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Fafnir – Nordic Journal of Science Fiction and Fantasy Research

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Editorial 2/2014

Jyrki Korpua, Hanna-Riikka Roine & Päivi Väätänen

The second issue of *Fafnir* celebrates the multiversum of speculative fiction. It goes without saying that speculative fiction gathers various genres under its umbrella. This fact is well illustrated by the three articles published here, as they move from future histories of Isaac Asimov and Robert Heinlein to Ings' rewriting of the mind and to the uncanny dragons in children's fiction.

However, recognising the diversity of speculative fiction does not mean that Fafnir the dragon would just eat up random ingredients and digest them into a meaningless jumble. In all of its multifacetedness, a pattern emerges.

All in all, our three articles bring forward the wide spectrum of ideas turned over by means of speculative fiction. What if future histories could be managed and manipulated? What if the mind could be programmed? What if there were dragons? The writers of these articles address, among other things, the potential of asking such speculative questions.

Jari Käkelä's article "Managing and Manipulating History: Perpetual Urgency in Asimov and Heinlein", discusses in an illustrative manner two important works by the central authors of golden age of science fiction: Isaac Asimov's The *Foundation* series and Robert Heinlein's *The Man Who Sold the Moon*. Käkelä sees that while both authors see history as a result of important actions by a few central characters, Asimov's "heroes" are more passive, while Heinlein's characters are more active and disposed towards creating the change themselves.

Kaisa Kortekallio, in her article "Intuitive Technologies: Models of Posthuman Subjectivity in Simon Ings' *Hot Head* and *Hotwire*" focuses on the novels in order to examine how the texts appropriate and rewrite the idea of the mind as both material and computational. Kortekallio reads Ings' novels in the context of the theoretical developments within cognitive science, theories of complex systems, and posthumanism.

In the third and last article, "'Dragons Are Tricksy': The Uncanny Dragons of Children's Literature", Emily Midkiff discusses the representation of dragons in children's literature. She suggests that the figure of the dragon has a lot of uncanny potential to address issues linked to humanity and identity, also in the works aimed for young audiences.

In addition to the articles, Päivi Väätänen brings us the report of the 35th International Conference on the Fantastic in the Arts (ICFA) held in Orlando, Florida. Väätänen praises ICFA for its friendly atmosphere and a program as diverse as the field of speculative fiction.

Next issue, *Fafnir* 3/2014, will be out in September 2014. We are also happy to announce that the fourth issue of *Fafnir* is now open for submissions: research articles, overviews, essays, academic book reviews - you name it! See the call for papers at the end of this issue for details.

In his fantasy novel *Phastastes* (1858) George MacDonald wrote: "In good sooth, my masters, this is no door. Yet is it a little window, that looketh upon a great world." In a sense, this quote captures the strength of the multiversum of speculative fiction. We hope you enjoy the view from the windows that the writers of this issue throw open!

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Managing and Manipulating History: Perpetual Urgency in Asimov and Heinlein

Jari Käkelä

Abstract: This article discusses the view of history presented in the early part of Isaac Asimov's Foundation series (original Foundation trilogy published in book-form 1950–1953) and Robert Heinlein's short story "The Man Who Sold the Moon" (1949) from his Future History series. Looking at the way these works are influenced by the 1940s pulp science fiction context and Astounding Science Fiction magazine editor John W. Campbell Jr., this article examines their shared sense of continuous urgency or impending crisis. This leads to authoritarian solutions and a recurrent focus on "Great Man" characters who manipulate the society toward a better future with their enlightened awareness of the workings of history. As this article argues, while the stories justify these manipulations by a sense of urgency, they also create tensions where the manipulations become only temporary solutions and lead to predetermined futures for all but the power elite.

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". . . there is nothing in this world so permanent as a temporary emergency."
Heinlein, *The Past Through Tomorrow*, 123

This article examines the view of history conveyed in the early part of Isaac Asimov's Foundation series in comparison with "The Man Who Sold the Moon" (1949) from Robert Heinlein's Future History series. Both reflect also more generally the spirit of the so-called "Golden Age" of American science fiction in the 1940s, greatly influenced by editor John W. Campbell Jr. of *Astounding Science Fiction*, arguably the most influential pulp SF magazine of the time. Stories by both Asimov and Heinlein frequently involve enlightened engineers who actively shape history and bypass democratic processes, and as I argue, in this they repeatedly convey a sense of history as a state of perpetual urgency and crisis where great individuals must rise to the occasion and take active control of the course of events.

