Article

Authenticity and Atwood's 'Scientific Turn'

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Abstract: Margaret Atwood's science/speculative dystopian MaddAddam trilogy—*Oryx and Crake* (2003), *The Year of the Flood* (2009), and *MaddAddam* (2013)—opens up questions about how genre-mixing indexes and probes interrelated notions of authenticity. This focus is prompted by the simple question of why Atwood, having established worldwide renown for realist novels of socio-historical authenticity, switched to blending realism with science/speculative fiction. Through analyzing how the trilogy departs from realism, while never truly embracing SF, the paper argues that while the realist novel may offer the strongest representations of authentic psychological states, larger questions of epistemic authority and the state of our world demand a literature that authenticates knowledge. The MaddAddam trilogy challenges the notion that realism's social, existential and moral concerns are more authentic when supported with a scientific explanatory logic. Authenticity is thus found in a negotiation between Truth and whether to trust in the locations (social and geographical, literary and literal) of knowledge.

Keywords: genre; ethics; trust; authority; science; knowledge; fact vs. fiction; referentiality

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1. Introduction

Though known for the science/speculative dystopian MaddAddam trilogy—*Oryx and Crake* (2003), *The Year of the Flood* (2009), and *MaddAddam* (2013)—and the dystopian novels *The Handmaid's Tale* (1985) and *The Testaments* (2019), Margaret Atwood has made it abundantly clear that, as far as she is concerned, she does not write science fiction. SF is about "things that could not possibly happen"; instead, she writes speculative fiction, which is about "things that really could happen but just hadn't completely happened when the authors wrote the books" (Atwood 2011, p. 6). For that matter, she does not write dystopias, but "ustopias", a coinage mixing utopia and dystopia that reflects how "each contains a latent version of the other" (Atwood 2011, p. 66). Atwood is not being coy with these pronouncements: she really believes sci-fi is a debased genre, lacking whatever is needed to produce literary authenticity. As she writes, "Anyone who has spent much time contemplating this kind of literature will realize pretty soon that these books [she is referring specifically to 20th century American sci-fi] do not exist within the world of the novel proper" (Atwood 2004, p. 514), by which she means prose fiction stretching from the late 18th century to the present. For Atwood, realism is the representative prose fiction form because of its ability to meet readers' expectations of psychological plausibility and realistic surroundings (Atwood 2004, p. 515). Referential weakness undermines the work that a solidly realistic novel can do in (1) countering the social and cultural polarization caused by techno-media and its boosterism, and (2) fulfilling its artistic potential by representing human complexities and prognosticating future socio-cultural conditions.

This combination entails the sort of genre-mixing that constitutes the kind of novelistic authenticity I see in Atwood's turn to speculative fiction. It also answers the simple question that prompted this essay: why did Atwood, having established worldwide renown for realist novels of socio-historical authenticity,[1] switch to blending realism with science/speculative fiction? However, there is more to this answer—and to this question, for that matter, as surely there is some relation between the genre-shift and Atwood becoming

"arguably the most famous living literary novelist in the world" (Freeman 2022).[2] In this article I want to focus on how this genre-mixing indexes and probes interrelated notions of authenticity. Atwood rejects SF, nevertheless she turns to science: is this meant to rehabilitate the realist novel, and attendant anxieties about whether the form can achieve the representational and aesthetic authenticity required in a historical moment of environmental and climate instability? The realist novel may offer the strongest representations of authentic psychological states, but larger questions of epistemic authority and the state of our world demand a literature that authenticates knowledge.

2. Genres and Authenticity

Oryx and Crake, in an omniscient narrative that alternates between the post-apocalyptic present (our possible future) and flashbacks (our near future), tells the story of how protagonist Jimmy comes to be an unwitting accomplice in genocide. Jimmy befriends Crake (or Glenn, his birth name), a brilliant but emotionally empty visionary whose signature achievement is to unleash upon an unsuspecting world BlyssPluss, a pill that delivers health, happiness and sexual fulfillment but also mass sterilization and a genocide-inducing virus. Crake spares the life of Jimmy via an antidote to BlyssPluss so that he can publicize the pill, and eventually assist the Crakers, humanoids bioengineered by Crake to take over from humans, though minus all of the things Crake deems destructive—things like desire, jealousy, lust for power, and individuality.

