Inter-/Textual Play and Chaos Theory:
Postmodern Science meets Jeanette Winterson

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Jeanette Winterson’s first seven novels form a cycle of fiction that has been read largely for lesbian or feminist components, or for comparative purposes with the Modernists, particularly Virginia Woolf. However, Winterson’s works are also specifically postmodern, and one element of that is the use of science and technology in her stories. Chaos theory is one of the largest influences on the science Winterson employs and is a specifically postmodern theory in science. This paper is a tracing out of the often-overlooked component of science throughout Winterson’s novels.
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<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Winterson Meets Chaos Theory</td>
<td>6</td>
</tr>
<tr>
<td>Inter-/Textual Play</td>
<td>8</td>
</tr>
<tr>
<td>Conclusions (One tendril of possibilities)</td>
<td>34</td>
</tr>
<tr>
<td>Bibliography</td>
<td>37</td>
</tr>
</tbody>
</table>
Walk with me, hand in hand through the neon and the styrofoam...

—Jeanette Winterson, *GUT Symmetries*

Introduction

In the introduction to *Postmodern American Fiction: a Norton Anthology*, the editors describe the Museum of Jurassic Technology, a “non-Aristotelian, non-Euclidean, non-Newtonian” institution in Los Angeles (ix). Museum-goers are encouraged by the anthology’s editors to “navigate among the contradictions and paradoxes of the exhibits and their authoritative commentaries, deciding for [themselves] what is, is not, or yet might be a joke” (x). Because they were built upon concepts of science, mathematics and even physics, the machines, contraptions and concepts on exhibit at MJT force a serious questioning not only of “authority” but also of science, mathematics and physics themselves. The irony of this thoroughly postmodern setting is that one of the most influential aspects of postmodernism is also one of the principal trigger factors for the move to postmodernism in the first place. It is technology (borne out of the sciences) that has enabled Western culture to shift to postmodern sensibilities, imagining other ways of being, living multi-media/’ted lives, through computer, cyborg and other technologies.

In May of 1959 at his Rede Lecture at Cambridge, C.P. Snow announced that science-types and arts-types live in two separate worlds, fracturing our culture into two separate ones: “Literary intellectuals at one pole—at the other scientists, and as the most representative, the physical scientists. Between the two a gulf of mutual incomprehension—sometimes (particularly among the young) hostility and dislike, but most of all a lack of understanding” [sic] (4). However, even as Snow was lecturing on
these thoughts, "liminal thinkers of our time were [already] shaping our current sense of the full permeability and sympathetic interrelationship of disciplines," states John Limon in *The Place of Fiction in the Time of Science* (1). Limon continues, stating that many, including Thomas Kuhn (*The Essential Tension: Selected Studies in Scientific Tradition and Change*) and Michel Foucault (*The Archaeology of Knowledge*) were developing ideas that cut across disciplinary boundaries, from physical science to philosophy and sociology, changing the way all disciplines relate to each other. Limon names "our [postmodern] intellectual age ... antidisciplinarian," destroying the very materials that build walls between disciplines (1). In *Interdisciplinarity: History, Theory and Practice*, Julie Thompson Klein traces the rise of interdisciplinary studies departments and colleges across the United States in the 1960s and early 70s, tracing off in the 1980s. IDS has seen a comeback, however, and its resilient success renders further discussion over whether science and literature can be fruitfully studied together both recursive and redundant (156-181). How they are related, though, is a pertinent topic to tackle.

Returning to Limon's statement asserting our present antidisciplinarian age, I would like to stop short of his vision of postmodernity, as the disciplines seem to remain well intact, albeit often hurdled and sometimes run straight through. I would like to explore the connections between two broad, disciplinary topics, postmodern literature and science, by specifically examining fiction by Jeanette Winterson in light of chaos theory across the sciences. As postmodern theory moves at least as far as fractured and multiple subjects, I believe that the interdisciplinary move to making connections among these subjects is an apt response. In *Chaos Bound*, N. Katherine Hayles touches on the significance of chaos theory outside of math and science, writing, "The importance of
chaos theory does not derive, then, solely from the new theories and techniques it offers. Rather, part of its importance comes from its re-visioning of the world as dynamic and nonlinear..." (143). We can finally say with "scientific verification"—if the label could still theoretically exist—that the fractured, chaotic world of postmodern literature embodies an authentic, responsible, accurate representation of the world.

Although Jeanette Winterson is a writer not a scientist, her work is steeped in ideas supported and popularized through scientific research. Winterson uses the jargon thereof as part of her own written language. In *Art Objects: Essays on Ecstasy and Effrontery*, Winterson writes,

> 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. (19)

Although it is through technology that the status of the universe as infinite and expanding has been confirmed, Winterson has rejected the idea that further use of technology can translate that "doomsaying" into "strange completeness." The use of science in her fiction discloses the fact that future revelations of science are not less likely than art to guard humanity against lack, loss and finality. For a novelist whose works have been read extensively for their feminism, lesbianism and postmodernism, I believe Winterson's relationship to math, geometry, biology and physics is an especially close one; her treatment of them is as exact and beautiful as of the "art" in her art. In fact, the theoretical
differences between how we can read the world in literature and examine it in labs becomes negligible, rendering these ways of understanding the world mutually alive, full and sensual.