      While history, especially in Asimov's larger work, also connects with themes such as frontier and guardianship, the present article will focus on the early parts of Asimov's and

Heinlein's series, only briefly pointing out the further and diverging examples of the authors' other connected works.[1]

Authoritarianism is a commonly acknowledged strain in Campbellian science fiction (see e.g. Easterbrook, Kilgore, Abbott), frequently seen to be based in social Darwinism and reliance on meritocracy (Smith, Tucker, McGiveron, and Berger). It seems that these ideas are activated and justified through an Enlightenment-inspired necessity of contemplating history and societal dynamics. But as that contemplation often seems to result in a sense of impending crises, I argue that these stories share an unspoken assumption of a state of urgency which justifies emergency measures, and as such already postpones any serious consideration of more democratic, and slower, options in building societies and reaching solutions that would lead to the survival of humankind as a whole.[2]

Although both Asimov's and Heinlein's larger story sequences take a consciously historical approach, Asimov's work is based on idealization of a rather somber Enlightenment spirit, while Heinlein's stories are more pluralistic and satirical. Regardless, especially the stories set at the early stages of both future histories seem to be rooted in a view of history which requires leadership by the select few at moments of great urgency, even if they also view history as a series of larger developments which most individuals cannot affect – unless they are among the few who possess a superior understanding of those historical forces.

Campbellian Science Fiction and History

The future histories of Asimov and Heinlein were both first published as serials in *Astounding Science Fiction* magazine during the time when John W. Campbell Jr. had assumed its editorship and was consciously seeking to raise the "respectability" of the genre by trying to harness its speculative potential (Chapledaine *et al.*). In his editorials and critical writing Campbell also emphasized the predictive aspirations of science fiction as a field for thought experiments that were highly relevant to his contemporary society (Campbell, "Place of SF" 20), fostering a sense of literature that addressed audiences "who felt they had an immediate stake in the technosocial disruptions that were remaking a world" (Csicsery-Ronay 81). As Csicsery-Ronay notes, "[d]oing so it jettisoned many of the aesthetic and historical axioms of the Western culture" (ibid.), which in part led to more conscious attention on the role of history in the stories, and to the "social science fiction" that considered the impact of science on human culture in general (Asimov, "Social Science Fiction" 157–196).

The characters in these works of Golden Age science fiction use their knowledge of history to more effectively manipulate and maneuver the present towards their desired future. This results in a very pragmatic and utilitarian conception of history and societal dynamics where history is knowledge, and knowledge is power – bringing about a direct need to learn from the past to build the future. The idea of actively steering the course of the future is apparent also in Campbell's editorials where he claims for SF authors a role in shaping the future. It is a deliberate message of technological optimism, characteristic of Campbell's desire to see science fiction as a kind of continuation of the Renaissance. Campbell's introduction to the 1953 *Astounding Science Fiction*

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1   In this article I present a part of the argument in my forthcoming dissertation *The Cowboy Politics of an Enlightened Future: History, Expansionism and Guardianship in Asimov's Science Fiction*, which will deal with Asimov's series on the whole, including the interconnected Robot and Foundation stories. Here I focus on *Foundation* (1951), the first part of the book-form publication of the series which originally appeared in *Astounding* in 1942–1950. I have discussed Asimov's frontier themes also for example in Käkelä (2008).
2   Berger (discussed below) comes close to this crisis-bound idea. Hassler talks about Asimov's Enlightenment resonances more generally and Miller looks at Asimov's work as attempts to solve the utilitarian calculation problems of maximizing the well-being of the masses.