The Year of the Flood and *MaddAddam* take up the struggles of Jimmy—or Snowman as he comes to be called—and the few surviving humans. The death of our world is the result of science without ethics and technology without boundaries. Its rebirth depends on how well humans can live with a posthuman species (the Crakers), their own traumatized bodies, and a return to pre-modern planting and harvesting rhythms, all of which draw on the present state of organic horticulture, genetic manipulation, zoology, and advanced digital technology.

Atwood is careful to note that prose fiction can include romances, which are distinct from novels, and scientific romances, of which H.G. Wells's *Time Machine* (1895) is a representative. She is also careful to note that while *The Handmaid's Tale* "is a classic dystopia", *Oryx and Crake* is not because despite its dystopian elements, the lack of "an overview of the structure of the society in it" leaves us with the same partial, mediated view of the world that the characters themselves experience (Atwood 2004, pp. 516–17). Thus, for Atwood, *Oryx and Crake* is "an adventure romance ... coupled with a Menippean satire" because of its mix of a quest story with intellectual obsession (Atwood 2004, p. 517).

Sven Birkerts (2003) is having none of it. Reviewing *Oryx and Crake* in *The New York Times*, he declares *Oryx and Crake* science fiction, like *Brave New World* (1932), in that it depicts scientific initiatives that have gone "awry". Curiously, he agrees with Atwood on the matter of genre: "I am going to stick my neck out and just say it: science fiction will never be Literature with a capital 'L', and this is because it inevitably proceeds from premise rather than character. It sacrifices moral and psychological nuance in favor of more conceptual matters, and elevates scenario over sensibility". While he says that the novel is "very readable", its main shortcoming is that "Atwood's inventive treatment of first and last things lacks ... a plausible psychological basis". The "many confected scenarios of future life" leave us craving "a complexity of character commensurate with the intelligence of the plot or the confident excellence of the writing". But it is not to be: "The characters' background stories feel somewhat arbitrarily assigned, and their actions are conditioned at every turn by the logic of the premise. Which brings me back to my problem with science fiction".

Birkerts is not entirely wrong. While Jimmy and Crake are individuated characters, with psychologies and inner worlds represented and dramatized, they lack the nuance and affect of the best of the realist novel (though this does improve in the trilogy's next two installments). However, Birkerts's criticism misses its mark. *Oryx and Crake* tests the boundaries of genre authenticity by taking advantage of what Charles Guignon calls a

lingering “Romantic impulse” which leads to the modern emphasis on the importance of individual expression, and a “breakdown of confidence in the existence of truth during the 19th century, and Freud’s challenge to the idea of the unified self” (Guignon 2004, p. 140). Atwood’s characters inhabit the cultural contradictions behind contemporary notions of the authentic self. They suggest, instead, a pre-modern Socratic cosmocentric self, which Guignon characterizes not “as self-encapsulated individuals with their own inner, personal being” but “as parts of a wider cosmic totality, placeholders in a cosmic web of relations in which what anything *is*—its *being* as an entity of a particular sort—is determined by its place and function within that wider whole” (Guignon 2004, p. 13). The “cosmic context embodies a set of ordering principles—an order of ‘ideas’—that determine both the reality of things and their value relative to the whole” (Guignon 2004, p. 13).

We see a negative example of this in Crake, particularly his Platonic view of personal idiosyncrasies, desires, and feelings as “negative traits” that inhibit the subject from fulfilling their ideal human functioning (Guignon 2004, p. 13). These traits are precisely what Crake wants to eradicate with BlyssPluss. The human propensity to make art, to take one example, is for Crake is a worthless source of amusement that “serves no biological purpose” as at its core it is nothing more than a deceptive mating dance (Atwood 2003, pp. 167–68). His reason for bio-engineering the Crakers to live sustainably with nature and peacefully with each other is to free them from conflicts arising from desire, particularly sexual desire, thus eliminating, in Crake’s words, “‘needless despair . . . caused by a series of biological mismatches”,’ therefore “‘no more sexual torment’” so “‘You’d never want someone you couldn’t have’” (Atwood 2003, p. 166).