For practical purposes, I must first define my terms. Although "Jeanette Winterson's novels" is a clear-cut category (conflicting and differing definitions of "novel" aside), "chaos theory" remains somewhat ambiguous, even for those in the field. N. Katherine Hayles explains in *Chaos and Order* that because "chaos" contains mythical, historical and scientific connotations, "it serves as a cross-roads, a juncture where various strata and trends within the culture come together" (2). The multiple connotations of "chaos," both technical and unscientific, are useful when studying both science and literature. At risk of supporting Snow's claim that culture itself is being divided by the arts versus the sciences, it should be noted that once "chaos" became "popularly associated with nonlinear dynamics," experts shied from it as a layman's term (2). Although "chaos theory" is put to use in any number of departments (physics, geometry, economics, meteorology), the concept remains relatively unchanged: what looks like chaos is often organized by deep structures. In *Chaos Bound*, Hayles writes, "Scientific journals are full of articles attributing departures from expected orderliness to errors, faulty experiments, or erratic equipment. Researchers interested in chaos theory are returning to these 'noisy' data and testing them for the characteristic patterns they have learned to recognize; in a significant number of cases, the patterns are there. It seems clear that they were not noticed before because no paradigm existed through which they could be understood." (145). Chaos theory, then, involves a paradigm shift for its practitioners.
Relativity, quantum theory and now chaos theory have moved scientists into similar territory authors and readers discovered as High Modernist and then postmodernist writers shifted from univocal books to polyphonic texts. In part borne out of the sciences through technology, the postmodernist perspective has lately influenced the sciences through theory: “The more subtle aspects of chaos theory have to do with changes in orientation and focus. For this reason, it may appear that the new science is simply discovering what everyone has known all along. There is some truth in this observation—but only some... If the criteria defining center and margin change, in a very real sense the structure of knowledge changes as well.” (Hayles *Chaos Bound* 144).

When the structure of knowledge changes, human beings influenced by that knowledge change as well. The symbiosis between what is researched by scientists and produced by artists generates new concepts of reality for the people in that scientific, artistic culture.

While Hayles writes explicitly about chaos theory in science, her words reflect many of the ideas Winterson discusses in her own work; for example, continuing in *Chaos Bound*, Hayles writes that, for many scientists working in chaos theory, “chaos is more than just another theory. It represents an opening of the self to the messiness of life, to all the chaotic unpredictable phenomena that linear science taught these scientists to screen out. Once roused, they remember that the messiness was always there” (173). This, in “the messiness of life” and the “unpredictable phenomena,” is where Jeanette Winterson meets chaos theory.
Winterson Meets Chaos Theory

Winterson famously commented that, with the publication of *The PowerBook* in 2000, she has finished an artistic cycle, and whatever she does next will be entirely new. Wanting to explore the seven novels of this cycle, I thought a circle, somehow in its fullness, would work as a metaphor for exploring the texts. This proves problematic, of course, as a circle ends at the same point where it begins. Thinking back to what I can remember of high school trigonometry, I remembered one period (360°) of a sine curve could signify the same kind of revolution. The graph shown below is an illustration of the sine curve. The formula for this curve is \( y = \sin x \). One period runs from \((0,0)\) to \((0,1)\), or \(0\pi\) to \(2\pi\). Essentially, a sine curve is a circle on the path of progress. It is cut at the unknown point between its beginning and ending, laid out on a graph and is free to repeat as many times as one could trace a circle over itself. Following a sine curve to 360°, however, could only stand for following Winterson's cycle to completion if I were to maintain the stance that *The PowerBook* returns to the same point at which *Oranges Are Not the Only Fruit* begins.

I am unable to force Winterson to follow the strict curve of the sine, as she herself has written, "When a writer has made her chisel and learned how to use it, it is tempting to go on using it in a way that was once exhilarating but which has become comfortable."
To continue to do new work is to continue a development of style that allows the writer to surprise herself" \textit{(Art Objects 182)}. Valuing evolution and innovation, Winterson did not write a circular cycle of fiction. Keeping the role the sciences have in Winterson’s novels in mind, I have found chaos theory to be an appropriate correlation between her work and science. It is only within the realm of the science of complex structures that I can find a fitting illustration of Winterson’s artistic cycle. Within the realms of postmodernism, meta-fiction and lyric prose, Winterson has written seven novels; within the realm of chaos theory, nonlinear geometry has given us the fractal.

This visual representation of a fractal equation is one derivation from the Julia set, which shares a common formula with the Mandelbrot set for generating fractals. This equation is $Z_{n+1} = Z_n^2 + C$, and it can be manipulated a number of different ways. The fractal image generated varies depending on the point of origin and the quantities assigned to variables. A fractal turns in on itself, repeating with a difference, through iteration: \textit{“To iterate a function means to use the output of one calculation as input for the next, each time performing the operation called for by the function”} \textit{(Hayles Chaos Bound 153)}. My choice of this specific representation of a Julia set is not as important as the fundamental
concept that it illustrates. There is a swirling, turning in of many fractal images that represents the cycle of Winterson’s fiction.

If you could “zoom in” on a fractal image, you would observe that there are repeating elements at play in the image. Essentially, you would zoom in on more of the same—but with a difference. The equation is not exactly self-replicating, even as it turns in on itself and creates cycles of similar figures. Below is another fractal generated from a Julia set.

It illustrates the spatial dimension of fractal geometry. Following one crest of a wave, this picture follows the continuous, spiraling mini-wave crests projected forward into space. If one were to pick a single crest shown and follow it, that crest would also spiral forward, with crests branching off and spiraling through space.

Inter-/ Textual Play

Just like the repeating figures of fractals, Winterson’s texts are both intra- and inter-related; there are repeating elements—stories, images, phrases—within each text and from one to the next. Winterson is often self-referential, and what she repeats often sheds light on a literary understanding of chaos theory. In *Oranges Are Not the Only*
Fruit, Winterson’s Whitbred Prize-winning first novel, the young character Jeanette philosophizes on the nature of her life within the continuum of time:

I have a theory that every time you make an important choice, the part of you left behind continues the other life you could have had. [...] There’s a chance that I’m not here at all, that all the parts of me, running along all the choices I did and didn’t make, for a moment brush against each other.