Anthology sums up many of the arguments from his editorials. He views SF as a literature which can help to conceptualize and develop further the early 20th-century "Technological Revolution" because it is

> the literature of the technological era. It, unlike other literatures, assumes that change is the natural order of things, that there are goals ahead larger than those we know. That the motto of the technical civilization is true: "There must be a better way of doing this!" (Campbell, "Introduction" xiii)

In Campbell's vision, this extends into something that would have an impact on the "method of living together; a method of government, a method of thinking, or a method of human relations" (ibid.). This is all a staple of the technological optimism that the "new literature" would address, studying history in order to extrapolate on new ways to build on the past. Campbell's ideas of the "Technological Era" reflect an almost Comtean positivism where knowledge of history has an integral role in the transition from the Enlightenment, or what Comte called "metaphysical" stage, to the truly scientific, positive stage.

In his promotion of science fiction, Campbell sees the "old" literature in the dawning Technological Era as "bitter, confused, disillusioned and angry . . . stories of neurotic, confused and essentially homeless-ghost people; people who are trying to live by conventions that have been shattered and haven't been able to build new ones" (xiv). In contrast to this, he posits the "new literature" of science fiction as more able to effectively take up large themes, and to acknowledge and deal with change as a permanent part of human life and the world. It will "tell of goals and directions and solid hope," providing for a "stability of a compass needle that points always to the pole it never attains, but knows surely is there" (ibid.). In this rhetoric of optimism and constant progress, Campbell argues for "dynamic stability that lies in going instead of in being" (ibid.).

The sense of science fiction as first and foremost an ongoing dialogue of ideas has carried to the present for example in the discussions of hard-SF-oriented authors David Brin, Gregory Benford and Greg Bear who added to Asimov's series with their "Second Foundation Trilogy."[3] They see this as a process where they "revisit" the assumptions of the older works and add to the discussion, even if it is, in their view, often misunderstood in criticism as "sharecropping" on each other's ideas (Bear 22, 30–31). This is what also Csicsery-Ronay refers to with his concept of the SF "megatext" which emphasizes the communal aspect of the genre and the "shared subcultural thesaurus" created by all of its texts (Csicsery-Ronay 77n4, 82–84). In his view "SF texts are not autonomous; they depend on each other for comparison, dialogue, the grounding and elaboration of ideas" (84). This view approaches the works expressly from within the genre and the fandom, and emphasizes the role of the readers' (and authors') competence in the genre at the same time as it slightly paradoxically praises the universality of the genre's approach. All in all, the key point here is the consideration of science fiction as thought experiments where new theories are built in dialogue with the old. From the readers' letter columns in Campbell's *Astounding* to the present criticism, this discussion seeks to view the thought experiments of science fiction as something like a simulation of using the scientific method in actual science.[4]

In conjunction with these ideas, Delany places the Campbellian Golden Age in context with the discoveries of Einstein and others who showed that extensive scientific revolutions were

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3   Rather than further conceptualize the series, Brin, Benford and Bear update some of Asimov's ideas with more recent science and fill in gaps in the already existing narrative. They do not venture beyond the events in *Foundation and Earth*, the novel set in the latest events of Asimov's fictional world, nor do they consider what the completed collective consciousness of Galaxia would look like.

4   This emphasis on the ability of science fiction to provide a vehicle for the ideas sometimes leads to seeing more mainstream literary criticism as merely something that gets in the way of the thought experiments, which are often perceived as the genre's most important aspect. This is apparent already in Campbell's ideas on the "new literature," as he effectively aims for an active and integral role for science fiction in the sphere of societal and political discourse, but not in the sphere or art.

possible. According to Delany, this "theoretical plurality" inspired a critique of the popular conception of science, and the resulting constant "fictive theoretical revision" challenged what modern science at the time considered impossible (Delany 221). As a result, investigating various views of history became one more thought experiment, leading to "historical plurality" in Campbellian science fiction as it brought history and societal development into the realm of theories potentially to be revolutionized by new discoveries (226).