The other characters serve as positive examples of characters relating to a set of ordering principles. Jimmy/Snowman, for instance, throughout the trilogy gradually realizes his place and function in a wider whole. In *Oryx and Crake* Jimmy’s teenage years are a parody of happiness and freedom centered on sex, consumption, and drugs. Student life at the Martha Graham Academy, a decrepit, underfunded bastardization of a liberal arts college, is a cycle of using and dumping women when things get serious—upon which he reflects “He really did love these women, sort of . . . It was just that he had a short attention span” (Atwood 2003, p. 191). However, it is Jimmy who kills Crake, after the latter murders their mutual love-interest Oryx. At the end of *Oryx and Crake*, realizing the horror of what Crake has done, Jimmy decides to take responsibility for the survival of the Crakers, acknowledging their interdependence: “Who else did they have? Who else did he have, for that matter?” (Atwood 2003, p. 350). In *MaddAddam*, when Jimmy’s injured foot becomes a near-fatal infection, he is treated by the God’s Gardeners with science-based herbal medicines. Later he is mobile enough to join the battle against the psychotic Painballers who threaten the lives of the remaining humans and the Crakers, though he accepts that his injury makes him vulnerable and expendable: “‘Sliding down the razor blade of life’” he says to Toby while hobbling into battle; she suggests he head back to safety, to which he replies “‘No fucking way’” (Atwood 2013, p. 349). He knows he is both indispensable due to his knowledge of the terrain of the battle, and that he will likely not survive. Inevitably, he is killed; later he is composted, completing his transformation from a self as center of experience and reality to one of a oneness and wholeness with nature.

The Year of the Flood offers perhaps the clearest example of this with the God’s Gardeners, a religious group that can be seen as Atwood’s program for an ethical, plausible, and necessary fusion of faith and science. The God’s Gardeners base their religious beliefs and lifestyle on the scientifically known, articulating the moral, ethical, and metaphysical meanings of these practices in terms of the spiritual oneness of all natural things. Adam One, their leader, affirms their primate ancestry against the opposition of “those who arrogantly persist in evolutionary denial” (Atwood 2009, p. 51). Humans were formed by God out of “the dust of the earth” which means “atoms and molecules”, and through “the long and complex process of Natural and Sexual Selection” (Atwood 2009, p. 52). Science, however, is but the means through which God initiates life on earth, thus their animism rejects Christianity’s human-centered theology—“We pray that we may not fall

into the error of pride by considering ourselves as exceptional, alone in all Creation in having souls" (Atwood 2009, p. 53). Instead, the God's Gardeners represent Christianity as a solipsistic mysticism that gave rise to the capitalist, consumerist modernity that results in environmental apocalypse: "Where were the scientific fools" asks Adam One, "when God laid the foundations of the Earth by interposing his own Spirit between one blob of matter and another, thus giving rise to forms? (Atwood 2009, p. 52). With the God's Gardeners, *The Year of the Flood* presents an authentic way of being human: living based on a scientifically sound closeness to nature, with a communal culture expressing a humble awareness that meaning transcends human understanding. In other words, throughout the trilogy all the characters are 'conditioned at every turn by the logic of the premise'—the premise being a forced return to a pre-modern, pre-Augustinian view of inwardness, one that fits with all the characters' (minus Crake) growing sense of reverence, "an awareness of the intricate interwovenness of all reality, the dependence of each person on something greater than him- or herself, the consequent sense of human limitations that comes from such an awareness, and an experience of awe before the forces that lie outside human control" (Guignon 2004, p. 18).

What lay behind, or motivates this? Guignon notes that the Christian distinction between an authentic self and a debased world led to the relatively quick acceptance of mechanized world view of science (Guignon 2004, p. 30). The disenchanted world (to use Max Weber's formulation) assumes no *telos*, no providence, no proper place or function to the universe, only objects efficiently integrated into causal systems. To realize such an objectified universe, what was needed was a "knowing subject who has stripped off all prejudices and comfortable illusions inherited from the past and is able to adopt a detached, impartial, dispassionate view of things" (Guignon 2004, p. 31). The upshot of this is what Charles Taylor calls "one of the great paradoxes of modern philosophy": disengagement and objectification has aided in creating a 'real' picture of human being "from which the last vestiges of subjectivity seem to have been expelled", yet it is a picture based entirely on a first-person stance, such that "Radical objectivity is only intelligible and accessible through radical subjectivity" (Taylor 1989, pp. 175–76). This, of course, leads to the anthropocentrism of the modern world, in which human subjects empowered with knowledge transform themselves into master exploiters and destroyers of nature.

