in the following passage from *Art & Lies*. Here we see how

Winterson expresses her message – the necessity of a different language – in a style of writing that resembles Stein's rambling and reiterative style:

When all speak the same speak the poet can no longer speak. The language is rich when it is fed from difference. Where there is no difference there is no richness. There is no distinguishing among the dead.

Eat the same apples, day comes, night falls. Turn on the television, day comes, night falls. Assert your individuality with one voice. Day comes night falls. (AL 64)

Generally speaking, Winterson's style is more conventional than Stein's: her sentences usually cohere and follow the rules of grammar. Winterson, however, does play with word order, with the sex of personal pronouns, and often uses nouns as verbs. Even more striking is her use of strings of parallel metaphors that constitute an extremely dense and sometimes even abstract poetic language:

Call the rain. Drops of mercy that revive the burnt earth. Forgiveness that refills the droughted stream. The rain, in opaque sheets, falls at right-angles to the sea. Let me lean on the wall of rain, my legs at sea. (AL 93)

Picasso had sometimes gone to church to sit in an empty pew to listen to the God-fled monotone of the anecdotal vicar. The hail-fellow-well-met-shallow-hearted-dull-brained-cost-effective-worldly-wise-over-weight-ill-read-ill-bred-golfing vicar. (AL 84)

Winterson not only fashions cascades of meanings, one tumbling over the other, gathering meaning as they fall. She also creates new words, like 'droughted', derived from the noun 'drought'. The effects Winterson uses create original poetic cataracts that diverge widely from the calm flow of traditional literary prose.

Both Stein's and Winterson's work raise questions about the nature of representation and the conventions of realism. Both Winterson's *Oranges Are Not the Only Fruit* and Stein's *The Autobiography of Alice B. Toklas* have anti-referential goals. It is because of this goal, that Stein's book was vehemently criticised when it first appeared. Stein wrote from the perspective of Alice B. Toklas, a friend of hers, who narrates from her 'own' perspective ('I') and that of the things and persons around her, among whom a character called Gertrude Stein. Traditional autobiography pictures a person as lifelike as possible. The genre's conventions aim at chronology, fact, and explanation: "autobiography is a rigid mould into

which facts must be poured” (AO 47). Where Stein violates the rules of the *pacte autobiographique* early in the twentieth century, later, postmodern writers would break even more radically with these genre conventions (cf. Den Toonder 1998).

As Jeanette Winterson points out in her essay “A Testimony against Gertrude Stein”, *The Autobiography of Alice B. Toklas* was most severely criticised because of its revolutionary way of presenting reality. Stein’s autobiography refuses to recognise the authority of what realists would call ‘actual life’. The self is fictionalised and a new form of autobiography disrupts the genre’s foundations in the principle of mimesis. Twentieth-century literary writers developed forms that express the idea that the self should be understood as a fictional construct rather than as a product of facts.

In her essay, Winterson takes side with Stein’s literary strategy. Winterson compares the way her own texts play with autobiography to Stein’s representations of the self by saying that both really amount to fictions masquerading as memoirs (cf. AO 53). In this respect, *Oranges Are Not the Only Fruit* resembles *The Autobiography of Alice B. Toklas*. The fact that in Winterson’s book, two alter-egos of the same character appear, Jeanette and Winnet, simultaneously undermines and confirms the factuality of the ‘portrait of the artist as a young girl’: do these two versions of ‘the self’ adequately represent reality or do they move away from it? Winterson passionately advocates art’s alterations, creations, and sublimations of reality. In *Art Objects*, we clearly see that she is interested in the poeticising of the self:

(...) a writer re-ordering his own identity for the purposes of a poem.
(AO 57)

and in the heightening rather than the copying of reality:

(...) creating a heightened reality. (AO 56)

In *Art Objects*, Winterson explains what she tried to do in *Oranges Are Not the Only Fruit*, when she addresses the bankruptcy of realism and the traditional notion of autobiography. She rejects the clear correspondence between text and life, which had been the traditional axiom of (auto)biography:

We are supposed to know where we are with biography and autobiography, they are the literary equivalents of the portrait and the self-portrait (...). One is the representation of someone else’s life, and the

other is the representation of your own. We shouldn't have to worry about form and experiment (...) (AO 49)

Stein and Winterson are not only alike in their undermining of mimesis, but they also share an interest in what is called the 'Linguistic Relativity Thesis'. The Linguistic Relativity Thesis was advanced in the nineteen thirties by the American linguists Edward Sapir and his pupil Benjamin Whorf. It was partially founded on Whorf's study of the Hopi Indians of Arizona. The Hopi language does not distinguish between past, present and future tenses; where in English it seems natural to make a distinction between 'I see the bird', 'I saw the bird' and 'I will see the bird', this is not possible in Hopi. Whorf concluded that the Hopi did not just have another language, but that their language caused them to live in another reality – their linguistic patterns made them understand the world around them in a different way. Language, according to Sapir and Whorf, helps shape one's worldview. The radical version of this thesis maintains that the way we understand the world is completely conditioned by the structure of our native language. The world presents itself to us in shapes determined by the patterns in our language. This would mean that linguistic codes organise the mind.

As Norman Weinstein shows in *Gertrude Stein and the Literature of the Modern Consciousness* (Weinstein 1970), Stein was well informed about the Linguistic Relativity Thesis. Stein's conviction that feminine linguistic patterns are able to constitute a feminine (experience of the) world, forms a strong motive for her literary praxis. Her alternative linguistic praxis goes hand in hand with her difference feminism: her desire to transform language is an instrument to change the world. So her feminism hinges on the notion of linguistic relativity.

The Linguistic Relativity Thesis figures in Winterson's work as well. In her epigraph to *Sexing the Cherry* she literally refers to Whorf's study of the Hopi tribe:

The Hopi, an Indian tribe, have a language as sophisticated as ours, but no tenses for past, present and future. The division does not exist. What does this say about time? (STC 8)

This epigraph summarises one of the main themes in her novel. Through this reference, Whorf's scientific research becomes a constitutive part of Winterson's book. It returns later, in *The PowerBook*:

'The past is only a way of talking.' (TPB 54)

Stein and Winterson both try to create alternative methods of representation by changing traditional syntactical structures and by neglecting the conventions of grammatical rules. The motives behind their desire to change the dominant cultural order through literary form, lie – at least partly – in their feminism and lesbianism, and are based on the notion that linguistic representations of the world constitute sets of cultural patterns. They both not merely seek to change our language but, rather, our perception of the world. Their alternative language might open up the possibility of entering another, alternative reality.

In *Art Objects*, Winterson expresses a desire to renew ‘worn out’ words and dead sentences to make language exciting again. She says her language does not consist of words for things, but of words that are living things:

Language is movement, and I do not only mean inevitable development or deterioration, I mean that words are fleet-footed things and when right run, escape us at the place where we think we have wrestled them flat. (AO 166)

My work is rooted in silence. It grows out of deep beds of contemplation, where words, which are living things, can form and re-form into new wholes. (AO 169)

As we have seen in chapter 2, in my passage about ‘the language of rapture’, Winterson wants to bring sensation and eroticism back into language. I will elaborate upon this below, when I will discuss Winterson’s amorous relationship to the works of Virginia Woolf and their shared interest in science and language. For now, it will suffice to say that Winterson’s highly sensuous language conjures up a more intense reality. This intensity suggests a depth beyond the everyday world of common sense. Both Stein’s and Winterson’s use of language, therefore, go beyond the perceptual boundaries inherent in the conventional, rational use of language.

As described above, the Linguistic Relativity Thesis suggests that a new language entails a new reality. Winterson’s and Stein’s linguistic experiments aim to do exactly that: constitute alternative realities. Look at time, for instance. Benjamin Whorf concluded from his study of the Hopi Indians that our language compels us to consider time in terms of three rigidly defined tenses. “Yet our philosophy and science,” Weinstein says, “our Einsteins, our Bergsons [and our Wintersons, A.E.], tell us that objective reality can never be considered in such divisions. The past encroaches upon the present as the present flows into the

future" (Weinstein 1970:6). To become conscious of true time therefore demands another language than that of Aristotelean logic. What Winterson and Stein are looking for, then, is the (linguistic) reinforcement of a paradigm that opposes rational, masculine forms of reasoning.

Sapir and Whorf, Einstein, and Heisenberg belong to one and the same paradigm. Winterson and Stein construct realities that match and run parallel to the reality offered by the scientists of the twentieth century. Both these two feminist authors and these scientists present a reality that is neither linear, nor lucid, neither coherent, nor objective. Alternative languages as construed by art are therefore interconnected with discoveries in the scientific field. For instance, as we have seen in chapter 4, a new notion of time has been expressed in both scientific and literary publications that evidently belong to the same field or paradigm. Of course, this field or paradigm, spanning most of the twentieth century, has its own inner evolution. The time that has lapsed between the ripening of Einstein's ideas and their surfacing in Winterson's work, for instance, may be explained from Erwin Schrödinger's insight that:

(...) it takes at least *fifty years* before a major scientific discovery penetrates the public consciousness – half a century before people realize what truly surprising beliefs are held by leading scientists. (Schrödinger in Ferguson 1980:151)

And even though Winterson is decades removed from Stein, I want to argue that they still belong to one and the same movement as well. The aspects of Stein's and Winterson's work I have discussed – the anti-sensible, the anti-coherent, the anti-referential and the anti-patriarchal – constitute different sides of that paradigm. For them, there is a fight to be fought against traditional forms of representation and traditional cultural assumptions, in which literary form, gender politics and epistemology are different weapons serving one goal. These two writers' anti-patriarchal attitudes express their political battles against culture as a masculine construction. Winterson's abandonment of the conventions of realism uproots the established male culture. As we have seen before, realistic representation is the core philosophical underpinning of science. In attacking realist modes, Winterson therefore also – implicitly – undermines science.

Another woman writer who foregrounds the limits of representation and, with that, an anti-realist epistemology, is Virginia Woolf. In what follows, I will concentrate upon some similarities between Woolf and Winterson, and especially upon their feminist critique of science. Winterson and Woolf both

want to make us realise that to 'understand' something means to impose a subjective order upon the chaotic world. The project of modernity trusted human thinking to be able to come to an accurate and coherent knowledge of the world. This was a masculine form of knowing that was to be shared by all rational humans. Woolf, however, indicates that human thinking has to take account of considerable distortions where 'knowing' is concerned:

(...) why are we yet surprised in the window corner by a sudden vision that the young man in the chair is of all things in the world the most real, the most solid, the best known to us – why indeed? For the moment after we know nothing about him.

Such is the manner of our seeing. Such the conditions of our love.

(Woolf 1992:96)

And Winterson says:

Matter, that thing the most solid and the well-known, which you are holding in your hands and which makes up your body, is now known to be mostly empty space. Empty space and points of light. What does this say about the reality of the world? (*STC* 8)

Woolf influenced Winterson's writing not only in its subject matter, but also linguistically. It is well known that Winterson is a great admirer of Woolf's work. Winterson often mentions Woolf's writings in essays and interviews as a source of inspiration (40 92); (40 65); (Winterson 2002c). She owns a collection of signed first editions of Modernist literature among which some of Woolf's work (40 120), and Winterson and her partner Margaret Reynolds are the series editors of the 2000 edition of Woolf's novels, published by Vintage.

Both authors question the traditional way in which we know the world and represent it. Woolf is aware that "one's imagination jumps to all manner of hypotheses and conclusions" (Flint 1992:xvi), and tries to capture this internal process in her writings. By paying minute attention to the intermingling of the outer world (of objects) with the inner world (of sense impressions, memory and thought), Woolf "oscillated between abstraction and realism" (Scott 1995:xvii). Woolf struggles with and finds beauty in what Bonnie Kime Scott calls "the instability of words". As we have seen in the previous chapters, the unstable – a concept that emerged in both the science and the literature of the twentieth century – plays an important role in Winterson's world as well. In *The Feminist Aesthetics of Virginia Woolf*, Jane Goldman writes that Woolf aimed at "showing

both the fluid and the fragmentary nature of experience, both the flow of time and one instant" (Goldman 1998:3). The fluid plays an important part in Winterson's work, too: *The Passion* is largely set in Venice, where water represents the fleeting, the absence of rigid order, and Jordan, in *Sexing the Cherry*, was "named (...) after a river, and in the flood-tide he slipped away" (STC 11). By juxtaposing the fragmentary and the fluid, Woolf is able to represent the inextricable confusion of the human epistemic system: the dynamics between self and world, illusion and truth. To Woolf, our inner impressions and the objects in the world cannot be separated from each other. She juxtaposes different subjective impressions of various people, in relation to their versions of an objective reality. In that way, her novels become a "fragmented fabric" (Flint 1992:xiv).

In her diary, Virginia Woolf asked herself if life is "very solid, or very shiftin? [sic]" (cf. Beer 2000:11). This uncertainty returns in Woolf's novels in several ways. She refrains from omniscient narration (cf. Flint 1992:xvi) and her work shows an absence of sequential narrative structures and plot (cf. Flint 1992:xv). Woolf does not attempt to organise chaotic reality into neat chronology. The reader is absorbed by the narrators' partial perspectives, and finds him/herself inside a continuous stream of loosely interconnected experiences, dreams and fantasies.

At the opening of *Jacob's Room* one is confronted with constant interruptions in the activities and thoughts of the person depicted. At first, Betty Flanders is writing. Then she focuses on her pen, when suddenly she is overwhelmed with emotion. When she looks up, the world suddenly presents itself in accordance with her emotion. Then she re-reads her writing, after which she is interrupted by one of her children. Immediately after that her thoughts briefly wander off to her letter, and then she tells her oldest son, Archer, to go and find Jacob, and scribbles on. On this first page, many unclear statements are made: there is something about an accident, about leaving, and about a landlady – and the reader is left in the dark about their meaning. What we see is a continuous stream of feelings and mental images, and of objects one does not yet know anything about: the reader is left without an explicit connection between all of this. The mind works in 'waves' and fragments, and there is no way of telling how they cohere.

Winterson, too, creates such fragmented narrative structures (cf. page 96). The first two pages of *Art & Lies*, for instance, show the same absence of explanatory logic as we encounter in *Jacob's Room*. First, we are offered a

description of a train passing through a fantastic, heavenly light, followed by the story of someone who finds a book never seen before by any one else. Next, we are presented with a highly poetic description of the pages of that book, a minute description of the way the light falls on that book, the inner musings of an unknown narrator about the heart and about the difference between physics and miracle, and finally, a story about the library of Alexandria, followed by a scrap of text in Neo-Latin. This succession of unconnected passages seems to have no structure at all. For one, the fragments are set in different historical periods. The first passage for instance, describes an event in the twentieth (possibly nineteenth) century, whereas at other points we move to Antiquity. There are also differences with respect to precision and perspective: some pieces are utterly personal, minute descriptions of physical events, and some are fairly impersonal descriptions of historical situations. Winterson intermingles different voices and perspectives, stressing discontinuous change: she repeats sentences, cuts off stories abruptly, changes the names of the characters mid-novel, or forges unexpected relationships between her characters. Through these narrative gaps and leaps in perspective, both Winterson and Woolf stress discontinuity in the interplay between spacetime and the self. This foregrounding of discontinuity matches both Modernist and postmodern philosophical views.

There are more parallels between Woolf and Winterson. Both writers were conscious of the fact that since time immemorial, only stories about the world that were written by men, received attention. The image of woman was constructed by men, political issues were regarded solely from the perspective of men, those who had the power to preach and teach were men, and the history of poetry was predominantly a masculine affair. Both Woolf and Winterson consciously question male historiography. Woolf puts the question without much circumlocution in her text: in *Jacob's Room* one of Jacob's essays appears to be entitled "Does History consist of the Biographies of Great Men?" (Woolf 1992:48). Woolf was very aware of the prerogatives that only men enjoyed. In *Three Guineas*, Woolf pleads for women's education and independence: "Why are not females permitted to study physics, divinity, astronomy, etc., etc., with their attendants, chemistry, botany, logic, mathematics, &c.?" (Woolf 1938:137-138) and for their recognition – an equal history: "There were no professional women, except governesses, who had lives written of them" (Woolf 1938:137).