Jeanette’s statement recalls Jorge Luis Borges’ story “The Garden of Forking Paths,” in which the characters discuss temporality and spatiality, when in time and where in space what realities exist.

As Borges’ story asserts the simultaneous existence of mirrored but differing lives of each person, simultaneity and replication are found on the different planes of a fractal. Practically, one can say that, while Newtonian physics and linear geometry have dominated our understanding of the world for hundreds of years, the principals of chaos theory have always been in play; they have always operated—and on a much greater scale, found among more systems in the world—in nature. In his essay on “Borges’ s Garden of Chaos Dynamics,” Thomas P. Weissert states, “Borges anticipates the two essential characteristics of [our contemporary understanding of] natural systems—i.e., the frequent occurrence of random splittings in a system’s dynamic flow and the inexorable nonlinearity of nature” (237). Of course, we often experience only one plane at a time, of the many possibilities we have for each experience. In both life experience and academic endeavor, this is largely for brevity’s sake. As Hayles explains in Chaos Bound, “[N]onlinearity is everywhere in nature and consequently in mathematical models.
Despite its prevalence, it has been ignored for good reason: except in a few special cases, nonlinear differential equations do not have explicit solutions. (163). The random, dynamic nature of natural systems requires sophisticated modes of interpretation. As Jeanette Winterson states in the title essay from Art Objects, “Every day, in countless ways, you and I convince ourselves about ourselves” (15). The work we currently do is to mask the multiplicities of our lives; the linear nature that we encounter is part of an imposed encounter. We must work to tell ourselves—rather, be in a cultural milieu that works to assert it—that there is but one reality at a time. This work is different from what we would do if we were to see our lives as nonlinear differential equations.

Winterson argues tenaciously that a life lived among many realities which mirror each other, repeat, diverge and even contradict each other, can be one of beauty and worth. One of the trivial but satisfying beauties of fractals is their quasi-symmetric imagery. They have even become popular poster designs. There is something appealing or beautiful about a fractal, which is generated not only from an artist’s imagination but also through a filter of very complex mathematical equations. The creation of these images can seem like magic to the layperson. Likewise, Winterson’s novels, in their form and in the tales she tells, there is an aspect of the magical.

Mirroring Western math and science, Winterson’s work begins rooted in religion. The relationship between Winterson herself and the Jeanette character narrating Oranges is biographical: both were adopted by Pentecostal evangelists and told they were to become great missionaries. Both ran away from home at a young age, coming of age through rejection of the Church and in lesbian relationships. Of course, Jeanette is a fiction, a fact that has many readers and critics frustrated with Winterson as a reliable
author. Winterson seems not to mind; in fact, it’s the point. In Written on the Body, she writes, “I can tell by now that you are wondering whether I can be trusted as a narrator” (24). On her official website, jeanettewinterson.com, Winterson answers frequently asked questions about her work. Under Oranges, she has written:

Is it autobiographical?

Yes and no. All writers draw on their experience but experience isn’t what makes a good book. [...] Oranges is written in the first person, it’s direct and uninhibited, but it isn’t autobiography in the real sense.

Elsewhere, in Art & Lies, Winterson writes, “There’s no such thing as autobiography, there’s only art and lies” (141). The possibilities inherent in that statement fall into place when considering that Winterson’s life may be the story Jeanette could have lived, one off the split-off paths Jeanette could have followed.

Although both Winterson and her young Jeanette left the Church, its teachings were etched onto them: Jeanette’s story is told in eight chapters, named after the first eight books of the Bible. The Bible itself is a point of interest in Winterson’s work, especially her early writing. Boating for Beginners, a “comic book”—short novel illustrated with woodcuts—written for cash and entertainment at the beginning of her career, is a retelling of the Genesis story in which Winterson reveals the power she feels in the Bible and all fantastic tales:

Just as a point of interest: the Bible is probably the most anti-linear text we possess, which is why it’s such a joy. People have believed for centuries,
on the authority of the book of Genesis, that there was once a deluge over the whole world. [...] This may or may not be true; what remains true is the potency of the myth. Myths hook and bind the mind because at the same time they set the mind free: they explain the universe while allowing the universe to go on being unexplained; and we seem to need this even now, in our twentieth-century grandeur. (65-66)

These words echo a similar passage in Oranges: “...that is the way with stories; we make them what we will. It’s a way of explaining the universe while leaving the universe unexplained” (93). Winterson’s assessment of biblical faith and of the stories we tell sounds like a possible theoretical understanding of scientific faith and storytelling, for as we make discoveries and find new ways of ordering the world, we have yet to figure out why the world works within its multiple realities in any of the ways we can say it does.

Throughout the myths, legends and fairy tales figuring heavily throughout Winterson’s texts, there is little distinction made between the stories’ origins. These biblical, scientific, historical and fictional stories coexist in equality, each mode respected for its own way of telling the tale. In Written on the Body, Winterson uses the language of a medical guide to speak of a lover’s body sick with a rare form of leukemia. In So Far, So Linear: Responses to the Work of Jeanette Winterson, Christopher Pressler describes Written on the Body as “a meditation on the mathematics and calligraphy of the lover’s body. It is concerned with making precise the most fleeting emotions of one person’s feelings for another... [It] is a piece of research, a thesis with the aim to discover how art, aesthetics and obsession can be described in the language of medicine” (33). Entering
quantitative and qualitative input, Winterson opens *Written on the Body* with a question she returns to throughout the text: “Why is the measure of love Joss?” (9). In the clash between art and science, Winterson asks a question relevant to lived experience. Winterson’s turn of jargon taps into unlikely possibilities for understanding art, aesthetics and obsession. Because Winterson combines these with medicine, this story must be played out on a sick body, the only kind of body that puts one into the hands of medicine.