This is Crake in a nutshell. He is the radical Enlightenment personified: science, he believes, can emancipate us from prejudices and illusions. He also believes that the general public cannot be similarly emancipated from its prejudices and illusions, in particular its debased faith in scientific salvation, and its hedonism. This is the kind of self that Crake wants to destroy (himself excluded, naturally). He is an extreme example of the modern subject who has the freedom to choose a life path. However, as Philip Rieff says, "with this ideal of freedom, modern humanity is put in the painful predicament of being 'freed to choose and then having no choice worth making'" (Rieff 1966, p. 93). This is key: Atwood blends realism with dystopian/speculative fiction to give her characters, mired in post-apocalyptic desperation, choices worth making—choices on the highest moral, ethical and material scales that return humanity an authenticity of purpose and existence. For Crake the choice worth making is annihilation in order to start again. For Jimmy, once he realizes what Crake has done, the choice he must make is to murder Crake. For the God's Gardeners, the choice worth making is to return humanity to an ethical co-existence with nature, an overriding goal of which is to prevent the existence of future Crakes. The stakes could not be higher. Their choices all concern to some degree what has to be carried out in order to make the world a utopia (Crake) or survive (everyone else). In the latter case, survival depends on both individuals and groups. Atwood has wiped away the modern world and its existential meaninglessness, replacing it with a pre-modern future, making it clear that this is the only future available to us. However, that is not such an awful thing: returning humanity to an authenticity of purpose in nature means striving for real freedom, not the caprices and trivialities of modern subjectivity and experience. It also, incidentally,

replaces organized religion with a traditional belief that nature gives us what we need to live authentically. A ustopia indeed.

3. Authenticity and Trust

However, as a ustopia, recalling Atwood's definition, latent in the text are dystopian elements. In this case, doubt and mistrust of authority color not only Jimmy's morals and ethics but also any epistemological claims. In *Oryx and Crake* Jimmy recalls being hired by a firm called AnooYoo to write promotional text for its self-help products—"Cosmetic creams, workout equipment, Joltbars to build your muscle-scape into a breathtaking marvel of sculpted granite", and pills to enhance every aspect of the mind and body (Atwood 2003, p. 248). Finally, Jimmy is able to put his "risible" degree in Problematics—"decorating the cold, hard, numerical world in flossy, 2-D verbiage" (Atwood 2003, p. 188)—to good use: "Once in a while he'd make up a word—*tensicity*, *fibracionous*, *pheromonimal*—but never once got caught out. His proprietors liked those kinds of words in the small print on packages because they sounded scientific and had a convincing effect" (Atwood 2003, pp. 248–49). 'Sounding scientific' is not just a skill that Jimmy has honed in his four years at Martha Graham, it also exposes the degree to which popular conceptions of the epistemological authenticity of science can be undermined. Indeed, Jimmy's ability to 'sound scientific' registers the total evacuation of moral or social responsibility. It is no wonder that Crake can effortlessly make Jimmy an unwitting accomplice in the ultimate scam, the promotion of BlyssPluss.

Jimmy's cynical rupturing of the relationship between words and knowledge leaves him incapable of recognizing the horror of his verbal manipulations. The other key characters—Toby, Zeb, Adam One, Ren—learn, recall, study, apply, but also doubt and question the efficacy and truth of the scientific knowledge they must deploy in other to survive. Jimmy's blasé manipulations (which, to be fair, he comes to regret and atone for) and the others' critical questions, ethically divergent as they are, together suggest Atwood's distinguishing between science as a discipline and set of practices aimed at objectivity and proof, and science as an ideology of power that manifests itself as the only authentic form of knowledge.