As we have seen in chapter 4, Jeanette Winterson takes a feminist stance as well, as she rewrites male historiography. She does that, for instance, by staging Einstein as a numerologist. She does the same thing when she ridicules

Napoleon for his presumed passion for chicken, or by mocking the importance of Napoleon's life for the development of western culture:

It was Napoleon who had such a passion for chicken that he kept his chefs working around the clock. What a kitchen that was, with birds in every state of undress; some still cold and slung over hooks, some turning slowly on the spit, but most in wasted piles because the Emperor was busy. (TP 3)

Strange to think that if Bonaparte hadn't divorced Joséphine, the geranium might never have come to France. She would have been too busy with him to develop her undoubted talent for botany. They say she has already brought us over a hundred kinds of plants and that if you ask her she will send you seeds for nothing. (TP 155)

The undermining of traditionally male historiography in *The Passion* is achieved by blowing up the heroic image of Napoleon, and by delegating the climactic moments to the fringes of history while positioning marginal events in the centre. Also, the dates in the text are historically 'incorrect'. Henri says it is in 1799 that the Napoleonic army landed in Ireland, whereas historians say this happened in 1797. Is it Winterson who is mistaken or does Henri have the date wrong? This may be a deliberate act of Winterson's, meant to suggest that personal accounts of what happened are distorted by the interference of the imagination, or simply by failing memory. Tampering with historical material is common practice in postmodern writing, which justifies the conclusion that this is yet another of Jeanette Winterson's attempts at undermining the authority of teleological history. We also find this kind of rebellion in *Sexing the Cherry*. In this account of the English Civil War, history and fairy tale are juxtaposed by a bizarre narrator who is unreliable in every sense of the word.

A further parallel between Woolf and Winterson lies in the unusual perceptions of physical phenomena evoked in their fictions and essays, such as the behaviour of light, the way music works upon our consciousness, the stimulus of sight, the play of colour, and the obscure terrors evoked by certain places. Take this passage from the opening of *To the Lighthouse*:

The wheelbarrow, the lawnmower, the sound of poplar trees, leaves whitening before rain, rooks cawing, brooms knocking, dresses rustling – all these were so coloured and distinguished in his mind (...) (Woolf 1994:1)

In her essay "The Narrow Bridge of Art", Woolf put it this way:

(...) every moment is the centre and meeting-place of an extraordinary number of perceptions which have not yet been expressed. Life is always and inevitably much richer than we who try to express it. (...) the effect on us of the shape of trees or the play of colour, the emotions bred in us by crowds (...), the delight of movement, the intoxication of wine. (Woolf 1966:229)

Winterson's words express a similar sentiment:

A different language is a different reality; what is the language, the world, of stones? Of atoms? Of microbes? Of colour? Of air? The material world is closed to those who think of it only as a commodity market. (AO 146)

Both authors feel that the detailed description of the subjective perception of the material world is very important, because by describing new phenomena a different reality is constructed. For Winterson this applies especially to the microscopic material world not directly visible to the human eye, the world of atoms, light particles, refractions of light, and gravitational fields. From the perspective of the Linguistic Relativity Thesis, such detailed descriptions of highly personal and sometimes bizarre phenomena 'create' rather than 'represent'. This would mean that Woolf and Winterson bring into being a different reality, originating in the mind. Indeed, in Winterson's work, the belief in a strict dualism – the inanimate world (*res extensa*) as opposed to animate human understanding (*res cogitans*) – is suspended. The world is a result of the potency of the mind. That is why at the end of *The Passion* Henri is able to grow a garden full of red roses, on a piece of rock in the sea where it is always cold and windy: because "human beings are capable of powered flight" (AO 116). Cognition constitutes the world.

In Woolf's characters' impressions of the physical world, they tend to lose contact with the surface of things, to inhabit a hidden territory just beyond sensual apprehension. Yet, Woolf never focuses on anything fundamental or 'hard' in that hidden realm. Both Woolf and Winterson intensify the experience of the material world, trying to show us another, hidden ontology. The passages below illustrate this. These fragments are very intimate, unusually sensitive descriptions of light, which bring to the reader a heightened perception of the world, perhaps another world.

An inclined plane of light comes accurately through each window, purple and yellow even in its most diffused dust, while, where it breaks upon stone, that stone is softly chalked red, yellow, and purple. Neither snow nor greenery, winter nor summer, has power over the old stained glass. (Woolf 1992:38)

The extreme definiteness with which they stand, now a brilliant white, again yellow, and in some lights red, imposes ideas of durability, of the emergence through the earth of some spiritual energy elsewhere dissipated in elegant trifles. (Woolf 1992:205)

The light fell out of the seamed sky in halos and cloaks. Squares and circles of light that dropped through the cut clouds and made single sense of all the broken pieces of beach, cliff, man and boat. (*AL* 206)

The book had no cover. While sleeker volumes covered inside their jackets, this one lifted its ragged spine to the sun, a winter sun of thin beams and few hours. A sun that sank red disc of hosannas.

I untied the waxy string and the book fell over my hands in folds of light. My hands shook under the weight of the light. Those heavy yellow squares saturated my palms and spilled down on my trouser legs. My clothes were soaked in light. (*AL* 4)

These four quotations from *Art & Lies* and *Jacob's Room* share a delicate sensibility of sensation, a symbiosis of tangible objects and a spiritual presence, between the enduring and the fleeting, between what remains and what escapes. The synaesthesias suggest a symbolic transference of worlds. Both Woolf and Winterson conceive another reality, where experience is heightened to an unusual degree. By doing so, they enfeeble the epistemological status of classical realism.

Is Woolf's reality linked to the developments of science in her time? And if so, does her attitude towards science resemble Winterson's? As Gillian Beer puts forward in *Wave, Atom, Dinosaur. Woolf's Science* (Beer 2000), Woolf read at least some writings of the English astronomer Eddington and the English physicist and mathematician James Jeans, who wrote that "we live in a universe of waves, and nothing but waves" (Beer 2000:9). The work of these scientists, Beer argues, provided "yet another scale from macro to micro, from infinitely distant to solid and immediate, out of which her narratives are composed. (Beer 2000:9). The physics of her time was empirical and mathematical – and it was this aspect of science that Woolf disliked – but the sciences were also emphasising

what could not be grasped immediately, what could not be predicted – the miraculous. Scientific ideas and debates provided her with metaphors, questions and creative energy (cf. Beer 2000:17). But, as Beer aptly fomulates,

Not being herself a scientist Woolf did not need to share the teleology of science and its search always for new explanation (...). She could skein ideas across time without embarrassment and draw on Ruskin and Einstein in a single motion. In that sense the empirical scientific method, with its unifactorial variations, its controlled experiments, might seem the 'least like' to her ideas. (Beer 2000:12)

What Stein, Woolf and Winterson have in common is their aim to evade – if not emasculate – realism. They need to do this to establish a new reality, a hidden, secret, reality of their own. These women writers have to escape from the masculine mapping of a cultural order built on principles of exclusion that have reigned for ages. Their writing discloses a specifically feminine territory, inexplicable by reason, open to people who accept feminine ways of knowing, i.e. anarchic, indeterministic, and subjective. The literary strategies of Stein, Woolf, and Winterson aim to establish a feminist world. And that world has, as Geneviève Lloyd argues in *The Man of Reason*, been excluded from the realm of reason – and therefore from being taken seriously. It seems that these women writers have an other “scope of interest”, an interest in other “influences that play so large a part in life, yet have so far escaped the [male, A.E.] novelist” (cf. Woolf 1966:229). These influences are disclosed by a fragmentational perspective on the world, and an indeterministic philosophy of representation.

A Feminist Critique of Science

Science it would seem is not sexless; she is a man, a father and infected too. (Woolf 1938:x)

The feminist viewpoint Winterson adopts in her cultural criticism is closely linked to the approval or disapproval of different kinds of science. Winterson only despises men when they meet the masculine stereotype. Likewise, Winterson rejects science only when it affirms and institutionalises established notions of masculinity.

As we saw in chapter 2, Winterson fiercely rejects the scientific worldview of the Enlightenment because of its fixity, its rigidity, and its dominance over discourses that lean towards the subjective. In chapters 3 and 4, I concluded that

her philosophical approval and imaginative use of modern physics can be explained from the fact that quantum mechanics and relativity theory uphold the principles of unpredictability and uncertainty, which opens up new vistas of literary creation, celebrating the marvellous and the mysterious.

The new science of the twentieth century, contrary to modern science, accepts uncertainty, the relative, the local, the partial, the subjective, and the chaotic. It was the Copenhagen Interpretation, initiated by Niels Bohr and Werner Heisenberg, that placed the concept of indeterminacy at the very heart of physics. Until then, physics had always upheld our comfortable, causal world. Taken to extremes, this interpretation would mean that ultimately there is no objective reality. This is the philosophical essence of the Copenhagen Interpretation of quantum theory. But other interpretations emerged as well, some of which turned against the Copenhagen Interpretation. In a letter to Max Born, Albert Einstein voices his difficulty to accept this randomness: "Gott würfelt nicht" [God does not play dice]. Einstein kept on believing in logic, reason, and order.

Since then the literary world has welcomed the scientific upgrading of chance and unpredictability. Science now affirmed what writers had always suggested. In his preface to C.P. Snow's *Two Cultures*, Collini writes:

The so-called 'new physics' of the last twenty years has modified this model in two related ways. First its actual findings about the nature of matter and the origins of the universe appear to install unpredictability, open-endedness, (...) into the very heart of our knowledge of the physical world. Developments in quantum physics and 'chaos theory' have been taken to mark 'the death of materialism', that is, of the mechanistic model of the properties and behaviour of matter which had been dominant since Newton (...) the very nature of the revolutionary work in theoretical physics, astronomy, and cosmology has helped to challenge the model of scientific thinking which represented it as proceeding by a combination of rigorous deduction and controlled inferences from empirical observation. The role of imagination, of metaphor and analogy, of category-transforming speculation, and off-beat intuition has come to the fore much more. (Collini in Snow 1998:xlvi-xlviii)

Collini argues that, with the arrival of quantum mechanics, not only the nature of science has changed; quantum theory has also installed literary modes into our epistemic hierarchy. A quantum worldview thus changed the 'two cultures' debate and the power relations between the disciplines in the academic world.

But the quantum revaluation of literature has feminist implications, too. John Limon's assertion that literary authors of either sex are taken as the women of the intellectual world, whereas science seems the most masculine of disciplines (Limon 1990:26), makes it clear that science, when it does incorporate literary ways of thinking (metaphor, analogy, the role of consciousness), in fact takes off its trousers to change them for a skirt. The new sciences, then, have led to the incorporation of modes of thought usually associated with the feminine.

Some people even go so far as to argue that the phenomena dealt with in geometry are masculine and that the natural structures discovered by the new sciences are feminine. On a New Age website, I found the following argumentation:

Let us look at another analogy for the relationship between quantum fluidity (the feminine) and the geometric templates (the masculine). Quantum fluidity would be like the amniotic fluid inside a mother's womb. Inside the waters of the amniotic fluid we find the beginnings of another structure, a growing fetus that displays all the perfect principles of sacred geometry and the holographic matrix of creation itself. This is a perfect analogy to express the balance of spirit (fluid) and matter (form). (<http://www.floweroflife.org/holomatrix02.htm>)

In *The Aquarian Conspiracy* we read:

(...) the new science goes beyond cool, clinical observations to a realm of shimmering paradox, where our very reason seems endangered. (Ferguson 1980:148)

New Age thinkers often stress that the new sciences undermine reason's privileged position. The fact that quantum mechanics includes 'soft' notions such as uncertainty and indeterminacy, and the idea that relativity theory 'made all things relative' are gladly taken up to conclude that the new sciences radically corrupt the 'hard' foundations of science. Many scientists however, distance themselves from such assumptions. They argue that the new sciences are just as rational as any other branch of science, and, sticking to mathematical explanation, deliberately make no 'grand' statements about reality. Other groups of physicists, taking their lead from The Copenhagen Interpretation and the Possible Worlds Interpretation, do interpret the conclusions of quantum mechanics as the source of a profound crisis in epistemology. Scientists do not agree as to what is going on in the quantum world.

In the meantime, the more radical interpretations of quantum theory open up interesting fields for writers who are looking for synergies between science and literature. The fascinating results of quantum science can even reveal a literary triumph over science, because, as David Porush maintains, literature has always upheld the notions of instability and locality, notions that classical physics denied. Literature can thus "lay claim to superior epistemological potency" (cf. page 28). John Limon explains how writers use science for their own goals. He remarks in *The Place of Fiction in the Time of Science*, that

A writer with a personal, aesthetic, political, or religious problem is sure to find at least *one version of science* that responds to it. (Limon 1990:25)
[Italics A.E.]

Winterson seeks to upgrade the status of the 'unstable' and the 'feminine' and, deploying the strategy Limon describes above, uses the new science to substantiate her own goals, appropriating the knowledge produced in physics to gain more respect for her own (literary) project. She needs science to sustain her ideas because she realises that science is equivalent to power, truth and status. The enormous aura of credibility that the sciences have obtained with the development of modernity is still a force to reckon with – and now that aura even serves the goals of their antagonists – literary writers.

As we have seen, Winterson's novels criticise positivist science and contribute to the postmodern paradigm. As such they deny the exclusive power reserved for the idealised image of knowledge formulated during the Enlightenment. This ideal, as we have seen in chapter 2, encompasses the notions of empiric measurement, mimesis, and fixity, and dismisses those forms of knowing that do not rest on these notions. Postmodernists, on the other hand, celebrate perspectivism, which allows for many links between the world and our consciousnesses, languages, and theories. Postmodernists have no room for hierarchy as they can no longer establish any valid truth function. Jeanette Winterson uses the tendency of theoretical physics to study instability as a central metaphor to describe her postmodern sense of dynamic flux in the universe. Winterson's work re-enacts the battle between on the one hand philosophical modernity (positivism, factuality, stability, and objectivism); and on the other hand postmodernity, (perspectivism, fictionality, instability, and subjectivism).

The modern ideal of rationalism, as formulated in the Cartesian philosophy, presupposes male characteristics. Cartesianism is based on analysis,

fixity, the absolute, the universal, the objective, the orderly, the mastered and the coherent; characteristics which have traditionally been associated with 'masculinity' in many critical and philosophical works. It was Descartes who laid a solid basis for the methods of science. In the words of Stephen Toulmin:

(...) scientific enquiries became 'rational'- thanks to Galileo in astronomy and mechanics, and to Descartes in logic and epistemology. (Toulmin 1990:9)

Geneviève Lloyd shows that although Descartes formulated reason as a faculty shared by both sexes,

(...) there are aspects of Descartes' thought which – however unintentionally – provided a basis for a sexual division of mental labour whose influence is still very much with us. (Lloyd 1995:49)

Lloyd argues that some passages in Descartes' philosophy state that the inferior senses, when they have been set aside in the search for truth because they can only deceive, are nevertheless useful faculties for our personal well-being. Lloyd continues:

None the less, through his philosophy, Reason took on special associations with the realm of pure thought, which provides the foundations of science (...) And the sharpness of his separation of the ultimate requirements of truth-seeking from the practical affairs of everyday life reinforced already existing distinctions between male and female roles, opening the way to the idea of distinctive male and female consciousness. (Lloyd 1995:49-50)

In western thinking, the role of fixity is associated with masculinity. The vague, the changing, the formless, are associated with the feminine. As Lloyd indicates,

In the Pythagorean table of opposites, formulated in the sixth century BC, femaleness was explicitly linked with the unbounded – the vague, the indeterminate – as against the bounded – the precise and clearly determined. (Lloyd 1995:3)

In those days, the world was seen as an amalgam of ideas connected to determinate form, (we might think of the limited, the regular, the fixed and the ordered), which was considered good, while other ideas, linked to formlessness

(among which the unlimited, the irregular, the unstable and the disorderly), were seen as bad. Lloyd continues that in later Greek thought,

(...) maleness was aligned with active, determinate form, femaleness with passive, indeterminate matter. (Lloyd 1995:3)

This association originated from ideas about human reproduction: the woman provided formless matter, the man gave shape to it. Women would be associated with the indeterminate; men with fixation. Modernity, with its ideals of certainty and fixity, must be associated with male characteristics; the new sciences, then, are linked to indeterminacy, uncertainty, and instability, and therefore to femininity. Likewise, postmodernism, celebrating multiple perspectives instead of a single truth, shares this indeterminacy with the new sciences, and opens up to feminine discourse, thereby implicitly countering male certainty and fixity as ideally formulated in the project of modernity.