There are, however, also much more pessimistic interpretations: for example Berger sees the works of Campbellian science fiction to exhibit a world-view centered on desperately opposing the decay implied by the Second Law of Thermodynamics which dictates a descent into entropy. In his view, much of Campbellian science fiction becomes an (often frustrated) attempt to fight against this impending chaos by recurrently authoritarian methods, and the works do not look as hopeful as presented in Campbell's own rhetoric (Berger 14–15).[5] Still, at the same time as Berger makes an important point in criticizing the works of Campbellian Golden Age for the simplification of scientific and historical processes and for the resulting authoritarianism, he also rather heavy-handedly concludes that "the ultimate inevitability of entropy made Campbell a determinist about human history" (17). As a result, Berger's own analysis largely downplays the curious tension between these gloomy prospects and the "problem-solving, activism, optimism; hope . . . in the right kind of people to master their physical environment," which Berger sees as mere denial of the losing battle (ibid.). After all, even if the solutions posited by Campbellian SF are at times meritocratic, authoritarian and brutally utilitarian, they still represent the continued survival of humankind – and while they betray distrust in the intelligence of the masses and at times see democracy as a hindrance to progress, they nevertheless also exhibit a certain optimism and belief in the human ability to come up with new answers in the future.

Heinlein and Asimov both highlight the spirit of the Campbell era, as well as make use of a specific frontier ethos. Heinlein based the outline of his Future History series on the history of American expansion and projected the frontier past rather directly onto the near future (see also Samuelson 32–63), often exaggerating certain aspects of the American frontier mythos (and ethos) to satirical proportions. His future history outline progresses from "The Crazy Years" of the 1940s European collapse and "considerable technical advance" in the US to space exploration consciously modelled on American frontier expansion in "opening of new frontiers and a return to nineteenth-century economy" (*The Past Through Tomorrow* 660–661). This then turns into "Imperial Exploitation" and develops through "revolutions," "extreme puritanism," and "religious dictatorship" into the "[r]e-establishment of civil liberty" and "[r]enascence of scientific research" which enables yet another move toward the stars (ibid.). Populating this timeline with stories that are only loosely connected, Heinlein created a fairly pluralist mosaic view of the future history of human advance into space.

In contrast, Asimov's series offered a view of encompassing sweeps of future history which unfolded as a unified story, and transmitted a sense of a mythical grand narrative of all humanity, employing an encyclopedic flavor akin to Edward Gibbon's *The History of the Decline and Fall of the Roman Empire* (1776–1789) which was the initial inspiration behind the desire to write, as Asimov himself describes it, "a science fiction story that *read* like a historical novel" (*I, Asimov* 116–117, original emphasis). This historical approach opened vast conceptual possibilities, and also turned from the analogies of Roman history into analogies of the American history of expansionism and theorizations on the significance of the frontier in the American development, as I have argued elsewhere ("Asimov's Foundation").

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5   Berger criticizes Campbellian SF as "increasingly misanthropic and elitist" with a deeply rooted distrust in the human faculty which leads to authoritarianism because "the masses cannot be trusted to govern themselves" (32). This leads to "the forceful oppression of certain kinds of change, at least for all but an elite." Berger sees this as a frustration arising from the attempt to reduce problems to their essentials in the spirit of the scientific method, when history or society cannot be so reduced (31).

Heinlein's stories concentrate on individuals and local concerns, and connect to his own present through detailed references to American frontier history, as well as satirical exaggerations of *laissez-faire* capitalism (Tucker 189–190) and political manipulation. Although Asimov's work, too, includes political manipulation and plutocratic plotting, in his series they are represented more simply as societal trends, and the stories are inhabited by characters who take an active role as they not only try to understand the past but also seek to transform that understanding into action. Despite the fact that Asimov's series focuses on mostly one character per story, it manages to create a feel of a panoramic view of the history of a society as it changes. While Heinlein focuses on individual characters at crucial points in his future history, Asimov's work builds a grand narrative that covers the future history of the whole of the human species.

As I discuss in the following, the conceptions of history in the works of Asimov and Heinlein become apparent through the motifs of urgency and the "Great Men" of history who rise to the task of managing that situation, and succeed through their ability to view history in a way that enables them to base their manipulations on it.