Shadowing 'sounding scientific' and the correct application of scientific knowledge are questions concerning the authenticity of the sources of this knowledge. These questions are most apparent in *The Year of the Flood*. Similar to *Oryx and Crake*, *The Year of the Flood* has two narrative threads: Ren's first-person account of her escape from the Pleeblands and sexual slavery to find refuge with the God's Gardeners; and a third-person account of Toby finding refuge with the God's Gardeners after her own sexual abuse in the Pleeblands. Ren's recollection of her first experiences with the God's Gardeners is revealing: "But the Gardener produce was the real thing. It stank of authenticity: the Gardeners might be fanatical and amusingly bizarre, but at least they were ethical. That's how they talked while I was wrapping up their purchases in recycled plastic" (Atwood 2009, p. 141). Both Ren and Toby are reluctant converts to the God's Gardeners. As victims of sexual violence, they harden themselves to the lingering misogyny and deprivations of the new world taking shape after the Waterless Flood (the Gardeners' name for the genocide caused by Crake's BlyssPluss pill). Conditioned by the consumer culture that facilitated its own destruction, they share a dourly ironic mistrust of any and all claims to truth. Ren's narration shows this in its blunt, world-weary tone, and suspicion of high-minded claims to moral or ethical purity. Toby shares this suspicion, even as she assumes a leadership position in the Gardeners and gains facility with its spiritual-horticultural practices. Her attitude towards the Gardeners' naturalistic beliefs reflects Atwood's own skepticism of a mode of religious worship that combines metaphysical truth, mystical profundity and new-age do-gooderism. Even though the Gardeners' produce is not the fake organic produce found in supermarkets or "so-called farmers' markets" (Atwood 2009, p. 141), it is too good, too perfect, made by people whose values and intentions are impossibly idealistic.

This lingering mistrust reveals the tension between accepting science as unfailingly grounded in cognitive logic, with descriptions and characterizations of natural phenomena well within the bounds of scientific explanation, and accepting it as true or authentic knowledge. The reason for this tension comes from mistrust—or blind faith—in the social locations of scientific knowledge, not in the lack of scientific knowledge itself. Stephen Shapin (2019) argues that knowing "who to recognize as knowledgeable and reliable; who to trust; which institutions to consider as the homes of genuine knowledge" is actually the kind of scientific knowledge that non-scientists privilege. However, as Shapin explains in *A Social History of Truth* (1994), accepting that scientific knowledge is disengaged from the institutionally-housed expertise that produces it also gives rise to a skepticism we seek to overcome. We seek familiarity, "access points", and even to put a literal human face on this modern condition of "anonymity and system-trust in abstract capacities" (Shapin 1994, p. 416). In the trilogy, Ren and Toby are these faces—they function as the trilogy's ethical judges. Their mistrust tempers claims to authenticity by showing that they are too often merely in the eye of the beholder, or are asserted by groups with a vested interest in authenticating their beliefs. Lacking a name or a face, our trust in science is undermined by what Shapin calls the effects of the normalization of science. Almost two centuries of the institutional success of science has come at the price of "the abandonment of the Sacred's traditional claim to Truth" (Shapin 2019). Pragmatism has eclipsed "Transcendental Truth"; Truth is aligned instead with Power. This is written all over the trilogy: Crake understands the public's ambivalence *vis a vis* Truth, and how 'sounding scientific' is sufficient to produce reflexive consumption of the products (e.g., BlyssPluss) made by corporate "Compounds" (enormous self-contained biotech firms, e.g., AnooYoo, RejoovenEsense, OrganInc Farms, and HelthWyzer). The public no longer seeks Truth, it seeks comfort, stability, pleasure, and good health: BlyssPluss, Crake is certain, would even defeat the resistance of the world's "crank religions" as "The tide of human desire, the desire for more and better, would overwhelm them" (Atwood 2003, pp. 295–96). This is Atwood's critical statement on the cost of the loss of trust in the ethical authenticity of centers of knowledge, and even in the Sacred nature of Truth.