The cells, tissues, systems and cavities of the body, the skin, skeleton and special senses (ear, nose, tongue and eye) are described from a physiological perspective and cast on Louise’s body in a distinct chapter of *Written on the Body* (115-139). In a strangely beautiful and erotic move to try to understand the sick, beloved body, the narrating character tries to reconcile two conflicting notions of that body; the first is romantic, familiar language, while the second is seemingly sterile but intimate medical language. Alternating between the two until they are inextricably intertwined, Winterson’s argument is that both are accurate:

In the secret places of her thymus gland Louise is making too much of herself. Her faithful biology depends on regulation but the white T-cells have turned bandit. They don’t obey the rules. They are swarming into the bloodstream, overturning the quiet order of spleen and intestine. [...] They were her immunity, her certainty against infection. Now they are enemies on the inside. The security forces have rebelled. Louise is the victim of a coup.
Will you let me crawl inside you, stand guard over you, trap them as they come at you? (115)

The narrator identifies this mixing of languages as a “love-poem to Louise,” mixing clinical language with that of intimacy (111).

Winterson’s exploration of technical language is not restricted to Gray’s *Anatomy*. Trying to find a suitable way to describe the relationship with Louise, the narrator reflects on knots: “The interesting thing about a knot is its formal complexity. Even the simplest pedigree knot, the trefoil, with its three roughly symmetrical lobes, has mathematical as well as artistic beauty” (87). Winterson’s nameless, genderless character continues, stating, “[T]he challenge of the knot lies in the rules of its surprises. Knots can change but they must be well-behaved.” The requirements for scientific beauty lie in simplicity, and the narrator relishes the formal qualities of the relationship: “Louise and I were held by a single loop of love. The cord passing round our bodies had no sharp twists or sinister turns. Our wrists were not tied and there was no noose about our necks” (88).

When the narrator is jolted out of romantic bliss into the reality of Louise’s cancer, turning to medical love-poetry offers only temporary consolation.

After the “body chapter” in *Written on the Body*, the narrator reaches a point of desperation, finding that even exacting language about Louise’s rare leukemia cannot explain the fact that the beloved is dying. Winterson returns to very simple understandings of the love-relationship because the technical language has already broken down. Reality—the world that exists around the narrator’s circumstances vis-à-vis Louise—itself also quickly disintegrates:
Don’t you think it’s strange that life, described as so rich and full, a camel-trail of adventure, should shrink to this coin-sized world? A head on one side, a story on the other. Someone you loved and what happened. That’s all there is when you dig in your pockets. The most significant thing is someone else’s face. (189)

The narrator continues, “What can I do? It’s the clichés that cause the trouble.” Indeed, these troubling clichés are present throughout Written on the Body. Winterson explores arithmetical, medical and romantic understandings of her narrator’s position. The story dissolves into the fantastic. Louise, who should be either on her deathbed or already buried by the end of the novel, returns in the final passage:

Am I stark mad? She’s warm.

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 the 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. (190)

The utter draw of this passage is that, for all its fantasy, its complete ridiculousness, its total remove from reality, it has a strange quality of veracity. While the multiple planes of
simultaneous existence discussed above render any use of the word “reality” suspect, I cannot deny the possibility that, no matter where the reality of Louise’s return, the literal meaning of the entire, actual world being bundled up in one room, resides, this is the reality, of the many that exist, that matters.

Readers who believe that her work is too fanciful, too lyric, rooted too far from realism to be seriously read attack Winterson for not tackling “realistic issues.” For these critics, her hardest work to grasp is Art & Lies. The structure of this work can be seen as a way of following a fractal loop backwards; as the book moves forward, the voices of three divergent characters eventually unite on a train that is speeding out of a future London, a London situated in a heavily State-controlled England. This multi-vocal text is told by “three voices and a bawd”: Handel, perhaps loosely based on the composer, is presented as an ex-castrato-turned-doctor (also a “handle” for the reader to hold onto as the character who keeps the narrative together); Picasso, a self-named young woman who turns to art after years of abuse by her family; and Sappho, Greek poet in 660 BCE and now. Winterson’s bawd is Doll Sneerpiece, an eighteenth century whore.

As with each novel, Winterson manipulates time. Although this is one of her longest works, the plot takes place within a single day. Art & Lies ends with nine pages of “The Trio” from Der Rosenkavalier by Richard Strauss. The many excesses of Art & Lies are difficult to grasp for a reader searching for a “novel” in the midst of this text. Although Christopher Pressler argues for exaggeration to be critically noticed and valued throughout his analyses of Winterson texts, calling it “an underrated virtue” (33), there
are certain scientific excesses that Winterson herself does not value, and they are harshly critiqued in *Art & Lies*.

The character I would like to examine in relationship to science is Handel, who, at the time of telling his stories in *Art & Lies*, has left the medical profession. Handel’s position mirrors that of a doctor who the narrator of *Written on the Body* encounters when spending time in a cancer ward to see what Louise’s life might by like: “It’s the late twentieth century and what are the tools of our trade? Knives, saws, needles and chemicals” (150). Handel, too, has been disenchanted by the promises the medical profession has offered, musing, “I will admit that we have better scientists, if by better, we agree that they are more sophisticated, more specialised, that they have discovered more than their dead colleagues” (107). The irony is that even the doctors of *Art & Lies* are still dependant on the fundamental tools found in *Written on the Body*, no matter how sophisticated they have been made.