These opposing worldviews still shape western culture today, and modernity, masculinity, and the aspiration towards certainty have remained dominating features. The strong voice of modernity was not reduced to silence with the advent of postmodern voices. After the rise and decline of hardcore feminism, rationalism and the oppression of women still make themselves felt, and women still feel the need to strengthen their position in today's postfeminist society – and in science. As we have seen, Winterson takes part in a battle between several intricately entangled sets of dichotomies: rational versus imaginative, fixed versus unstable, and modern versus postmodern. But these dichotomies cannot be separated from the one between the masculine versus the feminine.

Obviously, to Winterson, such binary thinking has not yet lost its meaning: In *Art & Lies*, Handel says: "It's a truism that as faith in God has declined, belief in science, especially medical science, has increased" (AL 8). As can be seen from utterances like this one, the 'two cultures' certainly figure prominently in Winterson's work. And even when she appears to deflate the oppositional pairs – "It is style that makes a nonsense of conventional boundaries between fiction and fact" (AO 187) – she obviously favours the literary side of the dichotomy.

Winterson associates the masculine with modernity and science, and the feminine with Romanticism, postmodernism and the arts. In fact, her feminist critique of science originates from this very perspective. At the root of this standpoint lies a political conviction that is at the same time poetical. For

Winterson, the emancipation of a feminist imagination is an antidote to the bankruptcy of today's culture. In "Out of Space" in *The Guardian* of October 30, 2001, Winterson makes it clear who she thinks is to blame for this bankruptcy:

Everywhere I look, men are running round talking about nuclear capacity, about germ warfare, about dedicating fifty years to wipe out terrorism. The Bush administration is delighted not to have to worry about tedious environmentalists and Kyoto Protocols and World Trade protestors. This is a war – and the big trousers are back in charge.

Women will have to take a stand against this male madness. I hate the fact that war is gendered – with men doing the destroying and women picking up the pieces. Yes I know women fight in the army, but when I hear Hawking talking about aggression, and how aggression is the superior principle of survival, I know he's not talking about women.

(Winterson 2001)

The cultural pessimism Winterson displays here can also be found in her fiction. In *Sexing the Cherry* Winterson signals how cultural values are disappearing, as the Dog-Woman combats the hypocrisy of politicians and the clergy. In *Art & Lies* Handel wonders whether medicine is an honourable profession, while Picasso voices social criticism in matters of sexual abuse. In this book, Winterson presents western society as a money-culture without values. But she does not leave it at that. There is a possibility for escape and improvement.

Yet, Patricia Duncker argues in her article "Jeanette Winterson and the Aftermath of Feminism", that

Her heroines, with the possible exception of Dog-Woman and the odd dancing princess, were never interested in changing the world. If the world is full of sin, so be it. (Duncker 1998:83)

But many of Winterson's fictional characters have political dreams: Jeanette's mother in *Oranges Are Not the Only Fruit*, for instance:

We stood on the hill and my mother said, 'This world is full of sin.'
We stood on the hill and my mother said, 'You can change the world.'
(OAF 10)

Some of the Dancing Princesses are politically active in their plans against male domination, and the Dog-Woman has the power and the mission to criticise the Pentagon and other political institutions. But there is also *Art Objects* and its

vehement polemic against the shallowness of consumer culture. And what about Winterson's opinions in her monthly columns published on www.jeanettewinterson.com:

As the year ends, let's do what we can to make the world a better place. We can all do something, however small, and that's our gift. It may mean helping a neighbour or a stranger. It may mean giving money or time to a charity. You'll know what it is, because there is always an inner prompt; the voice we often muffle because it isn't convenient. (Winterson 2002b)

Winterson's writing is pervaded with a desire to change the world. Winterson's novels not only criticise the general ways in which the world is presented to us by the narratives in power – which is in fact the core of all politics – but they also call into question, very tangibly, the behaviour of specific institutions. Winterson literally attacks institutions that can be considered as bulwarks of male power and guardians of dualistic power structures. At the end of *Sexing the Cherry*, the seventeenth-century Dog-Woman changes into a twentieth-century feminist, protesting against the way in which the 'men in suits' treat the third world problem, against the fact that the Defence Budget is not reduced with the three percent which it would take to solve the poverty problem in the United States, and against the creation of a wine lake and a butter mountain in the EU. The Pentagon and the World Bank are directly criticised. If the decision were hers, world leaders and ambassadors would have to take compulsory training in feminism and ecology.

But Winterson's real feminist politics surfaces in those novels that end as feminist fairy tales, conveying an image of lesbian love as a guarantee for a happy and meaningful life. In *Gut Symmetries*, for instance, Alice and Stella wander through New York, remembering, dreaming, talking, experiencing a world of heightened sensations. Or at the end of *The PowerBook*, the two lovers walk the streets "like a pair of twins" (TPB 231):

Through the streets, you and I, and our footprints seemed to burn in the water. The steam rose up as we walked, as though our feet had been shod. Shod or branded? You marked me that day, and nothing can cool the wound. (TPB 232)

A Feminine Science

We may conclude that Winterson is political in the sense that she does want to change the way we perceive the world. Her most pressing concern is to heighten

the epistemological value of artistic thinking. The revaluation of the emotive as opposed to the rigidity of disciplined thought has important repercussions, also on political issues, because it locates an epistemology of love, of passion, at the heart of this society. Love and passion are the key instruments with which a humane politics is conducted. Winterson's 'lexicon of love' aims to provoke a more humane attitude in environmental issues and medical ethics. It seeks to reconfirm the value of ex-centricity, and of fundamental ideas such as the freedom of opinion and of speech as opposed to national, or business interests.

Let me, by way of conclusion, turn to the main question we asked ourselves in this chapter. Is Jeanette Winterson's rejection of science related to its masculinity? It is. Winterson rejects Enlightenment science because it can be seen as the most powerful manifestation of austerity, fixity and determinism, typically representing manliness as defined in Western culture since Pythagoras. Winterson rejects science when it is an instrument of the Man of Reason. Only when manly, positivist science must yield to feminist epistemology and transforms into a feminine science, does she declare her love for science. Her approval of twentieth-century physics is a lesbian love: Winterson's 'quantum science' is feminine because it upholds spirituality, intuition and an indeterminate, open-ended world.



A LITERARY CRITIQUE OF MEDICINE

Jeanette Winterson's fiction often criticises the cultural authority of medicine and the patterns of reality it produces. At the same time, Winterson tries to establish an alternative narrativisation of the body, an intimately personal orientation presented as an improvement in science. She follows her usual strategy when she initially reinforces the dichotomy between rational medicine and the intimacy of literature, but ultimately she aims at transforming the practice of medicine into a praxis of embodied knowledge. 'Embodied knowledge' is a phrase used to present knowledge as subjective, and therefore situated or located – as opposed to the disembodied objectivity of science that produced an analytic invulnerability. The notion of 'embodiment' springs from a decidedly feminist approach arguing for a subjectivity that makes us engage actively in the world around us. Winterson in fact proposes a kind of healing not based on analytic invulnerability or notions like clarity and fixity. Winterson's feminist medicine rather incorporates a belief in the necessity of a limited, partial perspective, emotional involvement, a highly sensuous approach, and a deep experience of beauty.

Scepticisms

Towards the end of the twentieth century, the humanities gradually adopted an increasingly sceptic attitude towards the idea of scientific progress and especially towards medicine as a discipline able to adequately comprehend illness. Michel Foucault published *Madness and Unreason: History and Madness in the Classical Age* in 1961 and *The Birth of the Clinic* in 1975. Foucault's writings study the interconnection between the idea of madness and the establishment of the clinic as well as the role of institutionalised power, and – as we saw in chapter 1 – power as a mechanism of exclusion at work inside society. Instead of being naturally and objectively 'given', he argues, reason and madness are constructs within historical processes. In the fifteenth century, madness was not considered an illness but an eccentric source of truth, wisdom and criticism. From the

seventeenth century onwards, however, madness was equated with illness and reduced to silence. Articulating his postmodern scepticism, Foucault says:

The years preceding and immediately following the [French, A.E.] Revolution saw the birth of two great myths with opposing themes and polarities: the myth of a nationalized medical profession, organized like the clergy, and invested, at the level of man's bodily health, with powers similar to those exercised by the clergy over men's souls; and the myth of a total disappearance of disease in an untroubled, dispassionate society restored to its original state of health. (Foucault 1975:31-32)

Built on these myths, the clinic became an institution of power and a locus for the suppression of eccentric others. Instead of valuing the voice of madness, it was suppressed as irrational. Although writers such as the American Charlotte Perkins Gilman in "The Yellow Wallpaper" already questioned definitions of madness from a literary-imaginative point of view as early as the end of the nineteenth century, Foucault's analyses were among the first historical and philosophical studies questioning the foundations of modern medicine.

Since 1990, the idea of a 'postmodern medicine' has rapidly gained territory. David B. Morris' *Illness and Culture in the Postmodern Age* is an interesting landmark in this development. Morris argues that modern medicine traditionally separates disease, an objectively verified disorder, from illness, a patient's subjective experience. According to Morris, postmodern medicine refuses to make such a distinction. Instead, it situates illness in a seamless web of biology and culture – in a biocultural model (cf. Morris 1998:12). From a similar starting point, Jean Shinoda Bolen, in *Gods in Everyman* and *Goddesses in Everywoman*, installs Greek mythology in the heart of personality and relational therapy. Martha Nussbaum connects a medical ethics with Greek mythology. These approaches have left behind the conception of the body and the psyche as natural entities, fully explicable in physiological terms.

If Foucault points out the deficiencies of modern medicine, Bolen and Nussbaum create alternatives – new forms of psychology and medicine. Foucault's perspective is historical, whereas Bolen's and Nussbaum's works attempt to shape future practice. In this chapter we will see that Winterson presents her readers with both a historical, critical perspective and a visionary perspective, directed to the future, and that, like Foucault, Winterson questions the Enlightenment optimism towards the constitution of a better society through rational thinking.

In *Gut Symmetries*, Winterson questions the authority of medicine when Jove turns away from his wife's magical past – when his utterly rational scepticism urges him to doubt a most exquisite part of her identity. Jove used to believe Stella's story about the diamond in her hip – that it got there because her mother swallowed it when she was pregnant, and that it had made its way into the foetus. Eventually, when two doctors share Jove's sceptical attitude, he decides to cut her up, in order to empirically disprove her magical worldview.

She showed me an X-ray, and sure enough there is a pea-like thing in there but it looks like shot to me; an air-rifle peppering from a gun-loose kid. I talked to a couple of doctors about the story and they both confirmed that it was impossible. I don't mind my wife telling me stories. I worry when she can no longer distinguish between the fanciful and the actual. (GS 193)

Stella's amazing story and her poetic identity are denied. Jove in fact uses the doctors' opinions to suppress Stella's eccentric tendency towards the mystical. Their estimation of medical (im)probability in the end leads Jove to violate her bodily integrity. In this way, Winterson, like Foucault and Perkins Gilman, casts suspicion on the integrity of medicine – and therefore on its claims to progress.

In the eighties and nineties, writers such as Jeanette Winterson, but also Hans Meyer-Hörstgen (cf. Kusters 1995), and theoreticians and philosophers such as Jan Marta and Kathryn Montgomery Hunter, have questioned the very possibility of medical progress. In "The Viae Ruptae of Narrative Medicine", Jan Marta (Marta 1997) signals that the narrative of medicine hides its shortcomings underneath an illusionary dialectic of success:

Ruptures, wanderings, routings, doublings back, and discontinuities are structured into a positivist highway to diagnostic, prognostic, and therapeutic 'Truth'. (Marta 1997:45)

Marta suggests that the positivist ideology underlying the activities of physicians and medical scientists is in need of revision. He argues that physicians should take leave of realist representations of illness and incorporate into their view of medicine a receptiveness of less well-worn narrative forms, such as the multi-layered narrative, which would lead to a more delicate treatment of the patient's problem. The idea of reaching diagnostic truth about the patient's condition should be revised in the light of postmodern insights on subjectivity and locality.

As Kathryn Montgomery Hunter says in her article “Narrative, Literature, and the Clinical Exercise of Practical Reason” (Montgomery Hunter 1996), physicians more often than not regard the shortcomings of medicine as merely temporary or local. They argue individual physicians may make mistakes and – certainly where the treatment of relatively new diseases is concerned – medical knowledge may still be unsatisfactory, but in principle everything is knowable, predictable and quantifiable. Montgomery Hunter’s opinion is that physicians should stop thinking about their profession in terms of clinical analysis. On the contrary, they should accept the fact that the knowledge on which medicine is founded is practical knowledge: scientific knowledge is top down and deductive; practical knowledge is circular and hermeneutic. The idea that knowledge is – at least partially – determined by its narrative form, is a point of controversy. This idea violates the analytic invulnerability of medicine. Yet, Montgomery Hunter says, physicians should be receptive to the function of narrative in medical practice. This will result in an open-minded attitude towards comparison and re-interpretation that will enrich medical knowledge. In the same way, Gerard de Vries argues that the counterparts of rigid ethical theory and rational argumentation, such as literature, the documentary, and the results of sociological research, should not be disregarded when ethical matters in the clinical environment are discussed. Montgomery Hunter’s and De Vries’ views concur with the notion that science is embedded in the over-all cultural development and that “science is one of many coequal discourses” (Greenberg 1989:49). Hunter goes on to argue that the fundamental doubt that characterises postmodern epistemology is not reflected in physicians’ ways of dealing with medical knowledge. And Hunter asks herself whether that is a good thing.

That Winterson’s novels are embedded not only in a literary field, but also in a wider field of cultural criticism becomes clear when we see how the ideas of researchers like Montgomery Hunter are echoed in metafictional passages of Winterson’s novels, or in the opinions of her protagonists. Winterson’s characters often express doubt vis-à-vis the growth of medical knowledge and the supposed progressive development of medicine. In *Art & Lies* for example, Handel condemns genetic engineering. In the following passages he cynically sketches the possibility of the genetic eradication of lesbians and red-heads.