4. Science, the Novel, and Referential Authenticity

Authenticity for novelists and readers in the present historical moment often refers to the veracity or believability of representations of racial, ethnic or gendered characters and their socio-cultural enmeshments. Another sense of authentic refers to how closely an artwork represents its origins, thus "our best responses to art endeavour to recapture the sense of what it might be like to dwell in proximity to the origins of the work of art" (Chantler et al. 2016, p. 3). Atwood is less interested in the first mode of authenticity; as we have seen her scientific turn instead suggests something more like the reconstruction of novelistic meaning *tout court*. Her turn to speculative fiction complicates the idea of representational closeness by pitting the imaginative terrain of the realist novel against the social locations of scientific knowledge in order to displace its self-referential origins. Similar to the God Gardeners' returning to a pre-modern world, Atwood seems to be fashioning a mode of fiction that takes us back to the novel's emergence as a form that vexes the authenticity of fact in/and fiction. In the case of the trilogy, the fact vs. fiction tension obliquely references the Two Cultures debate between science and art, particularly that aspect of the debate that casts the literary side as scientifically blind and ignorant, and thus in no position to criticize science.[3] In answer to this, the trilogy, much as it blurs genre lines, also blurs lines between the categories 'literature', 'science', and 'philosophy', showing them to be after-effects of disciplinary separation and reification.

The intermingling of science and literature has a long history, from Lucretius's first century B.C. epic *On the Nature of Things* (*De rerum natura*) to Mary Shelley's *Frankenstein* (1818). As Elinor Shaffer relates in *The Third Culture: Literature and Science*, "The late eighteenth century and early nineteenth century was especially fertile in attempts to synthesize theoretical material drawn from the more than one subject, and to find means

to come to terms with the increasing domination of scientific modes" (Shaffer 1997, p. 7). A good example of this is Wordsworth's claim in his "Preface" to *Lyrical Ballads* (1800) that poets "will be ready to follow the steps of the Man of science" in order to carry "sensation into the midst of the objects of the science itself" (Wordsworth 1965, p. 456). As scientific thought achieved ascendency, sensation was seen as not only beneficial, but necessary to make scientific knowledge into a meaningful discourse. John Neubauer relates how Goethe initially believed that "observations of nature must be direct, uncluttered by metaphysics and theoretical presuppositions, and primarily ocular. By means of intuiting individual, concrete objects, nature's general laws may be 'revealed', momentarily seen. Words, theoretical reflections can only cloud this vision" (Neubauer 1997, p. 52). Goethe, however, under the influence of Kant, Schiller, Schelling and *Naturphilosophie* came to see that science relied on signs and metaphors, and that perception could no longer be thoughtless. Later he argued, again under the influence of Kant, that while scientists strive to observe objects disinterestedly, this was an impossible goal, as between the object and observer lie imagination and patterns of thought, not to mention laziness, carelessness, and a whole host of human frailties. Science was, as Kant believed, an "a priori synthetic knowledge in the transcendental structure of the human mind". The practice of science could not but involve conflicts of reason and passion, and institutional and psychological forces (Neubauer 1997, p. 64). On this basis Goethe produced the *Gott und Welt* (God and the World) poems of 1821–1822 which "condense a lifetime's study of nature, enhanced by an intimate knowledge of scientific theory, stretching from Heraclitus and Empedocles to Bacon and Kant, just as the insights of scientific poetry from Lucretius to Haller are thoroughly absorbed" (Adler 1997, p. 67).

If scientific objects are ontologically separate from language, the latter is nevertheless of central importance, as epistemology is properly understood as a many-sided unification of experience and sensation, and not as abstractions. This grounding, once paramount, wavered, became suspect or was overridden when representing the 'real' world became a pressing need for such 20th century novelists as Conrad, James, Lawrence, and Woolf. Though they wrote as realists, their realism never ventured far into the realms of modern science and technology that were coming to dominate everyday life. This led to a kind of "tunnel vision": "For while the twentieth-century English novel has been dominated by realism or a coating of realism founded in the observational style of physical science", its attention has been focused on "an ever-increasing solipsism presented in studies of families or small domestic groups" or on the existential struggles of a singular individual (Brigg 2002, p. 17). Virginia Woolf, as Morag Shiach observes, believed that the richer representation of life should draw on the physical sciences, the image of the atom in particular; not the atom as a solid, quantifiable thing, rather the atom as "the cumulative effect of multiple minute sensations and experiences" (Shiach 2018, p. 61). Woolf's atoms come into the consciousness in an "incessant shower" reminiscent of phenomenology; however, they also "generate a complex pattern that can be grasped, represented and communicated in a way that enables modern fiction to represent modern subjectivity as well as fundamental elements of the modern world. The pattern generated by atoms becomes the substance of the cognitive process Woolf is trying to describe" (Shiach 2018, p. 61). The overall point for Woolf was to become conscious of sensation and experience in a way that subverted subjectivity in favor of a truer representation of the natural world.