As Handel remembers his move from altar boy to doctor to man on the edge of exploring the future, he also reflects on his many assumptions as a doctor. This profession left Handel in a knowledge-based position, he being the one “to know” the patient’s body and the one “to fix” what is wrong with that body. His final patient was a woman with breast cancer: “When I operate my hands are cold. The woman’s breast is warm. […] I try to make the cut as small as possible” (112). In his hectic doctor’s schedule, Handel must perform many complicated tasks during “eighty hour shifts,” taking each patient’s life and death into account. What drove Handel from medicine?

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.

Of course there has been an inquiry. The lady in question is still recovering from her second operation, this time to remove the right breast (in fact the left). I should not have performed the operation at all, it was an emergency... there was no-one else, I am the best in my field. (123)

Irony circles back on Handel, for not only was he an unknowing medical professional, the woman whose surgery drove Handel from his job was “a tart,” someone he need not fear in a malpractice suit.

Winterson’s sometimes didactic voice shines through Handel’s guilty thoughts, his sometimes pitiful, circular attempts to console himself—to the point that his own are society’s shortcomings. Even the good work he could do in his noble profession cannot console Handel:

I feel sorry and I force myself to use what skills and position I have to ameliorate what I can. But I can’t forgive the squalor of it all. I can’t accept that better food, better education, better hours, better days, whatever those things mean to the fervent, would make any difference. Most of my acquaintances are well-fed, well educated, like their work and have leisure. I would rather spend an evening with a dripping tap. (125)
Handel’s decision to leave London and medicine land him squarely in a train car with Sappho and Picasso. While Handel was unable to ever connect with any of his colleagues or peers, his voice unites with the voices of his companions in the final narrative section of the novel. Their lives left behind, these three are left to only sensory appeals: “They sat together the three, Handel, Picasso, Sappho, sat together under the yellow rain. The sun, that had packed its things against the storm, had left behind a yellow cloth… Black sea yellow rain” (204). Under the shelter of the rain, the three voices blur and flow together, on a high-speed train of the future:

**HANDEL:** That which is lost is found.

**SAPPHO:** ‘What are the unreal things but the passions that once burned like a fire? What are the incredible things but the things that one has faithfully believed? What are the improbable things but the things that one has done oneself?’

**HANDEL:** Is it too late?

**PICASSO:** Not too late.

**SAPPHO:** The word returns in love.

[...]

It was not too late. (205-206).
Winterson leaves no room for interpretation; after le fin, there are still the nine pages of opera. She makes her case that it is not too late to turn from a cold, methodical, linear, constrained understanding of the world. It is not too late for these characters to travel from a future we cannot fully imagine to someplace in time and space which is different from both where they are and who they are. As Jean Baudrillard states in “The Precession of Simulacra” from Simulacra and Simulation, “[I]t is no longer a question of either maps or territories. Something has disappeared: the sovereign difference, between one and the other, that constituted the charm of abstraction” (632). That abstraction is the difference between inner and outer, self and other, Winterson’s three escape. When these compartmentalizing barriers are removed, it is not too late, and “the word,” with all of its biblical and magical connotations, returns in love, openness, empathy.

Turning to two of Winterson’s earlier works, The Passion and Sexing the Cherry, I would like to explore a space where the three voices of Art & Lies may be headed. Ironically, this movement is backwards, both in the novels’ settings and in the chronology of Winterson’s career. The Passion is set in an “invented” historic space, but the character Henri is a young Frenchman who is sent to fight in the Napoleonic wars. In the space of the text, Winterson follows Napoleon all the way to Russia, returns to France to Henri’s home, and finally arrives in Venice, a city of ever-changing geography (not necessarily in that order). Likewise, Sexing the Cherry is located in seventeenth century London, another time and place where Winterson finds space to play. Although we can pinpoint when the first pineapple was brought to England by John Tradescant, the beheading of Charles the First, and various Puritan antics, we cannot be sure of what caused London to burn mid-century. In both novels, spatial and temporal setting provide
seriously playful, uncanny and sardonic backdrops for action and function as contrasts for the nonlinear elements of Winterson's fiction.

The magical element shared by The Passion and Sexing the Cherry is that, through the twists and turns of realistic and fantastic narrative, the fantastic carries more meaning than the realistic. Returning to Baudrillard, Winterson's fantasies are played out in a reality that is not necessarily abstracted from our common conception of lived experience: "Simulation is no longer that of a territory, a referential being, or a substance. It is the generation by models of a real without origin or reality: a hyperreal" (631). The historical space Winterson invents in which Henri and friends march with Napoleon across Europe is just like the physical space in which Venice is constantly moving:

This is the city of mazes. You may set off from the same place to do the same place every day and never go by the same route. If you do so, it will be by mistake... Your confident instructions to passers-by will send them to squares they have never heard of, over canals not listed in the notes... there is no such thing as straight ahead. (49)

This Venice is not "based on" the place we know in Italy so much as a parallel Venice, one which may very well exist on another plane of reality, a city where boatmen have webbed feet, where there is a nightly carnival and masquerade. While the reality of Napoleon's campaign—the bitter retreat from Russia, etc.—is unquestionable, there are details that cannot be known for sure.
Through the character Villanelle, who laments that her heart has literally been stolen by another woman, Winterson plants the question she wants her readers to be asking: "How is it that one day life is orderly and you are content, a little cynical perhaps but on the whole just so, and then without warning you find the solid floor is a trapdoor and you are now in another place whose geography is uncertain and whose customs are strange?" (68). Winterson uses her novels as the pull-cord for opening a trap door, sending readers falling head over heels through her world. *The Passion* is a space in which we can see life, far off, on distant planes of existence. Patrick, one of Henri’s friends from the military, is “a de-frocked priest with [an] eagle eye” (21). Patrick can see for miles, can see what may lie impossibly far ahead of Napoleon’s army. Winterson’s work is a telescope to see other waves of the fractal, a transporter to put us on alternative paths.