Is there a gene we could tag and rub out for that? (...) much more profitable to ease out redheads or homosexuals. (...) In the fifteenth century it was well known that red hair was a sign of a consort of the

Devil. If our ancestors had possessed our technology, this woman opposite me would certainly be brunette. There would be no red-heads, and we would justify that loss by saying 'Ah yes, but thanks to us there are no witches either.' Genetic engineering would have taken the credit for ordinary social change. (*AL* 107)

You don't mind the harmless lady with her herb garden and decoction still, her red hair and her black cat, who lives quietly with her friend, do you? Do you mind her when I say that she is a mentally ill lesbian? And if I said I could cure her, wouldn't you think me a good man? (*AL* 108)

The fact that Jeanette Winterson is a lesbian herself and that the beauty of red hair is a theme that frequently emerges in her work, indicates that Handel's opinion of genetics echoes her own. Indeed, all through Winterson's works, red-headed women have an emblematic function, expressing love and passion. In the passages above, Winterson fights the equation of homosexuality, or in fact any other eccentric characteristic, with evil or mental illness. Eccentricity is not dangerous, she is saying, so why root it out? Genetics nowadays is able to eradicate such eccentricity – create a race according to a set of preconceived criteria. Winterson's deconstructivist strategy aims at the creation of decentered identities and therefore promotes diversity. Her books contribute to the emancipation of that eccentricity and it therefore comes as no surprise that the techniques used to exclude the 'other' are perceived as serious threats.

Foucault also draws a parallel between the role of the clergy and the role of medicine in the exercise of authority over the body. Winterson, likewise, suggests that the medical profession and the church are sometimes involved in similar mechanisms of control:

We strict Catholics won't flinch from a little medical intervention. We have made that mistake before. In 1936, when the Catholic hierarchy was colluding with the Nazis, Hitler was not in favour of Concentration Camps. He advocated compulsory sterilisation for the 'hereditarily diseased'. His advisor, Cardinal Faulhaber, disagreed: 'From the Church's point of view, Herr Chancellor, the State is not forbidden to isolate these vermin from the community, out of self-defence, and within the framework of the moral law. But instead of physical mutilation, other defensive measures must be tried, and there is such a measure; interning the people with hereditary diseases.' (Literary remains of Cardinal Faulhaber.)

Strict Catholics. Orthodox Jews. The other day I hear an ex-Chief Rabbi

arguing in support of genetic cleansing for homosexuals. It would be kinder, he said, than imprisonment. (*AL* 108)

Here, Handel sarcastically remarks that the cardinal, putting on an appearance of humanity, in fact advocated the instalment of concentration camps. Winterson incorporates historical material in Handel's narrative, staging Cardinal Michael von Faulhaber (1869-1952) who, according to historians like Ludwig Volk and Menahem Macina, defended the Old Testament, but "insisted on making a radical distinction between Judaism and Christianity" (Macina) and who at that time neglected to pronounce on the Jewish question, as he had done ten years earlier (cf. Volk 1966:171). Handel's gloomy interpretation of Catholicism only adds fuel to the historians' condemnation of Faulhaber's conduct. Handel goes as far as to accuse Faulhaber directly of cooperation. Winterson uses this historical material and bends it to her will, in order to intensify her presentation of the parallels between the church and the medical profession and to boost her presentation of the power that these institutions have exercised. Winterson wants to make us aware of the fact that all through the history of western culture, institutions like the church and the clinic have exercised power over people through systems of binary oppositions such as pious versus sinful, Lord versus devil, sane versus insane, healthy versus diseased. Jeanette Winterson is not alone in questioning the power behind these structures. I have already mentioned Mary Shelley in chapter 1, and Charlotte Perkins Gilman. Kusters' article "Operatie Hersendood" [Operation Braindead, A.E.] interprets Hans Meyer Hörstgen's novel *Hirntod* in relation to Susan Sontag's *Illness as Metaphor*, concluding that doctors' declarations of war to illness do not necessarily imply the patient's benefit – on the contrary: brain surgery, Kusters concludes, can in many cases be qualified as useless and detrimental. There are other novelists like Perkins Gilman and Meyer-Hörstgen who disapprove of contemporary medical praxis, such as the contemporary French novelist Lorette Nobécourt.

In her novel *La démangeaison* (*Itch*), Lorette Nobécourt attacks medicine in a way like Winterson. The narrator, a woman with a skin disease, suspects medicine (she literally addresses not a particular individual doctor but the profession as a whole) of wanting to suppress her. She believes that 'they' ('*ils*') simply want to kill her, and that they planted a preposterous disease onto her:

C'est la médecine qui a omis de me retourner comme il faut. Paralysée pour la moitié. On ne s'étonnera pas alors qu'*ils* aient voulu de me supprimer; à ma naissance je savais tout, j'allais tout voir, tout dire. C'est

simple: *ils* me tuaient ou je parlerais. Lutte à mort. (...) *ils* m'ont collé des maladies saugrenues comme autant d'excréments de folie à vivre sur ma peau. La mort ou la démence! (Nobécourt 1994:11)

Similar to Handel's unfavourable view of medicine, as a science that uses its authority to justify immorality in the practice of eugenics or during surgery, and to hide its intolerable crudeness, the narrator of *La démanéaison* regards medical people as dictators, or, at least as people in possession of absolute power. The word 'they', (*ils*) is written in italics almost everywhere, setting the doctors apart from everybody else. The typographic emphasis stresses the opposition between 'they' and 'me', the medical profession and the individual, the oppressor and the oppressed. At the same time it puts so much emphasis on this word that we come to associate it automatically with anger. Having identified the enmity towards medicine that is buried in the works of Winterson and Nobécourt, we need to reflect on the context of their accusations. Or are those texts merely the vehicles for purely personal vendettas?

Researchers in the field of 'technology and society' have a name for the general attitude of distrust toward technology: 'technophobia', a phenomenon powered by the idea that cultural development is triggered by technological advances, that supposedly originate and develop outside the realm of society, in some ivory tower, where uncontrollable processes are going on. This idea is called technological determinism:

So the first part of technological determinism is that technical change is in some sense *autonomous*, 'outside' of society, literally or metaphorically. The second part is that technical change *causes* social change. (MacKenzie and Wajcman 1992:4-5)

Lord Zuckerman, who according to MacKenzie and Wajcman in *The Social Shaping of Technology*, "perhaps the most explicit proponent" of technological determinism, puts it this way:

(...) the pure or fundamental science of today inexorably becomes the applied science and technology of tomorrow, with unforeseeable consequences, either immediate or remote, flowing from its exploitation. (MacKenzie and Wajcman 1992:225)

This sentiment can clearly be felt in the following passage from *Art & Lies*, where technophobia turns into what we might call 'medicophobia':

The masses are fobbed off with gadgets, while the real science takes place behind closed doors, the preserve of the pharmaceuticals and the military. Genetic control will be the weapon of the future. Doctors will fill the ranks of the New Model army. And of course you will trust me won't you, when I tell you that with my help, your unborn child will be better off? The white coat will replace that khaki fatigues as the gun gives way to the syringe. (AL 107)

In this passage, Winterson presents medical science as an extension of military and suppressive ambitions, a process aptly defined by Frank Barnaby, former director of the Stockholm Peace Research Institute: "the military technological tail wags the political dog" (MacKenzie and Wajcman 1992:226). Winterson continues in this caustic vein, when Handel's inner voice tries to point at society's redeeming features, an attempt that is undermined by Winterson's sarcasm, which deflates these claims as soon as they are made.

Don't be narrow minded Handel, with your gloomy science and medical obsessions. People live longer, our children aren't slaving down the mines, we do recognize our global responsibilities, even if our governments choose to ignore them. Women are not equal, but they are less unequal than they used to be. We don't call black men niggers. We are an advanced civilisation. A democracy. Isn't that something? (AL 109)

No, it is not, according to Winterson, who on the same page writes that "the most ardent computer modernist" (AL 109) will be disillusioned when he discovers that the ancient Greeks had already created a flourishing democracy, and one more advanced than ours at that.

Progress is not one of these floating comparatives, so beloved of our friends in advertising, we need a context, a perspective. What are we better than? Who are we better than? Examine this statement: Most people are better off. Financially? socially? educationally? medically? spiritually?

I dare not ask if you are happy?
Are you happy? (AL 109)

The rhetorical questions instantly undermine the soothing arguments of that 'ardently modernist' voice, which makes Winterson's medicophobia stand out even stronger. And, as we have seen, Winterson stands by no means alone in this critique.

Surgery and Ethics

In *Art & Lies*, the general observations about the shortcomings of medicine are mirrored by actions and decisions on an individual scale. The pretensions of medical scientists that claim to have a positive influence upon the quality of life are undermined by scenes depicting unethical medical practice. Coping with medical mistakes is one example. When Handel accidentally removes a woman's wrong breast (she is a prostitute), he feels a deep empathy and great professional frustration, as can be seen in the first quotation below. His colleagues, however, think he is an attitudiniser, as the next passage shows.

My life. What should have been an Ode to Reason has become a few
Fescennine verses...What do you call a doctor who removes the wrong
breast? I don't know. What do you call a doctor who removes the wrong
breast?
A surgeon.

'What difference does it make?'
'She's a tart. You won't be struck off for a tart's tit. We might even manage
compensation from the press. Cheer up.'
Of course. I need not have worried. That she was low and that I let her
down lower still is not a matter for concern. (*AL* 122-123)

In the previous section, Handel gives voice to Winterson's opinion of medical science. He is also the only physician with a conscience. By making Handel an outsider among his colleagues, she succeeds even better in condemning the medical profession. Looking through his mind's eye, the reader comes to share his antipathy towards the discourse of other physicians, whose voices are exemplary for the whole of medicine. By portraying Handel as a physician with a consciousness, Winterson is able to present the medical profession as an immoral praxis. The fact that he is set apart from the group points out that his sociability and caring attitude are not commonly found among his fellow doctors, who seem unable to understand the need for ethical behaviour. Elgin and Handel's colleagues serve as representatives of the dominant medical order, characterised by rudeness, a lack of empathy, and an inability to feel or care. The successful surgeon is often portrayed as a butcher, while the empathic surgeon lacks success and is looked upon as a pathetic 'softie'.

In *Written on the Body*, we meet this Elgin, a professional cancer specialist who is confronted with the fact that his wife, Louise, has a lover. The lover's sex

remains unknown, leaving room for a lesbian interpretation of the events. A few months after the shocking announcement of their affair, Elgin confronts Louise and her lover with *his reality*, telling his wife that she is suffering from cancer. The indeterminacy of the text makes it possible to interpret Elgin's diagnosis as a reflection of his inability to cope with his wife's lesbianism. It appears likely that Elgin wants to put Louise away in a hospital and weaken her by the harsh chemical treatment for her (possibly non-existent) disease. In my section 'Two Physicians' we will have the occasion to analyse Elgin's narrative in more detail.

In *Art & Lies*, too, we find a passage that explains how lesbianism was often diagnosed as a (mental) illness:

I suppose that they [lesbians, A.E.], like other women, will be surprised to find their new listing from the American Psychiatric Association. It is 'Mentally Ill', but only when they are pre-menstrual, of course' (*AL* 108)

Surgeons and psychiatrists alike; they are all lacking in understanding of the 'other', whether merely female or specifically lesbian. All patients in Winterson's novels are female; and with exception of one flat character in *Great Moments in Aviation*, all the doctors are male. This fact reveals Winterson's attitude towards the link between medical decision-making and male domination over women. Often, the official medical narrative oppresses female subjectivity. The absence of ethics in this male medical narrative can be explained from Winterson's difference feminism (cf. chapter 5). Her opinion of medical ethics is therefore biased. Winterson, being female and lesbian, possibly feels this way about medicine because it is one of the domains in our culture that exerts great power over individual lives and is (still) male-dominated.

Paternalism and the Construction of Medical Reality

Winterson's condemnation of the established medical praxis is closely related to the paternalist attitude that she feels accompanies it. Rationalists would dismiss experiences of being oppressed as ignorance or paranoia. Postmodern critics of medical praxis, on the other hand, would show more understanding, because they are aware of the role that metaphor plays in conceptual constructions. Or they would examine the standardisation of information that enables the constitution of narratives that suppress the patient's individuality. The metaphor of warfare against cancer cells, for instance, has been addressed by Susan Sontag

in *Illness as Metaphor* (Sontag 1978:64). Following Sontag's line of reasoning, Jennifer Willet writes in her article "Imagining the Self":

Technological warfare is being waged within the body of the patient. The dossier in its digitized form becomes the command center, and the physician is the commander in chief. Here decisions are made, tactics strategized, and the enemy – the enemy is depersonalized to non-human status to render warfare more palatable for the offensive line. Only this is misleading, as in both cases – within the hospital and the battle field – the targets are human, and both will suffer injuries and sometimes casualties resulting from the wages of war. Though the clinic has healing intentions, the patient (the target) is forced to bear excruciating witness to their own planned invasion, through the observation of specialized medical images of their body in consultation with the physician. (Willet 2002)

Is the experience of paternalism in medicine rational? Or is the fear evoked by the experience of paternalism an exaggerated emotion? These are the questions we have to deal with when we debate the legitimacy of Winterson's, Nobécourt's, and also Willet's claims. Paternalism has been studied philosophically, which helps us to shed some light on these questions. In Culver and Gert's *Philosophy in Medicine*, paternalism is defined as follows:

A is acting paternalistically towards S if and only if (A's behaviour correctly indicates that A believes that) 1. His action benefits S; 2. His action involves violating a moral rule with regard to S; 3. His action does not have S's past, present, or immediately forthcoming consent; 4. S is competent to give consent (simple or valid). (Culver and Gert 1982:130)

So, paternalism is exercised from the conviction that the patient will benefit from the action, but it is done without the patient's consent. Paternalistic behaviour involves a deprivation of freedom of the person toward whom one is acting paternalistically.

As Christine Reynier indicates, one of the values most frequently stressed in Winterson's novels is freedom. The doctor is "le figure emblématique de tous les partisans de violence" and "l'ennemi de la liberté". Because Winterson wants to "se libérer des contraintes, maux et préjugés de la société moderne" and her novels are "ne (...) plus animé que par une seule certitude, l'absence de fixité" (Reynier 1997:xx). Any form of fixity, even the fixity of being declared ill 'objectively', is a form of oppression. And "l'auteur condamne toutes les formes d'oppression et de repression". Winterson distrusts the idea of medical invasion

of the subject since to expose oneself to the medical construction of reality, that is, medical objectiveness and fixity, comes close to giving up one's individual world. Winterson's desire for (conceptual) freedom rejects being labelled as ill, as well as being treated paternalistically. Rendered powerless by medical narrative or by general anaesthetic, the once free subject becomes a possible victim of medical objectification and of capital mistakes in the operating room. The idea that patients surrender themselves to the possible generalisations and mistakes of medical practitioners, and that they run the risk of being treated paternalistically, violates Winterson's sense of freedom and of being capable of deciding over her own life.

As the narrator in *Written on the Body* shows, to create an individual reality is the only way out of the medical construction of reality. In his article "Bioethics and the Construction of Medical Reality" Mark J. Cherry says:

Medicine as a scientific and social endeavor casts patients and physicians into nets of social expectations, treatment obligations, duties, rights and goals. Medical judgment is not simply descriptive or even evaluative, but performative. (Cherry 1996:357)

As Robert Pippin indicates in "Medical Practice and Social Authority", patients do not only authorise physicians to perform a specific service, but also to formulate the bounds and characteristics of medical reality. In fact, we authorise physicians to tell us what we are authorising them to do. In other words, after having giving away the control over his or her body, a patient's dependence upon a physician, is enormous (Pippin 1996). In Winterson's work this becomes apparent when Elgin creates Louise's medical reality. Both Louise and the narrator – her lover – are confronted with the performative power of medical judgment, a theme I will discuss in more detail in the next section.

Two Physicians

In Winterson's novels we come across two professional physicians. Both are cancer specialists. But that is where the similarity ends; they have very different feelings and ethical opinions. Elgin functions as the embodiment of rationality and objectivity, whereas Handel stands for care, conscience and empathy. This becomes clear when we compare Elgin's pretensions to objectivity with Handel's views on this matter.