Eliot's goal was similar: as he argues in "Tradition and the Individual Talent" (1919), "The progress of an artist is a continual self-sacrifice, a continual extinction of personality" that culminates in a "depersonalization that art may be said to approach the condition of science" (Eliot [1932] 1972, p. 17). Being a poet is like being a scientist because both require a knowledge of the past of their fields, constant work and education, and specialized knowledge. Science, moreover, for Eliot is not a particular kind of epistemology; it is a systematic body of knowledge opened up by specialized inquiry (Brazil 2018, p. 78). According to Eliot, though a poet works and thinks similar to a scientist, it is the use of classical myth that grants poetry "an *external* principle of order" (Nicholls 1995, p. 255), something that

Peter Nicholls sees emerging from a "search for 'authenticity' in the modernist aesthetic" (Coates [2001] 2010, p. 266) in Eliot's reading of the mythical parallels in Joyce's *Ulysses*. For Atwood, the realist aesthetic of the late-20th and early 21st centuries is similarly lacking an ethical dimension commensurate with the existential darkness initiated by scientific and technological overreach, and by the inadequacy of existing forms of literary discourse to address them. This inadequacy dilutes the authenticity of the novel as an artistic creation that speaks to the all-too-real dystopian future that will be produced, but also solved—perhaps—by science. It is as if Atwood is striving to make a case for her novels, and perhaps novels in general, by bridging the Two Cultures divide through an approach that relates science and literature dialogically, and recognizes their conflict over their claims to, in Patricia Waugh's words, "the exclusive title to all knowledge" (Waugh 1999, p. 34).

Rachel Holland sees such an approach resulting in what she calls, in echo of Shaffer, third culture novels, although in Holland's case she is referring to a more recent trend that responds to an increasing interest in popular science. Along with Atwood, Holland includes such prominent names as Martin Amis, William Boyd, Richard Powers, David Lodge, Michel Houellebecq, Jonathan Franzen, and Ian McEwan. The third culture novel for Holland "incorporates material from [a variety of sciences], but it also conducts a dialogue with a particular conception regarding the claims to certainty and objectivity associated with science, sometimes oversimplifying or subsuming all of science under this interpretation" (Holland 2019, p. 2). It is characterized by an interest in the material and physical, in scientific understandings of the universe, and the use of the novel form to mediate between literary and scientific worldviews. Ultimately third culture novels end up defending the novel as a way of knowing the world, but in a way that often posits "liberal (post)humanist values as an alternative to what they see as a problematically relativized (and overly influential) body of work that places too much emphasis on language and the human subject" (Holland 2019, p. 14). Literary theory is this problematically logo- and human-centric body of work that has paralyzed epistemology. The third culture novel steers between this Scylla and Charybdis by being both critical of and sympathetic to science as a way out of poststructuralist paralysis. This is key, as the relations between scientific and humanities cultures now puts the latter in a weaker position, as such under threat from scientific hegemony.

Yet, as Holland notes, science has to some degree validated literary/cultural theory's relativism by blurring the lines between humans and machines, humans and animals, thereby troubling ideas of subjectivity. The benefits of science have also cemented themselves in popular discourse, thanks partly to the fact that certain sciences—neurobiology, genetics, immunology, to name but a few—have made important, life-altering advances. Moreover, information technology, spread and democratized on the internet, makes once-specialized knowledge available to anyone with the means and time. The internet also can either multiply contact with viewpoints or (more likely) encourage us to retreat defensively into the familiar. In either case, whether diversity is viewed as opportunity or threat, certainty of knowledge emerges as a bellwether or touchstone, a way to make sense. Science is also a counterforce to religion, which has expanded its influence particularly in the U.S. Readers of this journal will also not need to be reminded of the extent to which the humanities has ceded ground to STEM subjects in higher education.