So it is that Winterson sets *The Passion* in a Venice that is a “living city.” Villanelle gives Henri an ironic tour after they have arrived: “[T]hen you won’t go missing again” (113). Villanelle stresses the importance of acknowledging the city’s inevitable transformations. Venice is a city of many cities, of secret and disappearing and unmapped cities. This Venice is itself is another kind of existence:

This city enfolds upon itself. Canals hide other canals, alleyways cross and criss-cross so that you will not know which is which until you have lived here all your life. Even when you have mastered the squares and you can pass from the Rialto to the Ghetto and out to the lagoon with confidence, there will still be places you can never find and if you do find them you
may never see St. Mark’s again. Leave plenty of time in your doings and be prepared to go another way, to do something not planned if that is where the streets lead you. (113)

The text, then, becomes Venice. Venice is untrustworthy; it’s risky. But, as Winterson repeats throughout the text, “What you risk reveals what you value.” Venice must be trusted and followed and allowed to lead you to an unexpected place at an unexpected time where there are things to do you hadn’t planned on. Winterson values the adventures, the stories. Winterson leads us through Russia, France and Italy to this Venice, all the while repeating, “I’m telling you stories. Trust me.” *The Passion* is in part a narrative written/remembered by Henri, who is writing and remembering from his room at San Servelo, Venice’s own madhouse. Henri oscillates between complete lucidity and ravaging madness, yelling at the voices he hears. *The Passion* is also told by Villanelle, who composes as she goes, wandering off on tangents as she loses herself in the waterways. Like Winterson herself, both of these narrators tell stories, demurely demanding that we believe them. This echoes a story related by the anonymously gendered narrator of *Written on the Body*:

She said, “Don’t you know that Renoir claimed he painted with his penis?”

“Don’t worry,” I said. “He did. When he died they found nothing between his balls but an old brush.”

“You’re making it up.”
The next question, il-/logically, is "Does it matter?" If the answer is "no," then welcome to the realm of Baudrillard's hyperreal. This reality without a referent is one in which we can learn truths of a different kind. While a coroner would have great interest in disputing Renoir's genital state at death, someone interested in his art or in feminist issues cares much more for this story than for an official coroner's report. Because Winterson is telling us stories, we can trust her, for we learn ways of living through stories.

Winterson writes in *The PowerBook*, "To use time fully I use it vertically. One life is not enough" (247). Like Sappho and the rest in *Art & Lies*, Winterson's Jordan and Dog Woman in *Sexing the Cherry* exist in multiple lifetimes. The majority of the narrative takes place in the mid-1600s in London, with stints in places like a fairy tale land, in biological, atomic and metaphysical discourse, and in an environmentally endangered West in 1990. Of course, these settings intersect from the very beginning: "My name is Jordan. This is the first thing I saw," and as the narrative continues, "Every journey conceals another journey within its lines: the path not taken and the forgotten angle. These are the 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" (1-2). Winterson believes journeys, stories, can be re-membered, pulled out of imaginary space and made apparent. Jordan discovers another life of his own, noticing, "Occasionally, in company, someone would snap their fingers in front of my face and ask, 'Where are you?' For a long time I had no idea, but gradually I began to find evidence of the other life and gradually it appeared before me" (3). Jordan finds evidence of this life in a whirlwind romance for
sea travel and for a dancer he sees once in the night, who 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” (61). What or who could this dancer, named Fortunata, be?

While trying to find out the truth about her, Jordan encounters beggars and sages whose information helps him on his search. One relates a list of lies:

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 is not.

LIES 4: We can only be in one place at a time.

LIES 5: Any proposition that contains the word ‘finite’ (the world, the universe, experience, ourselves...)

LIES 6: Reality as something which can be agreed upon.

LIES 7: Reality as truth.

Another—presumably new version of Jordan—humbly expounds upon “The Nature of Time.” This exploration turns explicitly to human experience of time:

Until now religion has described it better than science, but now physics and metaphysics appear to be saying the same thing. The world is flat and round, is it not? ...And so we cannot move back and forth in time, but we
can experience it in a different way. If all time is eternally present, there is no reason why we should not step out of one reality into another. (99-100)

*Sexing the Cherry* offers alternative realities to the one we immediately experience.

Winterson again begins with religion but moves immediately to science for a language to discuss what the alternatives are.

What Winterson finds in scientific language is a motif repeated throughout *Sexing the Cherry* and again in *GUT Symmetries*. *Sexing the Cherry* opens with two inscriptions: the first speaks of the Hopi Indian tribe, whose language has no tense; and the second states, “Matter, that thing the most solid and well-known, which you are holding in your hand 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?” “Empty space and points of light” are recurrently invoked as the beauty and the humbleness of human existence throughout the text. While looking at ‘A Hunt in a Forest,’ Jordan reflects on the use of foreground and background in the painting, incorporating elements of both multiplicity and the repeated phrase:

My own life is like this, or, should I say, my own lives. 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. (102)

Winterson again works as artistic understanding and use of science—this time, atomic—into her narrative.
When the narrative exists in time after “empty space and points of light” have become common knowledge (1990), Jordan and Dog Woman meet each other again, and through that meeting, meet their seventeenth century selves. The meetings dissolve into a return to a London of the past, the one that goes up in flames. The two escape, and Jordan’s reflections on the city close the book. Speaking of London as the city he hates to leave, for he knows it well, Jordan understands that he cannot actually depart:

But the city is a fake. The future and the present and the past exist only in our minds, and from a distance the borders of each shrink and fade like the borders of hostile countries seen from a city floating in the sky. The river runs from one country to the other without stopping. And even the most solid of things and the most real, are only hand-shadows on the wall.