‘Cancer is an unpredictable condition. It is the body turning upon itself. We don’t understand that yet. We know what happens but not why it happens or how to stop it.’

‘Then you have nothing to offer Louise.’

‘Except her life.’

‘She won’t come back to you’.

‘Aren’t you both a bit old for the romantic dream?’

‘I love Louise.’

‘Then save her’ (*WOB* 105)

In the first few lines Elgin appears very honest. His words suggest a humane openness and a certain sensitivity. Here Elgin does not pretend to know it all; he admits to the shortcomings of his profession. With this, he inspires the other’s confidence. But when his words are interpreted as impotence, Elgin starts bluffing. Suddenly he says that he can offer her her life. The narrator, with whom he is talking, is not impressed, and states that Louise chooses for love instead of medical treatment. Elgin denies their passion. In the end, Elgin manages to persuade the narrator to consent to his plans for treatment. Louise, however, distrusts Elgin’s ideas. Elgin, in his turn, believes that Louise is incapable of understanding what is the matter with her. He does not regard her as a person in full possession of her reason. He doubts the very existence of passion, and derisively calls it a “dream” – a fiction. Elgin’s idea of love means to sustain someone’s existence. To make it possible for someone to live. The narrator, however, wants to believe that love matters more than life. The narrator is led to agree with the violation of Louise’s explicit wish not to undergo treatment against a possibly non-existent disease, for Louise herself does not feel ill. All of this happens on the basis of the verdict that Louise is acting irrationally and the narrator is naive, since she/he believes in love. Irrationality and naiveté are opposed to rationality and the power of ‘objective knowledge’.

That love, too, can heal, that their relationship could cure Louise just as well, is something the narrator does not realise when Elgin still is in control. Later on, when the narrator experiences a meditative, more intense and closer compassionate involvement with Louise’s body, she/he feels that, “despite its destructive effect, passion is (...) life-enhancing since it is capable of transforming the individual’s powers of perception and bringing an element of magic into an otherwise drab world” (Palmer 1997:166). Although Elgin scorns love, and stresses passion’s destructive side, the book’s eventual message matches what Palmer says about *The Passion*: that love not only disrupts but also generates life.

The idea that Elgin's opinion should be regarded with suspicion, is reinforced by references in the text to unreliable scientists. When the narrator enters Elgin's study, Elgin is playing a computer game in which a good scientist (played by the operator) and a mad scientist (played by the computer) are each other's opponents. In fact, Louise explicitly expresses her distrust of Elgin:

'Cancer's not serious?'

'I'm asymptomatic.'

'Why didn't you tell me? Couldn't you have told me?'

'It's not serious.'(...)

'I was waiting for the results. I've had some more tests done. I haven't got the results yet.'

'Elgin has, he says you don't want to know.'

'I don't trust Elgin. I'm having a second opinion.' (*WOB* 103)

So, Winterson's text displays the same scepticism towards medical science that we find in Willet's or Nobécourt's. It shows how Elgin uses the power of seemingly objective and rational arguments in order to achieve a personal goal; it warns for the possibility that rationality could be a mere façade hiding a less noble identity. Those to whom we surrender, who should guard our physical and psychological well-being, might not have our best interest in mind. In short: the image of the disinterested, objective doctor is ready for rethinking.

In *Written on the Body* and *Art & Lies*, Winterson creates situations where physicians' personal interests and value judgements determine their diagnoses. Their attitude towards patients is disrespectful and paternalistic. The antagonist voices are representative of a specific discursive form of medicine, a form based on the ideas of uniform diagnostic and prescriptive statements. Not only Handel's colleagues and Elgin, but the church too, possesses this prescriptive voice, interestingly enough. Both the medical and religious spheres possess the authoritative voice that can declare people healthy or ill, sane or mad. In all the novels where illness plays a part, the voice of the patient is weak. Winterson thus presents the relationship between doctor and patient as one of dominance and subjection: strong medicine versus the weak patient. This bifurcation expresses a profound critique of the powerful paternalism in medicine.

However, in the end, Winterson never lets the rational clinical voice get away with it. The plots of her novels propagate escape and freedom. Victimised patients, characters that are considered mad, or that seem to have died, all create their own reality, moving away from the constraints of objectivity or of a

particular reality constructed by a paternalist voice. The patients are always able to resist the rational construction of their disease by the construction of an alternative reality. Freed from the performative power of diagnostic instruments and from the constructive workings of medical jargon, the patient discovers that she is not a 'patient' but a different 'person'. Winterson therefore maintains the dichotomy between the cold view of science and the warm, affectionate knowledge of subjectivity.

A Medicine of Love

Winterson does not stop at the critique of male medical praxis, but in fact tries to create an alternative way of understanding the body. Ultimately, Winterson attempts to establish a mode of thinking that integrates the experience of beauty into the very heart of medical conceptualisation. This type of medicine, capable of incorporating the subjective sphere, is way removed from the discursive form of medicine discussed above; it is a form of medicine that does not rely on uniform diagnostic and prescriptive statements, but is built instead on compassionate narrative, empathic dialogue and emotional attachment. So, although Winterson often stresses the bifurcation between medicine and literature, other crucial passages in her work indicate a one-culture approach.

From heaven the spear-light vertical in its fewer. The well-aimed light
and the dark heart. The light at rest against the heart. Light surgery for
cardiac arrest. The operation of light upon the heart is simple; the aortic
valves open like trumpets, a brassy euphonic of high C driving the blood
through tunnels, red rush of pleasure, excitement, energy of feeling (...)
(*AL* 121-122)

Here, music and surgery unite. Heaven and hospital become a single creative sphere. The beauty of the body exposed by the surgeon's knife is celebrated. External light touches the vital organs. Sounds of brass instruments accompany the viewer's excitement about the patient's beautiful body. Essentialist notions of the character of medicine and of the arts are undermined: medicine can be artistic just like art can be healing.

Similarly, in *Written on the Body*, we witness the fusion of anatomy and poetry. Uncertain of Louise's condition, the narrator writes a set of love prose-poems using excerpts from an anatomic atlas. Opposing the clinical narrativisation of the body and emphasising the paternalistic power implicit in these discourses, Winterson constructs a poetic, mythic as well as anatomical

narrative of caring. The different sections in *Written on the Body* (“The Cells, Tissues, Systems and Cavities of the Body” and “The Skeleton”) describe in minute detail how some parts of the body are built. It is the gaze of the passionate lover studying the body of the lover, while at the same time this study is intertwined with sexual arousal and amorous wonder:

THE CLAVICLE OR COLLAR BONE: THE CLAVICLE IS A LONG BONE WHICH HAS A DOUBLE CURVE. THE SHAFT OF THE BONE IS ROUGHENED FOR THE ATTACHMENT OF THE MUSCLES. THE CLAVICLE PROVIDES THE ONLY BONY LINK BETWEEN THE UPPER EXTREMITY AND THE AXIAL SKELETON.

I cannot think of the double curve lithe and flowing with movement as a bony ridge, I think of it as the musical instrument that bears the same root. Clavis. Key. Clavichord. The first stringed instrument with a keyboard. Your clavicle is both keyboard and key. If I push my fingers into the recesses behind the bone I find you like a soft shell crab. I find the openings between the springs of muscle where I can press myself into the chords of your neck. The bone runs in perfect scale from sternum to scapula. It feels lathe-turned. Why should a bone be balletic? (*WOB* 129)

Such pieces of text deviate from medical texts in that they violate the norm of clinical distance. At the same time these texts do appear to produce a minute and exact study of the body. A less detached epistemology, Winterson appears to say, should be incorporated in the corpus of intellectual achievement that humans are trying to build.

Similar to Martha Nussbaum's ethic of care as expressed in *Love's Knowledge* (Nussbaum 1990), Jeanette Winterson proposes an alternative way of knowing. A humane cognition of the human condition should be caring, loving and passionate. Nussbaum says: “practical reasoning unaccompanied by emotion is not sufficient for practical wisdom” (Nussbaum 1990:40), and “because the emotions have this cognitive dimension in their very structure, it is very natural to view them as intelligent parts of our ethical agency” (Nussbaum 1990:41). Winterson writes: “Myself in your skin, myself lodged in your bones, myself floating in the cavities that decorate every surgeon's wall. That is how I know you. You are what I know” (*WOB* 120). The narrator's mind creates the object of its love – thus cognition and reality, subject and object, merge. But emotion and the intellect fuse as well. In her works, Nussbaum is interested in proving

the inadequacy of clinical detachment by showing “the richness of the connections between emotion and judgment” (Nussbaum 1990:42). According to Winterson, healing can also be a matter of linguistic construction. She argues for an approach of illness that is more sensitive to the power of narrative and metaphor. Illness, or even death, might not be the trying confrontations we know them for, if we would be able to use another approach than the warfare perspective that Susan Sontag pointed out earlier.

Frederick Turner indicates in *Beauty* that “our paradigms of ugliness” determine the ideas of illness and death. Turner argues that we should not merely see illness and death as the failure of life, a confirmation of the inferiority of humans to bacteria. He proposes to see death in another sense, as

the boundary and formal edge in time of a life, (as) one of the most beautiful things we know. We make room by our death for other lives, for a sharing of the world with them, and an enrichment of the world by the multi-leveled structure of our relations with them. The only human cell that is immortal is a cancer cell; all others give up their lives of the good of the whole body (...) (Turner 1991:13)

The philosophy of empathic understanding is not new. One of its strongest manifestations surfaced in the Romantic era. The Romantic natural philosophers replaced a mechanical notion of nature with an image of nature as a living entity. Johann Wolfgang von Goethe thought that Newton “tormented” light by dividing it into parts. This philosophy is not limited to the field of literature either; it is also an element in New Age thinking. Again we see that Winterson’s worldview echoes New Age ideas. In Ferguson’s *The Aquarian Conspiracy*, there is a section on medicine. It contains images of “holistic health” (Ferguson 1980:259) – “a humanistic medicine” that deals with the “bodymind” (260) and “psychic healing (261), enabling the rise of a “changing image of man” (260). Ferguson describes a new paradigm in medicine, led by “an awareness of wholeness in a broken society” (261).

In chapter 2, I have discussed the fact that Winterson’s work expresses both a sense of wholeness and a love of fragmentation. Her longing for unification through love and care corresponds with her utopian visions. The significant role of language in the constitution of that alternative, superior reality sometimes shows considerable correspondences with New Age ideology: “The Conspiracy also recognises the importance of semantics to bridge the old and the new” (Ferguson 1980:263). If words are endowed with new meanings by poets

and other literary writers, what was ill could become healthy, the finite can be reinterpreted as infinite, and what appeared dead can come alive again. This is one of the ways we might read *Written on the Body*: that the linguistic rites in the parts on anatomy function as semantic mantras or constructionist prayers with which Louise's condition is linguistically altered. In Winterson's world, the imagination and language are life-saving powers, because ideas and words alter the nature of physical reality – tissue, bones, and blood – to give new life.

It is in Jeanette Winterson's conception of life and death where her medicine of love clearly takes shape. Her world, as we have seen in earlier chapters, is infinite, and her fiction, life sometimes appears infinite as well. The most interesting case in point is the death of Jove's father in *Gut Symmetries*. A physicist like his son, he worked together with Heisenberg and other quantum theorists, and Jove is repeatedly pondering over the idea that his father "may simply have shifted to an alternative point of his wave function" (*GS* 161). Jove explains: "At the sub-atomic level, our seeming-solid material world dissolves into wave-like patterns of probabilities" (*GS* 161). He rehearses the idea that, maybe, life and death are just two different possible states in the electronic wave cloud. Jove's grandmother believes that her son is in heaven. Jove hopes that "he has found the energy to continue along his own possibility" (*GS* 162). It is just a difference in terminology, he says. Magical, mythical, and metaphysical connections to science occur all through Winterson's work. The body, its life and death, are not the result of mere chemical processes. The energy within the body is described as a magical phenomenon more than once. We already saw how a body came into existence in Fortunata's dancing school (cf. page 104); here we see how death is no longer linked with what Turner calls "the paradigm of ugliness". Moreover, birth and death have become supernatural phenomena that, when witnessed, produce sensations of fantastic beauty.

Turner says about such beauty: "The indescribably beautiful is always, I believe, partially describable" (Turner 1991:10). Winterson's fragmented narrative form might indeed be the only way for her to describe such moments of meaning, such a deep love or such thorough understanding. Donna Haraway's notion of a female science (or medicine) also has as its prerequisite the locality, the fragmentation, of narrative – producing what she calls 'situated knowledge'. "Feminism loves another science: the science and politics of interpretation, translation, stuttering, and the partly understood. (...) feminist embodiment resists fixation and is insatiably curious about the webs of differential positioning" (Haraway 1991:195-196). Perhaps it is only through such a partial

perspective as described by Haraway and as encountered in Winterson's novels, that this deep sense of beauty, a feminist ethics, and a medicine of love can really come to the fore.

The Role of Literature in Medical Ethics and Medical Theory

By staging physicians and patients, and by questioning the validity of diagnosis and treatment, Winterson's fiction engages in the issue of medical development and medical ethics. We could ask ourselves why writers in general, or Jeanette Winterson in particular, wish to express their opinion in this way. Isn't it strange that these literati do not leave these matters to physicians and ethicists? Taking up the perspectives formulated by Jan Marta (Marta 1997) and Gerard de Vries (Vries, De 1993), it can be explained that writers like Winterson not only feel the need to criticise the practice of medicine, but also have the urge to plead for the importance of literature in matters of ethics and morality.

At the end of *Gerede twijfel. Over de rol van de medische ethiek in Nederland* [*Justified Doubt; On the Role of Medical Ethics in the Netherlands*], the Dutch philosopher Gerard de Vries discusses the way in which medical tragedies should be represented. He argues that not only philosophy but also the humanities as a whole, should consider it their task to create a vocabulary in which both the particular individual case and principles of a more general kind are formulated; in which both the highly subjective experience of a tragedy and medical-ethical theory can be attuned. I would like to quote his plea for the role of the humanities in the analysis of medical practice.

Op dit punt is een belangrijke taak weggelegd voor filosofen en andere beoefenaren van de zogenaamde geesteswetenschappen en voor de kunsten. Een belangrijk deel van hun metier bestaat immers uit de analyse van het conceptuele apparaat waarmee mensen zich oriënteren, zowel hun taal als de visuele kaders waarvan zij gebruik maken. Van hen mag gevraagd worden de ruimte te scheppen voor zulke vormen van getuigenis. Dat brengt onder meer kritiek met zich mee op de basiscategorieën die – via lange en respectabele tradities – ertoe aanzetten om wat zich als een tragedie aandient te reconstrueren als heldere, overzichtelijke en daardoor snel-beslisbare problemen. Een aantal daarvan, met name enkele filosofische basisbegrippen, zijn (...) reeds ter sprake gekomen: de opdeling van 'subject' en 'object' en het tegenover elkaar stellen van gevoel en verstand, bijvoorbeeld.

[In this respect an important task is reserved for philosophers and other

researchers in the humanities, and for the arts. A significant part of their profession does consist of the analysis of the conceptual apparatus with which people orient themselves: both their language and the visual frameworks they use. They should be asked to create a space for such forms of testimony. This will lead to, for instance, a critique upon the basic categories that – through long and respectable traditions – urge to reconstruct what presents itself as a tragedy, into clear, ordered and therefore quickly decidable problems. A number of those, especially some basic concepts of philosophy, have already been discussed (...): the split between 'subject' and 'object' and the bifurcation of feeling and intellect, for instance. [Transl. A.E.] (Vries, De 1993)

De Vries argues that literary scholars should occupy themselves with tragedies in medical ethics and question traditional ways of dealing with them. Not only in the case of medical tragedy, but also when scientific, ethnic or imperialist tragedies occur, an important, maybe even crucial role is reserved for the literary field, and indeed for the arts and the humanities as a whole.