5. Atwood the Authentic Novelist

If Atwood is commenting on authenticity as a function of the social locations of knowledge, is she also using her authority as 'the most famous living literary novelist in the world' to grant authenticity to the novel as a literary form? Citing Lionel Trilling's belief in "'the marvellous generative force that our modern judgement assigns to authenticity'", Chantler, Davies, and Shaw pause on 'generative' to emphasize that "authenticity is not a state to be achieved but is always a process to be worked at or put into action" (Chantler et al. 2016, p. 4). Atwood's scientific turn thus calls out to the reader to put the affective, emotion-experiencing self in dialogue with the cognitive, rational-seeking self,

under the sign of epistemological solidity based largely on science—a world of knowledge and fact supposedly accepted as transcending culture, the self, perception, bias—to persuade the reader to return to the origins of claims to know something. The force of this trust in the truth-claims of the novels that comprise the MaddAddam trilogy resides not only in the solidity of science, it also resides in Atwood's authenticity as a novelist—a figure who possesses sufficient cultural authority to write the authentic novel for the zeitgeist, using the right and best combination of style, topic, focus, themes, and voice.

In the Acknowledgements sections of each novel in the trilogy, Atwood buttresses their referential authenticity by naming and thanking scientists and textual sources, and claiming that though each work is fiction, "the general tendencies and many of the details in it are alarmingly close to fact" (Atwood 2009, p. 433) and "it does not include any technologies or biobeings that do not already exist, are not under construction, or are not possible in theory (Atwood 2013, p. 393). These comments recall Linda Hutcheon on literary reference: "It is very relevant to the reading experience whether or not the referent is believed to be real or fictive, that is, whether one is reading about the real world or one is creating an imaginary possible world oneself. This is not to deny referentiality, as we shall see, but rather to reconsider its dimensions" (Hutcheon 1987, p. 4). The reader does not expect the world of the novel to be literally real, but expects the science behind the formulation of the world to be real. This charged depiction of a possible future is also meant, one assumes, to inspire belief, if not action, to prevent the environment catastrophes that could be the product of science minus ethics.

So, to answer a question posed in the introduction, cognizant of all of the above, and of the trend of the realist Anglophone novel's inward turn over the past 40 to 50 years, Atwood shifted from a realism of socio-historical authenticity to science or speculative fiction. Her novelistic output from the 1960s to the early 2000s features recognizably Canadian settings, characters and themes. Now, writing for a global readership, Atwood joins ruminations on global warming, genetic manipulation, and neoliberal capitalism by other globally prominent science/speculative writers such as Kazuo Ishiguro, Philip K. Dick, and William Gibson; SF/fantasy film in general; and *manga* and *anime* such as *Akira*, *Dragon Slayer*, *Fullmetal Alchemist* and *Evangelion*. This is not selling out, banking on popular science-fiction tropes to increase book sales. Rather, Atwood reflects how science fiction has become "quite naturally the most influential cultural system in a time like ours, in which dominant technological change constantly provokes hope, fear, guilt, and glory" (Rabkin 2004, p. 462). She is taking advantage of the accessibility and popularity of the genre, strengthening its truth claims with apparent scientific authority, thus appealing to popular taste, knowing that readers choose the familiar over the truly surprising. Written in the gap between fiction and real, Atwood grants the modern reader closer proximity to the authenticity of the moment of creation because we can know what Atwood knows—we can look up the same sources, understand the science, and come to the same ethical conclusions.

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Notes

[1] Examples include *Surfacing* (1972), *Cat's Eye* (1988), *The Robber Bride* (1993), and *Alias Grace* (1996).

[2] I include this quotation from a profile in *The Guardian* neither to endorse nor necessarily agree with it. By excluding the non-Anglophone world (i.e., most of the world), such pronouncements in prominent Anglophone media sources shouldn't be taken too seriously. Comments like this, however, merit consideration as they could serve to create the conditions they purport to reflect.

[3] The Two Cultures divide refers to the debate springing from C. P. Snow's 1959 Rede Lecture and the subsequent book *The Two Cultures and the Scientific Revolution* (1959) in which he claims that Western society has handicapped itself by splitting intellectual life into science and humanities cultures.

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