Empty space and points of light. (167)

Winterson continues this rhetoric in *GUT Symmetries*. Setting up a marriage of medieval and seventeenth-century cosmologies with the scientific beliefs of the late twentieth century, Winterson introduces the human body into the new household:

Paracelsus was a student of Correspondences: “As above, so below.” The zodiac in the sky is imprinted on the body. “The galaxa goes through the belly.”

What is it that you contain?
The Dead. Time. Light patterns of millennia. The expanding universe
opening in your guy. Are your twenty-three feet of intestines loaded with
stars? (2)

In his short analysis of *GUT Symmetries*, Christopher Pressler opens his discussion
writing, “GUT means Grand Unified Theory. The almost spiritual belief of theoretical
physicists that beneath all the complex physical laws of the universe, there lies a
fundamental law. Winterson holds a similar belief…” (49). Winterson’s attraction to
physics, her use of physics and other sciences in her work closely mirrors her use of
religion. She uses the same language to speak of them.

In *GUT Symmetries*, Winterson explicitly returns not only to physics and
Christianity but explores the histories that have built these institutions. Stella is half
Jewish. Jove, her husband, is a physicist. Alice, who they both have an affair with, is also
a physicist. Stella’s childhood was spent learning about her father’s religion, particularly
observing the secret ceremonies of the Kabbalah. Stella also learned the basic teachings
in the Torah, and in her life with Jove and then with Alice, they are related back to a
physic understanding of the world: “In the Torah, the Hebrew ‘to know’, often used in a
sexual context, is not about facts but about connections” (82-83). Winterson traces
connections between science and religion back to early Greek history, through Heraclitus
and his rival Parmenides in the 5th century BCE, who disagreed about the nature of the
world, whether it was in a state of eternal flux and Becoming or in an immutable state of
Being. Winterson works through Aristotle, whose binary cosmology of spirit and matter
was eventually taken up and defended by the Church, to Sir Isaac Newton, whose
seventeenth century Mechanics of absolute space and time remained unquestioned until the twentieth century. Winterson's history of philosophy and science ends with Albert Einstein's 1905 essay, "Special Theory of Relativity," from whence began the study of quantum physics (10-11). Scientific research post-relativity theory, the theory that any collected "empirical" data is relative to the position of the observer, enables and enriches the spiral, self-reflexive play Winterson has used to structure each of her novels.

Winterson's writing flourishes under the dual influences of religion and science. Using the Hebrew definition of knowledge as connections, Winterson launches from the Torah to science, resulting in what could be read as an analysis of her own writing:

Knowledge, not as accumulation but as charge and discharge. A release of energy from one site to another. Instead of a hoard of certainties, bug-collected, to make me fell secure, I can give up on taxonomy and invite myself to the dance: the patterns, rhythms, multiplicities, paradoxes, shifts, cross-currents, irregularities, irrationalities, geniuses, joints, pivots, worked over time, and through time, to find the lines of thought that still transmit. (83)

Winterson rejects the compulsory use of science for its own progress, and this understanding of information allows her to use scientific data for her own literary interests. According to the research, the "dance" of information Winterson refers to is similar to the dance matter itself performs:
'If we ask whether the position of the electron remains the same we must say no. If we ask whether the electron's position changes with time, we must say no. If we ask whether the electron is at rest we must say no. If we ask whether it is in motion we must say no. (Robert Oppenheimer)'

(82, 160-161)

Not only does Winterson cite Oppenheimer's observation about matter's tendency to exist, no matter where, she cites it twice, as the novel turns around itself. Here the electron plays the part of human emotions, experiencing simultaneous resolve and indecision. In “A New Way With Words?” Lyn Pykett states, “It is interesting to note... that Winterson's novels are peopled and narrated by storytellers whose stories have their origins in lack and desire” (54). Just as being unsure of the exact location or state of the electron does not make for “soft science,” Winterson argues throughout her body of work that being unsure of the location or state of one's passion does not make for “soft fiction.”

Winterson exacts hard punishment, in fact, on the character Jove, who fails to make the connection between scientific theory and life. Jove states, “Matter is energy. Of course. But for all practical purposes matter is matter. Don't take my word for it. Bang your head against a brick wall” (191). He continues, explicitly denying that Stella's “wishful thinking” and “mystical disposition”—which some of his colleagues “sadly share”—has validity in day-to-day reality: “The shifting multiple realities of quantum physics are real enough but not at a level where they affect our lives... In some parallel universe somewhere near here I may never have to wash my underpants, but until then, no mystical union with the One will muffle the stink” (191-192). Jove, who is cold
enough to refute these connections, tries to break the love triangle he, his wife and their mistress have created. Of course, for his lack of vision, Winterson outs him. Alice, the physicist who can apply her professional work to her personal life, has the chance to live a life with Stella.

Turning from the cutting edge of physics to that of interpersonal communication, Winterson explores the possibilities for human relations in cyberspace in her latest novel, *The PowerBook*. Like the biblical structure used in *Oranges*, Winterson uses personal computer jargon to structure *The PowerBook*. Interspersed with “literary” chapter titles like “great and ruinous lovers” and “blame my parents” are “OPEN HARD DRIVE,” “EMPTY TRASH,” “HELP” and “SAVE.” Winterson also uses the highly structured binary logic that runs a computer as a contrast to the numerous, limitless possibilities presented by a blank page in Word or a night of exploring the internet:

I typed in your address. Nothing. I set one of the search engines to find you. Nothing...