Perhaps postmodern literature is the best kind of literature to fill this role. As Jan Marta argues in "The Viae Ruptae of Narrative Medicine",

The value of postmodern literary texts to the theory and practice of medicine, and to the literature-and-medicine-canon, lies in their power to disconcert and rout the reader from well-worn narrative paths and to engage the reader in an experiential process of inquiry. (Marta 1997:65)

Through its anti-traditional form, postmodern literature questions settled patterns of thinking. It defamiliarises the familiar and challenges narrative and philosophical convention. Under the influence of postmodern analyses of the relationship between linear narrative patterns and the aura of universal truth, the narrative emphasis shifts to ruptures and discontinuities, or fragmentation, and an awareness of the linguistic construction of reality emerges. Because of these characteristics, postmodern novels play a special role in the critical function of the arts. Postmodern literature deconstructs binary oppositions such as subject versus object and emotion versus reason. A critique of medicine can therefore very well be formulated through postmodern literary narrative strategies, since this type of narrative demands a legitimization of the very patterns that once shaped this discipline.

Winterson's novels subscribe to and repeat oppositions between on the one hand medicine as a diagnostic and therapeutic economy, and on the other

hand the arts where narratives are set free and where the subject is intimately understood. Yet, in the end, Winterson always escapes from this bifurcation by establishing an imaginatively rich and undisciplined alternative reality; a reality where the subjective and the objective elements of our understanding of the human body fuse in an experience of beauty. At that point, a cynical postmodern attitude makes way for a Romantic experience of the Whole, expressing the idea that reason and emotion do not necessarily have to exclude one another. From this fusion a new medical ethics can emerge. An ethics, to be sure, that can hardly be called postmodern, although the literary strategies it employs often are. We find polyphonic narrative structures, metafiction, a confusion within the concept of the self and a perturbation of autobiography, a violation of ontological spheres, a playful attitude with respect to historical fact and so forth. However, Winterson's utopian visions of beauty provide a basis for an ethics of love that certainly does away with postmodernism's much vaunted 'crisis of knowledge'.

By experimenting with the type of narrative that emerged with the postmodern crisis of knowledge, and by criticising the types of medical knowledge produced by powerful institutions such as the church or psychiatry, Winterson situates herself within a wider cultural discourse. The voices in her work echo Foucault, and postmodern medical philosophy, and parallel other contemporary authors' critiques of late twentieth-century medical praxis. However, with her aesthetic ideals, Winterson overcomes the conceptual limitations within medical research. Instead, Winterson is able to produce a transcendent image of meaning that supersedes the postmodern sense of a flat and finite reality. For her, the body no longer is mortal and life is not meaningless. And the body is, more than anything else, the object and subject of love. Moreover, she parallels the contemporary calls for a new feminist medicine (cf. Haraway 1991). But Winterson is not writing a cultural analysis in the form of a philosophical treatise. Her literary value surfaces when she produces visionary imaginings of a reality beyond everyday understanding. It is only through a heightened sensitivity that this new realm of pure beauty can be experienced, where the body can be really understood not only through the faculty of reason, but also by the cognitive dimension that is reached by way of the emotions.



CONCLUSION

In the intellectual history of the west, science has institutionalised itself as the exclusive domain of rational analysis and rational language, while literature and the arts remained the domain of fiction and fabulation. In this tradition, science became a synonym for truth, and literature for lies. Jeanette Winterson challenges this epistemological hierarchy. She rejects the Enlightenment belief in the mechanical (and therefore predictable) nature of the world, and the subsequent faith in scientific method. She uses her writing to show us that the imagination enables us to reach a higher reality, a world more meaningful than the one we have come to understand through the faculty of reason. The world that art opens up is a world more true. That is why the aesthetic must be acknowledged as a mentality that takes us beyond the dreary fabrication we call 'real life' – i.e. the world of managerial economy. Her work is firmly rooted in the anti-modern tradition and thereby places itself right at the heart of the 'two cultures' debate. By fighting contemporary manifestations of reason and empiricism, Winterson re-enacts the ancient quarrel between the two cultures.

But Winterson does not reject science categorically. In her fiction, she often uses scientific concepts as vehicles for the expression of a miraculous reality. Winterson's enchantment of space and time in fact openly draws on the ideas and vocabulary of the new sciences. Winterson's 'quantum tales' must be regarded as antidotes to the shallowness of the modern world. These antidotes are presented not as mere fairy tales, but as alternative realities, as utopias. Winterson's texts therefore are also environments where different subcultures intersect.

Her creative interpretations of science are not directed against science as such, but rather against a specific *kind* of science – classical empiricism. Still, although she seems to accomplish a fertile connection between the two cultures, her 'quantum politics' is only geared towards the fortification of values that have always been literary to begin with: physics is only accepted in Winterson's spaces when it underwrites ideas that long since have been put forward by literature. Winterson fuses science and literature only when they can be combined to express the miraculous, and when they match her ideal of passionate involvement.

Winterson's attitude towards science cannot be separated from her feminist standpoint. If Jeanette Winterson rejects science, she does so because of its masculinity. Her rejection of Enlightenment science is so fierce because it can be seen as the most powerful manifestation of austerity, fixity and determinism, typically representing manliness as defined in western culture since Pythagoras. Winterson rejects science when it is an instrument of the 'Man of Reason'. Winterson's 'quantum science' is feminine because it upholds spirituality, intuition and an indeterminate, open-ended world.

Winterson presents knowledge not as fixed, objective or analytically invulnerable, but as subjective and situated – as 'embodied'. The notion of 'embodiment' stems from a feminist approach arguing for a subjectivity that is actively engaged in the world. Winterson in fact proposes a kind of understanding of the world and of the other, that incorporates emotional involvement, a highly sensuous approach, and a deep experience of beauty.

At the opening of this book, I wrote that anyone interested in the contrasts and synergies between the sciences and the humanities should read Jeanette Winterson's work. I hope that those who do, will agree with me, that Winterson's writing not only makes us aware of the complexity of the 'two cultures' debate, but that her work also opens up new vistas in this confusing debate. Winterson's stories tell us that any narrative that prides itself on objectivity and universality, and that guarantees economic progress, is not innocent. Scientific knowledge is culturally conditioned. Rationality is permeated with opinions, stories, histories, and agendas, and what counts as progress is therefore suspect. Winterson does not argue against science and technology per se; her aim is to reveal that technology and science have been dominated by masculine ways of thinking that favour reason and fixity. Scientific theories, practices and institutions, like their truths, have been caught in a rational harness. Winterson's Romantic and postmodern ideal of knowledge, that includes the subjective, the aesthetic, the miraculous, the erratic and the emotional, serves as an antidote to the authoritative power that has held science – and our world – in place for so long. This ideal of knowledge reinstalls literature and the arts as valid intellectual discourses, resulting in a type of knowledge that claims to surpass traditional scientific knowledge. Winterson complains: "We are hardheaded, ruthless, computer types, who don't leave time to dream". It is time we should begin to "trust the imagination". She aims to revalue the "hidden mysterious dreamy part of us that is not ruled by logic or commonsense" (Winterson, 2003b).

Winterson's ultimate preference for literature arises from the fact that in literature, the world is free from restraints. Her enchanted world can be shaped in forms that defy any law, any rigid order. Winterson's position in the field of science and literature crosses disciplinary boundaries: she 'borrows' the aura of power that has always accompanied science – in order to strengthen the epistemological prestige of the literary world. She 'borrows' scientific ideas as well; and incorporates them in a world of fairy tale and myth. She exploits the imaginative potentials of these scientific ideas, without caring about the fact that in the scientific domain, these concepts are bound by disciplinary conventions or other limitations of scientific praxis. These limitations are no concern of Jeanette Winterson because "It is the poet who goes further than any human scientist" (40 115).



APPENDIX I: OVERVIEW OF MAIN CHARACTERS

YEAR OF PUBLICATION	TITLE	NAME	IDEA REPRESENTED	FUNCTION
1985	<i>OAF</i>	Jeanette	Quest Uncertainty	Heroine
		Jeanette's mother	Rock-solid principle Certainty	Adversary
		Pastor Finch	Judgement Power	Adversary
		Winnet	Quest Uncertainty	Heroine
		The Sorcerer	Visionary	Helper
1985	<i>BFB</i>	Noah	Capitalism	Comic
		Bunny Mix	Romance	Comic
		Mrs. Munde	Romance	Comic
1987	<i>TP</i>	Henri	Devotion	Hero
		Villanelle	Exuberance The fleeting	Advocate of JW
		Napoleon	Deadening grip of modernity	Villain
		Salvadore	Greed	Villain
1989	<i>STC</i>	Jordan	Journey Quest	Companion Advocate of JW
		The Dog-Woman	Justice Transformation	Heroine
		Fortunata	Freedom	Helper Advocate of JW
		The Twelve Dancing Princesses	Freedom	Helper

1992	WOB	I	Infinite love	Hero/Heroine Advocate of JW
		Louise	Beauty	Heroine
		Elgin	Power	Villain
1994	GMA	Gabriel Angel	Quest	Heroine
		Duncan Stewart	Hidden	Companion
		Rex Goodyear	Fixity	Villain
1994	AL	Picasso	Escape	Heroine
		Handel	Sensitivity	Companion
		Sappho	Poetry Sex	Heroine Advocate of JW
		Doll Sneerpiece Miss Mangle Ruggiero	Diversion Theatre Illusion	Helpers
1997	GS	Alice	Completeness	Heroine
		Jove	Selfishness	Villain
		Stella	Mysticism	Heroine
2000	TPB	Ali or Alix	Dynamic	Heroine Advocate of JW

APPENDIX II:

OVERVIEW OF WINTERSON'S NOVELS

In *Oranges Are Not the Only Fruit* (1985), a semi-autobiographical novel in seven chapters named after the books of the Old Testament, the main character is Jeanette, a girl adopted by a working class couple active in a Pentecostal community. Jeanette is a naïve and yet very determined, self-assured girl. The mixture of early wisdom and childhood innocence is quite charming. In the course of the novel we see how Jeanette is trying to come to terms with what she herself experiences as good and that which her mother and Pastor Finch believe is virtuous. In that sense, it is a *Bildungsroman*. One of the themes in this book is the feeling of uncertainty Jeanette experiences, that she is trying to come to terms with: “I wasn’t quite certain what was happening myself, it was the second time in my life I had experienced uncertainty” (*OAF* 98). At the end of the novel, she opts for a life that embraces that feeling, leaving behind the certainties of the black-and-white world created by her mother. Interestingly enough, Jordan, a boy that appears in *Sexing the Cherry*, is confronted with exactly the same turning point in his teens: “Running away from uncertainty and confusion but most of all running away from myself. (...) And then I saw that the running away was a running towards” (*STC* 80). Different characters seem to converge, sharing identical insights, which makes them not so much owners of separate and personal identities, but rather, allegorical archetypes. *Oranges Are Not the Only Fruit* also stages her alter ego, Winnet Stonejar, an anagram of Jeanet* Wint*rson, turning up in a second plot line that has the feel of a fairy tale. Other characters are Jeanette's mother, a confirmed believer in the power of the Lord, an extremely determined evangelist and a ruthlessly principled person. We also encounter Jeanette's girlfriend Melanie, with whom she has her first lesbian experience. Pastor Finch is empowered to judge other people's behaviour, and Jeanette's mother is the representative of the notion of ‘rock-solid principle’ and of the belief in certainties. They are both adversaries of the worldview that the book in the end brings forward. These two characters also embody the total absence of playfulness and doubt. Jeanette and Winnet, young protagonists

trying to find out who they want to be and whom they should regard as role models, represent the idea of the quest, and the notion of uncertainty.

Boating for Beginners (1985) is a book that Jeanette Winterson was not too proud of for a while. Winterson only commented on it years afterwards, saying that publishing it three months after her first novel certainly proves it was not meant as a second novel, and that she wrote it in six weeks for money. For a while, it did not appear in her publication listings, and now it is labelled as a comic book. The interesting thing about this novel is the juxtaposition of ontological realms – biblical times and the postmodern age of consumerism. These realms are mixed in such a bizarre way that the book actually should be seen as innovative. The characters are all quite flat and naïve. There is Noah, running a little boating company, writing a book “showing how the Lord had always been there, always would be there and what a good thing this was. They were anxious to make the book dignified but popular, and had decided to issue it by instalments starting with *Genesis* or *How I did it*” (BFB 14). Helped by the Unpronounceable, Noah and his friends start promoting the book in the ‘Glory Crusade’. Things get complicated when Noah accidentally creates the Unpronounceable’s incarnation when he spills some Black Forest Gateau on a toaster. Then there is Mrs. Munde, a hopeless romantic, who has a daughter who gets stuck in the Hallelujah Hamburger Machine, and who is fond of Northrop Frye, who passes by the ark all of the sudden. We also come across Bunny Mix, a novelist that can be classed among writers like Maeve Binchy. An interesting character is the orange demon, who is able to travel through all the eras of literature, from book to book, and who, when he pops up, comments not only on the characters’ lives but also on the novel’s plot structure. He is a metafictional intruder, viewing all times simultaneously, merely playing about with time, criticising everything. Noah represents capitalism, Bunny Mix and Mrs. Munde stand for romance. The other characters are less pronounced and are mainly there to for comic effect.

The Passion (1987) is and is not an historical novel, both reproducing and manipulating the past. It is divided in four parts, The Emperor, The Queen of Spades, The Zero Winter, and The Rock. The book begins with the Napoleonic wars where Henri, a young Frenchman, decides to join Napoleon’s army, to become a cook for Napoleon’s and satisfy his insatiable lust for chicken meat. His friends are Domino, a midget, and Patrick, the eagle-eyed priest. The second part of the book at first seems totally unconnected to the first part. We meet

Villanelle, a cross-dressing Venetian woman who once decided to get married to a cook called Salvatore, who immediately sold her to the army to become a vivandière, a playmate for the soldiers. Together with her, Henri leaves for Venice. Villanelle's husband returns to demand her back. Henri kills him and is declared mentally ill. He is locked up on an island for madmen, called San Servolo. Henri's heart is broken. He has lost both passions – his admiration for Napoleon and his love for Villanelle. This hurts him so much that Henri becomes a disillusioned and lonely man. In the end he starts appreciating Voltaire's words – "il faut cultiver son jardin" – and Henri turns to gardening. Henri represents passionate devotion and fidelity. Villanelle represents exuberance, Napoleon is the emblem of the deadening grip of modernity and Salvatore represents greed. Despite the tragedy, *The Passion* leaves behind hope: Patrick's wonderful all-seeing eye is a marvellous source of images and stories; Henri's desire to grow roses endures, just like the continuous though impossible passion between Henri and Villanelle.

Sexing the Cherry (1989) has a dual narrative pattern. There is Jordan, a pensive boy who likes to travel (like many other of Winterson's characters, he loves journeys over water), and who often reflects on the nature of time, the structure of reality and about all the new scientific theories that emerge in his seventeenth century world. Like his narrative counterpart, the Dog-Woman, who adopts him when she finds him somewhere at the banks of the Thames, he is presented not only in a seventeenth-century setting, but also placed in our late twentieth-century capitalist society. The Dog-Woman is a woman of outrageous proportion. She is ugly, covered in dirt, and she smells terribly. In all her unfortunate naïveté she is taken advantage of, and because she is so often appalled by the things men do, she gets to hate puritans and men, against whom she acts with an overdose of violence. Other important characters are the Twelve Dancing Princesses, one of which is Fortunata. The Dancing Princesses are kept in captivity, but at night, they fly out through the window, visiting a city where everybody dances. Fortunata is Jordan's soul mate and functions as his guide into a transcendent reality. Unhindered by principle or any natural law, she moves in wonderful worlds of fascinating magic. Jordan, who dreams of becoming an explorer, represents the journey. Fortunata is the ambassador of freedom, and the Dog-Woman, continually revenging the misdeeds of modern society, represents justice.