What did I expect? This is a virtual world. This is a world inventing itself. Daily, new landmasses from and then submerge. New continents of thought break off from the mainland. Some benefit from a trade wind, some sink without trace. Others are like Atlantis—fabulous, talked about, but never found. (73)

*The PowerBook* is Winterson’s last in this artistic cycle, and it recursively curls through many of the same planes that other novels have crossed, simultaneously pushing forward through time/space. Like *Oranges*, it is a coming-of-age novel, albeit a self-conscious one from the beginning: the narrator Ali/x opens, saying, “To avoid discovery I stay on
the run. To discover things for myself I stay on the run” (3). She lures others and is lured by one idea: “Freedom, just for one night” (italics in original) (3). This freedom—complete freedom—is the freedom Winterson’s heroes have been searching for since young Jeanette appeared in Oranges Are Not the Only Fruit.

Ali (sometimes Alix, because the virtual world is genderless) is a “language costumier (e-writer) who will post a made-to-order story for anyone who asks, set in any time, any place, making anyone the hero of his or her own story. Winterson has given readers a sense of interactive choice regarding “when” and “where” these stories will take place. Winterson’s use of the limitless possibilities posed by Ali’s business or hypertext fiction is a small pocket of potential set in a physical book that is inevitably not exactly reader-written. As Ali informs a customer, “You say you want to be transformed,” but there is obvious anxiety: “It’s only a story, you say. So, it is, and the rest of life with it—creation story, love story, horror, crime, the strange story of you and I” (4). As relationships between Ali and reader becomes more complicated, the cyber-story is rewritten in order to get more specific, to try to get it right. This is possible thanks to the computer’s “delete” and “new document” tools, although Ali often underestimates these possibilities: “What is it that I have to keep telling myself again and again? That there is always a new beginning, a different end. I can change the story. I am the story” (5). Ali’s consciousness of her own creative power is much like Jeanette’s in late Oranges or Picasso and Sappho’s in Art & Lies. Christened Sophia, Picasso renames herself and literally repaints her identity: “I painted my legs with dangerous yellow chevrons and bathed my heels in mercury... I circled my buttocks with gold rings and gave my navel its own blue diamond. Thinking of your Victory hat I dyed my hair purple” (45). Just like
an online identity, Picasso's painted self is unstable, for it will physically wash off, even as it leaves a permanent mark on Picasso. Much like matter existing in space, this imagination of identity has a tendency to exist.

Winterson's flights of fancy sail through cyberspace at the speed of information. Ali writes new stories for her reader, they circle from tulip bulbs in 1591, sailing from Turkey to the Netherlands, lovers meeting in a timeless Paris, again in contemporary Capri and, physically, in modern London. These stories of what could have already happened merge with Ali and the reader's lives—that which is lived in "meatspace" rather than cyberspace. The freedom Ali searches to write towards is part of a greater search Winterson seems to be on as she has written her novels: "I'm looking for something, it's true. I'm looking for the meaning inside the data" (74). Through the writings and rewritings, through all the multiplicities of possibilities, the ever-flowing, lulling river of information, Ali—and, by extension, all postmodern/cyborg subjects need to step back:

Stop.

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. (62-63)

Winterson demands that the reader to take a moment, to read more slowly, to find the meaning inside the data. Just as Ali tries over and again to write the freedom her reader seeks, Winterson has written metaphysic and physic freedom for her readers throughout this cycle of her fiction.

Conclusions (One tendril of possibilities)

From the beginning of her career, Jeanette Winterson has found both praise and criticism for her similarity to High Modernists such as T.S. Eliot, James Joyce and, particularly, Virginia Woolf. The majority of critical work on Winterson's fiction focuses on her as a lesbian, feminist and/or lyrical prose writer. These elements are central to Winterson's work and contribute to her status as a contemporary writer worthy of serious study. Throughout *Art Objects*, Winterson intermittently theorizes writing itself and discusses of her own work in novels. She, too is intent on comparisons between herself and Woolf, to defend the Modernist project—which, for Winterson, includes postmodernism—and speak of the arts as a forum for social debate. (In characteristic
Winterson style, this debate often consists of social critiques that argue ruthlessly to forward her own interests.) In “A Work of My Own,” Winterson states,

Modernism has happened and it was the mainstream. It is no use looking for the new George Eliot... [or] the new Virginia Woolf either. We can only look for writers who know what tradition is, who understand Modernism within that tradition, and who are committed to a fresh development of language and to new forms of writing. (177)

Yet, I cannot believe that Winterson’s use of contemporary science as both structure and subject for novels is singularly part of a commitment to “a fresh development of language.” I think Winterson is using a new language, new metaphors that make her writing fundamentally different from those in the tradition from which Winterson is writing.

Like an iterated equation for a Julia set, Winterson began her career with the data generated by her predecessors, necessarily using that information to create a new spiral extending from the fractal of literature behind/before hers. C.P. Snow’s scientists may argue, “To what end, is this spiraling out?” At the moment, however, those scientists are working just as diligently as writers to find what ending they shall write using chaos theory. Winterson writes in The PowerBook,

In quantum reality there are millions of possible worlds, unactualised, potential, perhaps bearing in on us, but only reachable by worm-holes we can never find. If we do find one, we don’t come back.

In those other worlds events may track our own, but the ending will be different. Sometimes we need a different ending. (63)
The stakes for both arts and sciences are indeed high, and the paths postmodern scientists and artists tread are not necessarily singular. Positing one's work as one's passion, Winterson may describe it, saying, "it is easier to track a barnacle goose than to follow the trajectories of the heart" (*Sexing the Cherry* 37). The endings Winterson and chaos theorists envision need not be eyed too wearily, for Winterson continues, "it isn't ended yet... you could rewrite the story..." (155). The story is rewritten, each time a new discovery is made or a new fiction cycle is completed.
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