Written on the Body (1992) tells the love story between an unnamed narrator and Louise, who is married to Elgin. Louise is a beautiful redhead; the narrator is a Romeo (whose gender remains undeclared). The relationship between the narrator and Louise could be both hetero- and homosexual. Elgin certainly is not a sympathetic man. We read that “he feels put upon and superior at the same time” (*WOB* 32) and “Elgin grew up thinking the world ought to serve him” (*WOB* 33). “His colleagues were mostly the young men he had been taught with and inwardly despised” (*WOB* 35). “Elgin’s best friend whose name he couldn’t remember. Elgin in a hired morning suit just a size too tight” (*WOB* 34). Elgin is a cancer specialist who diagnoses his wife Louise as having blood cancer. Louise does not trust him, but Elgin’s persuasion has such force that the two lovers give in – Louise must be treated and the lovers separate. In the end it is uncertain whether Louise is alive or dead. In the middle of all the pain of abandonment and uncertainty, the narrator writes a series of violently passionate prose poems inspired by passages from an anatomy book. The narrator represents never-ending, transcendental love. Louise appears as the incarnation of beauty. Elgin, repressed and frustrated by his childhood friends and later striving to win competitive computer games, represents the concept of power.

Great Moments in Aviation (1994) is set, like a part of *Gut Symmetries*, on a boat sailing across the Atlantic. This film script was filmed under the name *Shades of Fear*, directed by Beeban Kidron. In this dissertation, I have stuck to the script. We are introduced to Gabriel Angel, a beautiful young black woman from the Caribbean, named after St. Gabriel the Archangel, angel of incarnation and consolation. She is the granddaughter of Vesuvia, a wise old lady. On the boat, she meets Duncan Stewart, a handsome and charming man who appears to have some secrets, that, by the end of the story, do indeed come to the surface. The ending of the book presents him as a beautiful person capable of love. His counterforce, Rex Goodyear, the art dealer from *Great Moments in Aviation*, is an unsympathetic character. He mistakes beauty for truth and confuses art with money. He says he is an art lover but, unmasking forgeries for his profession, he explains that “We need certainties in this life, I’m sure we can agree on that”. Anyone knowing Jeanette Winterson’s work will immediately recognise that characters searching for certainties are diametrically opposed to the idea of “what you risk reveals what you value” (*TP* 91 and *TWOP* 207). Indeed, in her introduction to the film script of *Oranges Are Not the Only Fruit*, Winterson states that “nothing is final, (...) there is no last word, no summing up, there are only

guesses and conjectures and games”(GMA 77) and that art is “showing up the nonsense of objectivity” (GMA 77). But that objectivity is exactly what Rex Goodyear is interested in. He wants to get rid of uncertainty, to end all doubt as to the authenticity of a work of art. Gabriel stands for the quest, Duncan for mystery, and Rex for what I would call ‘insurance culture’ – the drive in people to eliminate risk, to ensure safety and stability, to fixate the world.

Art & Lies, A Piece for Three Voices and a Band (1994), is a polyphony containing the voices of three main characters, Picasso, Sappho and Handel, and of several minor ones like Picasso’s family members, Handel’s colleagues and patients and Sappho’s lovers. Three marginal, but special characters – Doll Sneerpiece, Ruggiero and Miss Mangle – serve as a chorus in a tragedy, they are eccentrics in a night club who comment on the events that are unfolding. Picasso is a young woman who wants to be a painter, and who is maltreated by her brother. When she tries to commit suicide by jumping off a roof, she is saved by a dissolution of gravity. Sappho is a poet living both in 66 BC and also a squatter in the present age, and Handel is a sensitive, insecure surgeon who once was a Catholic priest. Their narratives are stories of violence and repression, and they need to escape from their environment. In the end, they meet in a train leaving for a utopian world. The book ends with some sheet music from Strauss’ *Der Rosenkavalier*, stressing the operatic, polyphonic quality of the book. Winterson writes on her website: “I’m looking for an e-version of *Art & Lies*, so that readers can hear the music.” The book has a fragmented structure that breaks with traditional ideas of plot even more radically than her earlier books. The city that the characters live in is controlled by a system aiming for control, forcing individuals into line. The three protagonists are sympathetic figures, Sappho being an emblem of poetry and sex. Picasso stands for escape, while Handel represents sensitivity.

Gut Symmetries (1997) begins on a boat, the QE2, where Alice, Jove and Stella meet. Alice is a British physicist, born in a tugboat, who lectures about the nature of time. Jove, short for Giovanni, but also a Latin conjugation of Jupiter, is a respected American quantum physicist. He and Alice are having an affair. Stella, Jove’s wife, is a Jewish poet who was raised by a New York bookshop owner who used to quote from the Kaballah, thus awakening young Stella’s love for mysticism. Jove and Alice’s adulterous relationship transforms into a triangle when Alice and Stella fall in love with each other as well. Both Jove and Alice are trying to cope with their fathers’ deaths. At the end of the book, Stella and Jove

shipwreck on their pleasure boat, and Jove eats a part of Stella's body to ensure his own survival. His motives are very selfish. Stella, however, is not yet dead. They both survive. In the end, Stella and Alice leave together, agreeing that men are but weak creatures. *Gut Symmetries* contains many passages that have all the appearance of popular science. Alice's and Jove's education as theoretical physicists stands in close relation to their spiritual life. Therefore, explanatory passages on physics are integrated in the larger story about love, fidelity, respect, and death. Through Alice, Winterson also ventilates her love for the dark, occult corners in the history of science. Alice and Stella in the end exceed what is perceived as their male-centered heterosexual weakness, becoming self-assured lesbians, Stella representing mysticism and Alice representing completeness: "...time (...) now flowing together, and joined with the floods and cries of men and women I have never met, places and years that snag their movement in mine and choose me, for a moment, as a conscious depot of history" (GS 218).

The PowerBook (2000) comprises several stories situated in the more than virtual world of the internet, the mythical world of Lancelot and Guinevere, and the world outside, although the distinctions between these worlds are not always clear. The book plays with the virtual right from the start, lacking a table of contents, but presenting the reader with a software menu that lists amongst other items 'OPEN HARD DRIVE', 'NEW DOCUMENT', 'SEARCH' and 'VIEW'. Its main character is Alix or Ali, an e-writer, who stages him/herself in various stories as a person balancing truth and untruth, fact and fiction. He/she is the emblem of the dynamic of life and the instability of representation. It starts with a story of how precious tulip bulbs were transported from Turkey to the west. The mother of the female persona attaches them to her body as if they were her testicles. A tulip added on to it serves as a penis. The theme of fuzzy gender again plays a significant role, as does the theme of the (lesbian?) love affair with a married woman. Ali or Alix meets this woman in Paris and Capri. The book ends undecidedly, allowing the reader to choose whether they separate or not. The ending suggests a lesbian plot, bringing out the victory of a dynamic, 'new' woman.

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SAMENVATTING

De westerse cultuur is gevormd door een spanning tussen ten minste twee subculturen: de humaniora aan de ene kant en de natuurwetenschappen en technologie aan de andere. Deze tweedeling heeft haar wortels in de zeventiende eeuw, toen de eenheid van wetenschap en cultuur die eerder nog bestond ter discussie werd gesteld door een andere manier van denken. Deze denkwijze ging er van uit dat het universum systematisch en rationeel kan worden ontleed, en dat alle vormen van begrip die door culturele vooronderstellingen waren beïnvloed, konden worden ‘gezuiverd’. Zo moesten de invloeden van religieus denken strikt worden gescheiden van fundamenteel onderzoek naar de natuur. Deze Verlichte filosofie heeft langzamerhand aan prestige gewonnen, en is dat prestige eigenlijk nooit meer kwijtgeraakt; de hedendaagse wetenschap modelleert zich nog steeds naar dit ideaal. De klassieke filosofie is uiteengevallen in enerzijds de geest van het rationalisme, en anderzijds een humanistisch classicisme. De spanning tussen deze twee is vandaag de dag nog steeds aanwezig, en heeft geleid tot het bekende debat van de ‘twee culturen’, en later, de ‘Science Wars’. De Engelse schrijfster Jeanette Winterson (1959-) begeeft zich met haar literaire werk op dit strijdtoneel. Dit proefschrift beschrijft wat haar aandeel is in deze strijd.

Wintersons romans en korte verhalen worden in dit proefschrift geïnterpreteerd vanuit het paradigma dat ‘science and literature’ wordt genoemd. Dit paradigma is gestoeld op het inzicht dat de verhoudingen tussen de disciplines en wetenschappelijke specialismen niet alleen te typeren zijn als vijandschap, maar dat er ook verschillende vormen van creatieve interactie bestaan die variëren van beïnvloeding tot symbiose. Tegelijk onderzoekt men in dit paradigma wat daarbij de bepalende factoren zijn. Zo wordt er onderzoek gedaan naar concepten als schoonheid, waarheid en fictionaliteit. Omdat dit paradigma een brede manier van kijken behelst, en er vele disciplines en specialismen bestaan, zijn er binnen het paradigma ontelbare, stuk voor stuk fascinerende studieterranen, variërend van ‘chaostheorie en beeldende kunst’ of ‘genetica en moderne dans’ tot ‘cybernetica en Afrikaanse weefmotieven’. Ik heb mij moeten beperken tot denkers die onderwerpen aansnijden die relevant zijn voor Wintersons literaire werk – denkers die uitspraken doen over de

onderzoeksmethoden in het veld van ‘science and literature’, en denkers die zich begeven op terreinen van de fysica en de geneeskunde waarop ook Winterson zich begeeft. Daarbij heb ik mij geconcentreerd op de jaren tachtig en negentig van de twintigste eeuw – de tijd dat Winterson de werken schreef die hier worden onderzocht.

C.P. Snow gaf in 1959 met zijn lezing “The Two Cultures and the Scientific Revolution” het ‘twee culturen’-debat zijn naam. Snow merkte op dat er tussen natuurwetenschappers en literatuurwetenschappers steeds meer onbegrip ontstond. Zo veel onbegrip, vond hij, dat er vijandigheid dreigde te ontstaan. Deze vijandigheid betreurde hij ten eerste, want met een uiteengroeien van de disciplines zouden de problemen in de wereld nooit kunnen worden opgelost. Nu kan er tegen een bewering als deze verschillend worden aangekeken, en dat is dan ook te zien aan de verschillende posities die voor en na Snow zijn ingenomen. Drie decennia vóór de lezing van Snow publiceerde I.A. Richards een studie met daarin ongeveer dezelfde ideeën over onbegrip en radicaal verschil. Maar in tegenstelling tot Snow achtte Richards de scheiding terecht. Hij vond de literatuur niet helder en te weinig rationeel. Om die reden kon de literatuur, zo vond hij, geen aanspraak maken op waarheid. De natuurwetenschappen konden dat volgens hem wel. Recentere onderzoekers in de ‘science and literature studies’ zijn van mening dat er helemaal geen kloof is tussen de humaniora en de wetenschap – tenminste: die is er alleen als je die graag wilt zien. Volgens hen zijn er evenzovele situaties waarbij de twee culturen wél vruchtbaar samenwerken. Toch waart de geest van Richards nog steeds in onze academiegebouwen rond. Een bewijs daarvan is de Sokal-affaire, waarbij de natuurkundige Alan Sokal de ‘cultural studies’ onwetenschappelijkheid verweet, omdat ze maar wat zouden aanrommelen met ideeën die lukraak uit de natuurwetenschappen waren geplukt.

Dit roept de vraag op of geleerden in de humaniora natuurwetenschappelijke teksten wel kunnen begrijpen. En of natuurwetenschappers wel begrijpen wat de beoefenaars der humaniora onder waardevolle kennis verstaan. Tussen beide kampen ligt wellicht een grijs gebied. Een grijs gebied waar de New Age-beweging en Skeptische Verenigingen van over de hele wereld felle discussies voeren. Dit debat over wetenschappelijkheid en waarheid kan soms hoog oplaaien. Het is de vraag of deze strijd ooit kan worden beslecht, zolang het denken in tegenstellingen hoogtij blijft vieren. Een filosoof als Bruno Latour biedt een alternatief model, waarbij subjectiviteit en objectiviteit elkaar in het midden tegenkomen, en hybridisering niet langer wordt

beschouwd als vies of onzuiver. Een dergelijke manier van denken kan ook de problemen uit de weg ruimen die worden opgeroepen door het zogenaamde ‘invloedsdenken’. Zolang men namelijk blijft denken in termen van ‘wetenschap beïnvloedt literatuur’ of het meer revolutionaire ‘literatuur beïnvloedt wetenschap’, blijft de vraag bestaan welke van de twee de ander navolgt. Een theoretica als Katherine Hayles lost dit op met een model dat gebaseerd is op het bestaan van ‘turbulence’ en ‘feedback cycles’, waarin literatuur en wetenschap elkaar voortdurend kruisbestuiven. Toch lijkt dit model niet echt een oplossing te bieden voor het probleem van de twee culturen. Dit geldt ook voor het overigens interessante inzicht van John Limon, die beweert dat de literatuur wetenschappelijke concepten vaak zó gebruikt, dat de literaire interpretatie fungeert als een spaak in het wiel der wetenschap. Maar de tijd is nog niet rijp voor een studie naar de effecten van Wintersons werk.

Een andere manier van denken over wetenschap en literatuur hangt samen met het deconstructiedenken. Vanuit dit gedachtengoed, dat onder andere voortkomt uit de opvattingen van Jacques Derrida, wordt de vraag gesteld of de verhouding tussen wetenschap en literatuur eigenlijk wel zo dualistisch is als die al zo lang wordt voorgesteld. Het deconstructivisme zoekt en analyseert concepten die als axioma’s hebben gediend voor intellectuele bewegingen, of als regels voor het denken. Deconstructivisme wantrouwt elk concept dat zichzelf presenteert als samenhangend of overkoepelend. Derrida’s filosofie en leespraktijk wil traditionele tegenstellingen in het denken uit hun vastgeroeste positie wrikken. De oppositie tussen de twee culturen is er daar één van. De deconstructivistische manier van denken past goed bij de houding die Jeanette Winterson aanneemt in haar romans. Zij legt bijvoorbeeld inzichten uit de quantummechanica in de mond van haar sprookjesfiguren, of stelt natuurwetenschappers voor als zweverige New Agers. Naast de ideeën van Derrida speelt ook het gedachtengoed van Michel Foucault een rol in Wintersons denken. Terwijl Derrida meer geïnteresseerd is in denkstructuren in het algemeen, heeft Foucault het juist over de hiërarchie die bestaat tussen verschillende vormen van denken. Hij brengt het idee naar voren dat er uitsluitingsmechanismen bestaan tussen de verschillende disciplines. Interdisciplinaire vormen van macht en onderdrukking leiden tot een epistemologische rangorde. Als we het werk van Winterson lezen vanuit dit perspectief, wordt duidelijk dat dit idee eigenlijk de motivatie is voor haar schrijven. Haar werk kan namelijk worden gezien als een aanklacht tegen de onderdrukking van de literatuur en tegen het epistemologische prestige van het

empirisme en het objectivisme. Haar waardering voor het wonderbaarlijke is tegelijk haar verzet tegen de dominantie van de rede. Zo bestrijdt zij de cognitieve onderwaardering van de kunsten. Door eerdere ideeën over het wonderbaarlijke, zoals bijvoorbeeld die van Paracelsus of die van William Blake, in haar werk te vervlechten, neemt zij stelling in het debat over de moderniteit en de bijbehorende antimoderne bewegingen. Om hier meer over te kunnen zeggen is een korte cultuurhistorische inleiding noodzakelijk.

In de laatste twee eeuwen heeft de moderniteit zich als dominante cultuur gemanifesteerd. In deze tijd hebben ook enkele tegenbewegingen van zich laten horen. Deze tegenbewegingen zijn gestoeld op precies de tegengestelde begrippen als die waar de moderniteit zich op beroept. In het moderne denken staan concepten centraal als rationaliteit, verstand en controle, terwijl in de antagonistische stromingen de emotie, de intuïtie en het grillige of spontane worden benadrukt. De westerse cultuur wordt gekenmerkt door een conjunctuurbeweging waarbij deze geestesgesteldheden elkaar afwisselen. Achtereenvolgens zouden kunnen worden onderscheiden: de Verlichting, de Romantiek, de moderniteit van de twintigste eeuw (positivisme), en het postmodernisme. Wintersons werk is heel goed te verstaan vanuit deze optiek op de cultuurgeschiedenis. Zij verkiest steeds het gedachtengoed van die stromingen die zich als tegenbewegingen tegen de dominante cultuur hebben gemanifesteerd.

Jos de Mul en Patricia Waugh argumenteren dat het tijd is om de tegenbewegingen, net als de dominante bewegingen, te gaan beschouwen als een continue lijn in plaats van incidentele oprispingen. Bezien vanuit het werk van Winterson is er voor deze mening veel te zeggen: Winterson positioneert zich als een cultuurcritica temidden van deze episoden uit de intellectuele geschiedenis en schaaft de geschutslinies van de premoderne tijd, de Romantiek en de postmoderniteit bijeen, als één afweerbataljon dat de mens van de onderdrukking door Verlichting en positivisme zou moeten bevrijden. Wintersons poëtische opvattingen zijn vergelijkbaar met die van Romantici als Novalis, Friedrich von Schiller, William Blake, en postmoderne schrijvers als Angela Carter. Zij is dan ook niet te ‘vangen’ als een puur postmodern schrijver of als een Romantica *pur sang*. Als zij iets is, dan is zij een voorvechter van wat ik de ‘esthetische traditie’ noem. Zij poneert immers het esthetische als een antidotum tegen de verstenende en objectiverende werking van het moderne denken. Toch keert zij zich niet volledig van de wetenschap af.

Begrippen als ruimte en plaats, tijd en geschiedenis, spelen een belangrijke rol in het wereldbeeld van Jeanette Winterson. Winterson speelt in haar literaire analyse van deze begrippen met natuurkundige theorieën, vermengt deze met allerlei echo's van stemmen uit de cultuurgeschiedenis, en laat zo de grenzen tussen literatuur en wetenschap vervagen.

Het begrip 'ruimte' wordt door Winterson op verschillende manieren geëxploreerd. Zo vinden we in haar werk verschillende ideeën over de kosmos, bijvoorbeeld over een oneindig universum, astronomen met telescopen, en de wet van de zwaartekracht. Ook refereert ze aan de Euclidische meetkunde, 'parallel worlds' en het quantummechanisch vacuüm. Winterson verbindt met deze ideeën allerlei sprookjesachtige werelden, waarbij ze de mentale producten van een rationalistisch wereldbeeld 'besmet' met culturele connotaties. Het is mijn stellige overtuiging dat zij deze besmetting met opzet creëert, daarmee haar mening ventilerend dat de ratio *an sich* kennis oplevert die op cognitief of wetenschappelijk niveau veel minder betekenisvol is dan wanneer die in samenspel met een kunstzinnig denken wordt verrijkt. De pure wetenschappelijke gedachte – als die al bestaat – zou volgens Winterson, als ze vrijer zou kunnen worden geëxploreerd, rijker en betekenisvoller worden voor het kennissysteem dat de westerse mens aan het bouwen is. Zij wil dat de hoeders van dat epistemologische systeem die 'andere', 'zachte' zijde van het denken eindelijk gaan waarderen.

Het begrip 'ruimte' is voor Winterson ook een psychologisch fenomeen. De menselijke omgeving en de menselijke psyche werken in haar werk op bizarre manieren op elkaar in. Huizen, kamers, straten, steden, en zelfs de ruimte van het innerlijke ik nemen vormen aan die, beïnvloed door emoties en buitenissige natuurfenomenen, allesbehalve voorspelbaar zijn. Wintersons opvatting van ruimte laat zien dat voor haar op epistemologisch niveau de objectwereld en de subjectwereld samengaan. Dit is een opvatting over kennis die ook in de Platonische traditie en in de Romantiek duidelijk naar voren is gekomen – een opvatting die kennelijk ook in deze tijd nog veel betekenis heeft. Het is mijns inziens juist in dit post-postmoderne tijdperk dat een dergelijke zoektocht naar het samengaan van subject en object noodzakelijk wordt. Filosofen als Bruno Latour, Richard J. Bernstein en Hans-Georg Gadamer zoeken in hun werk naar een manier om dit binaire paar van zijn kracht te ontdoen, om zo een middenweg te vinden.

Ook Wintersons omgang met het fenomeen 'tijd' staat in verbinding met wetenschappelijke theorieën. Zij appelleert aan oude noties van verstrikende

tijd, maar betreurt de uitsluitende en vergankelijke betekenissen die dit met zich meebrengt, en stelt daartegen enkele denkbeelden over tijd in het geweer die sterk doen denken aan Einsteins relativiteitstheorie en de 'parallel universes'-interpretatie van de quantummechanica. Deze twee theorieën zijn allesbehalve compatibel. Maar dat hoeft in Wintersons wetenschap helemaal geen probleem te zijn – compatibiliteit is in haar wetenschap geen norm.

De geschiedenis, de gebeurtenissen die zich in het verleden hebben voltrokken, is voor haar nog een springlevende realiteit. Zo worden ook gebeurtenissen in de toekomst voorgesteld als semi-gerealiseerde feiten die ergens liggen te wachten op een bewustzijn dat ze wakker schudt. Situaties worden ook wel door haar beschreven als kruispunten van gebeurtenissen in een soort raster van coördinaten die samen een lappendeken van tijd-ruimtepunten vormen. Wintersons omgang met de geschiedenis ligt in het verlengde hiervan. Haar werk kan postmodern worden genoemd vanwege de manier waarop zij dingen uit het verleden hergebruikt, omvormt en naar haar eigen hand zet. Zij neemt in haar omgang met historisch materiaal, net als in haar omgang met wetenschappelijk materiaal, een epistemologische vrijheid, waarmee zij duidelijk maakt dat met hiërarchieën in de ladder der epistemologie niet strikt hoeft te worden omgegaan. Winterson gooit kennis, uit welke discipline dan ook, op een hoop, waarbij een relativistische houding lijkt door te klinken die doet denken aan de ideeën van Paul Feyerabend. Ik zeg 'lijkt', want uiteindelijk blijkt Winterson allesbehalve een relativist te zijn. Er rijzen wel degelijk perspectieven en houdingen uit deze hoop naar boven, die epistemologische ordeningsprincipes blijken te zijn. Winterson is dus geen succesvolle deconstructivist – door nieuwe regels voor het denken te poneren lijkt zij zelf in de valkuil te vallen waarvoor deconstructivisten waarschuwen.

In Wintersons werk gedragen ruimten als steden en kamers, maar ook de tijd en de geschiedenis, zich allesbehalve voorspelbaar. Zo is het bijvoorbeeld mogelijk dat voor een personage elementen uit het verleden helemaal niet achter haar liggen, maar vóór haar. Ook komt het vaak voor dat gebeurtenissen zich herhalen of dat personages en dingen opduiken op plaatsen waar je ze – op grond van logica en natuurwetten – helemaal niet verwacht. Waar de Verlichting, het positivisme en de hedendaagse bètafaculteiten de natuur te lijf gaan met het idee dat zij met de ratio te begrijpen is, en een van de axioma's in het moderne denken is dat alle geheimen van de natuur uiteindelijk aan de onderzoeker zullen worden prijsgegeven, gedraagt de natuur zich in Wintersons wereld uiterst grillig. Haar wereldbeeld is instabiel, op momenten metafysisch en fantastisch, en de loop van

processen is volledig onbepaald. Dit kan worden gezien als een postmoderne strategie, gericht op het ondermijnen van de macht van wat Jean-François Lyotard de Grote Verhalen noemt. Linda Hutcheon noemt een dergelijke strategie de-doxificatie – ont-wetmatiging of ont-normalisering. Winterson stelt, geholpen door de relativiteitstheorie en de quantummechanica, een andere werkelijkheid voor. Deze werkelijkheid is gefundeerd op de instandhouding van binaire paren als bijvoorbeeld vrijheid versus wetmatigheid, en subjectiviteit versus objectiviteit. Daarbij wordt telkens het eerste begrip in de tegenstelling boven het andere gesteld. Er ontstaat zo een werkelijkheid die – niet vanuit de natuurwetenschappelijke, mannelijke wereld – maar vanuit een literair-kunstzinnige en vrouwelijke sfeer als ‘de ware wereld’ wordt voorgesteld. Deze alternatieve wetenschappelijke methode levert volgens Winterson een hogere vorm van kennis op. Met behulp van ideeën uit de twintigste-eeuwse wetenschap bestrijdt Winterson vormen van wetenschap die aan de bron staan van de moderne wetenschap – zoals het klassiek empirisme. Daarmee trekt ze ook ten strijde tegen de totaliserende macht en ordening van de moderniteit.

Met het instandhouden van de bovengenoemde binaire paren wordt ook een positie ingenomen op het gebied van mannelijkheid en vrouwelijkheid. Terwijl een onderzoeker als Londa Schiebinger opmerkt dat essentialisten beargumenteren dat wetenschap mannelijk is en moet zijn, zegt John Limon dat literaire schrijvers als de vrouwen van de intellectuele wereld worden gezien, en dat de natuurwetenschappers worden beschouwd als mannelijk. Deze tweedeling wordt in Wintersons werk bevestigd: ze slaat typisch vrouwelijke waarden duidelijk hoger aan dan waarden die traditioneel werden geassocieerd met het mannelijke. Zo stelt Winterson bijvoorbeeld passie en emotie boven verstand en rede en associeert zij begrippen als ‘lichtheid’ en ‘vliegen’ met de vrouw, en ‘zwaartekracht’ met de man. Wintersons vrouwelijke personages zijn doorgaans sterk, en de mannelijke zwak. Vrouwen kunnen gemakkelijk nieuwe wendingen aan hun leven geven, terwijl mannen in Wintersons werk over het algemeen vast zitten in allerlei constructen. Toch gebruikt Winterson op het gebied van gender ook vaak postmoderne strategieën, waardoor haar antirationalistische vorm van feminisme ook wel eens op losse schroeven lijkt te staan. Haar deconstructie van de begrippen ‘mannelijk’ en ‘vrouwelijk’ leidt wel tot bloemrijke personages, maar heeft inhoudelijk nauwelijks een functie. Vermenging van droom en fantasie met de werkelijkheid wordt gezien als goed, en objectivisme als fout. Het instabiele heeft een hogere status dan het stabiele, en analogieën en metaforen zijn in Wintersons epistemologie meer waard dan

alles wat met meten en berekenen wordt verkregen. Het is niet verbazingwekkend dat Winterson juist de quantummechanica als vehikel gebruikt voor het uitdragen van een vrouwelijke manier van denken: New-Age denkers zien quantummechanica als een vrouwelijke wetenschap. Volgens hen zou quantumfluctuatie vrouwelijk zijn, en de geometrie mannelijk. Ook wordt de quantummechanica, vanwege haar paradoxale aard, gezien als een bedreiging voor de (mannelijke) rede.

In Wintersons werk wordt de westerse, klinische geneeskunde met argusogen bekeken. Winterson staat in de schoenen van Michel Foucault, wanneer zij het heeft over 'krankzinnigheid' in het licht van categorieën als 'normaal' en 'abnormaal'. Literaire schrijvers hebben vaker deze categorieën ter discussie gesteld, uit verweer tegen de positivistische ideologie die excentriciteit en het mystieke uitsluit. Foucault heeft deze uitsluitingsmechanismen filosofisch en geschiedkundig onderzocht, en Winterson sluit zich op haar manier bij zijn ideeën aan. Winterson laat in enkele van haar romans zien dat de geneeskunde zich zo sterk beroept op helderheid en wetmatigheid, en een zodanige mate van autoriteit heeft, dat er een welhaast analytische onkwetsbaarheid ontstaat. Maar zij acht de geneeskunde in deze vorm zielloos, en daarom inhumain. De geneeskunde zou moeten toegeven dat objectieve kennis niet bestaat, en zou van de *idée fixe* af moeten stappen dat persoonlijke, emotionele betrokkenheid betrouwbare kennis in de weg staat. Volgens Winterson opent deze betrokkenheid juist wegen die leiden tot een begrip van het menselijk lichaam dat nabijer en intiemer – en daarom beter – is dan het klinische ideaalbeeld met zijn objectiverende distantie. Ook de ervaring van schoonheid zou volgens Winterson deel uit moeten gaan maken van een nieuwe medische wetenschap. Deze wetenschap zou ook het narratieve aspect van gezondheid en genezing moeten onderkennen. Als de geneeskunde zou accepteren dat niet alle aspecten van leven en dood meetbaar en kwantificeerbaar zijn, dan zou er bijvoorbeeld een begrip van de dood kunnen ontstaan dat ontsnapt aan wat Frederick Turner het 'paradigma van de lelijkheid' noemt. Dan kunnen dood en leven worden begrepen vanuit een 'wereld van het onbeschrijflijk mooie'. Ook hierbij weerklinken in Wintersons werk stemmen uit het niet-literaire veld van onderzoek. Zij lijkt net als Donna Haraway een pleidooi te houden voor een feministische geneeskunde. Wintersons werk is een poëtische zoektocht naar een vorm van wetenschap die ruimte biedt aan een vrouwelijke, gevoelsmatige wijze van denken. Het resultaat van deze zoektocht zou je 'betoverende wetenschap' kunnen noemen.

CURRICULUM VITAE

Annemarie Estor werd op 24 april 1973 geboren in Gouda. Zij groeide op in Grathem, een klein dorp in Limburg. Zij bezocht vanaf 1985 de Scholengemeenschap Sint Ursula te Horn, waar zij in 1991 haar vwo-diploma behaalde. In dat zelfde jaar begon zij als een van de pioniers aan de net opgerichte studie Cultuur- en Wetenschapsstudies van de Universiteit Maastricht (destijds genaamd Rijksuniversiteit Limburg). In haar derde studiejaar koos zij voor het afstudeertracé 'Theorie en Geschiedenis van Kunst en Cultuur'. Na haar afstuderen is zij van 1996 tot oktober 2000 eerst als beurspromovendus en vervolgens als Assistent In Opleiding verbonden geweest aan de opleiding Engelse Taal en Cultuur van de Universiteit Leiden. Haar onderzoek naar de wijze waarop Jeanette Winterson in haar werk omgaat met de natuurwetenschappen resulteerde in dit proefschrift. In deze periode volgde zij postdoctoraal onderwijs bij de Onderzoeksschool Literatuurwetenschap en is zij ook als *fellow* verbonden geweest aan de International School of Theory in the Humanities in Santiago de Compostela. Daarnaast co-organiseerde zij enkele conferenties op het gebied van 'science and literature': de *Thirteenth Leiden October Conference 'Literature and Science'* in Leiden (1999), en de *First European Conference of the American Society for Literature and Science* in Brussel (2000). Daarna voltooide zij haar proefschrift naast haar dichterschap en andere werkzaamheden. Zij was redacteur bij de Onderwijsraad (Ministerie van Onderwijs, Cultuur en Wetenschappen) en is nu tekstschrijver bij Direct Dutch Publications.

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