Worlds of Perpetual Urgency and Determinism for the Masses

Many of the Golden Age writers were infatuated with the idea of the Enlightenment and presented streamlined versions of it in their stories under Campbell's editorship, reflecting his positivism and faith in the power of science and technology. However, this faith is often shadowed by cynicism in terms of politics and the importance of individual rights, veering in its ideals toward enlightened despotism. The early 20th-century context was one of the sources for the desire in American SF, inspired by the new scientific discoveries, to fight against the seemingly impending chaos brought about by the social upheavals, depression, war and fascism of the 1930s (Berger 14–15). In this, much of the Campbellian science optimism can be seen as attempts to navigate through the societal entropy and to maintain a precarious balance on the brink of chaos. Even as Asimov's series progresses rather optimistically from one crisis to another, it also exhibits a nervous urgency of fighting off that impending chaos[6] (in a very concrete manner as psychohistory is trying to shorten the coming "Dark Age" of the galaxy), and a certain awareness that things can very easily slip into this nearly irredeemable state. All of this creates the need for authoritarian control, which will enable the corrective <u>action.</u> All in all, Asimov and Heinlein both explore various aspects of the motif of conspiracy or elite control (Clareson 30, Abbott 108, Palumbo 49–64), justified by the urgency of the historical situation.

In the Foundation series the character of Hari Seldon becomes a purveyor of the perpetual urgency under which the Foundationers constantly work. In his recorded appearance at the Foundation "Time Vault" fifty years after its establishment in exile from the Galactic Empire, Seldon sets the stage for the crises to come:

> From now on, and into the centuries, the path you must take is inevitable. You will be faced with a series of crises. . . .
>
> But whatever devious course your future history may take, impress it always upon your descendants that the path has been marked out, and that at its end is [a] new and greater Empire! (*Foundation* 80–81)

Seldon's message casts the Foundationers as "the seeds of Renascence and the future founders of the Second Galactic Empire" (ibid.) whose destiny it is to save the whole of human civilization. As

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6   Palumbo (2002) focuses on the idea of chaos and fractal symmetry as self-similarity in Asimov's plot structure. On this basis he conducts an insightful, but still rather conventional reading of the recurring themes in the series, ordered according to his findings on the plot structure.

Seldon repeatedly engages in these crisis-bound conceptualizations of history and future, for the Foundationers his recorded appearances make him a godlike entity behind their national destiny. The Foundationers are thus immersed in ideas of an urgent duty to expand and redeem the rest of the galaxy, and this will become the ultimate justification for manipulations when the characters of the politician Salvor Hardin and businessman Hober Mallow rise to the challenge. When they do, they are frequently portrayed as the only ones who realize the state of urgency and see the larger patterns of history.

While Asimov's heroes assume power at states of emergency, Heinlein's heroes remain more ambivalent. Still, also Heinlein's very openly manipulative protagonist, D.D. Harriman in "The Man Who Sold the Moon," argues that he needs to be in control of the moon flights because only he can be the moral guardian of the possibilities that they produce:

> Handled right, it can mean a new and braver world. Handle it wrong and it's a one-way ticket to Armageddon. . . . I plan to be the Man in the Moon myself—and give it my personal attention to see that it's handled right. (Heinlein 146)

Both Asimov's and Heinlein's characters repeatedly assume a position of guardianship over society as they take responsibility and guide all of humanity despite their personal interests. As Harriman puts it early on in Heinlein's story: "there is nothing in this world so permanent as a temporary emergency" (123). It is this urgency that calls for the "Great Men" of history to step up, and the narratives of both Asimov and Heinlein build on a conception of history which focuses on these figures.

In this, the masses are often left in the background. The fact that "the path has been marked out" raises the discussion of determinism in Asimov's series. While for example Elkins sees Asimov's psychohistory as essentially distorting ideas of historical materialism to a cyclical conception of history (96–110), Freedman more recently views psychohistory as reducing Marxism and Freudian psychoanalysis to nineteenth-century positivism which assumes the masses to be completely passive. This leads to "investing of all meaningful agency in an elite and aloof clerisy" (Freedman, "Remembering the Future" 133–134). Indeed, Asimov's "necessary assumption[s]" of psychohistory do demand this, as the human reaction stimuli must be kept constant for the whole theory to work (*Foundation* 20). On the other hand, the problems of this reduction are acknowledged already in Asimov's series as it continues: as human history cannot be simplified in such a mechanistic way, this sends Asimov on an infinite course of trying to patch up the problems created by his previous solutions. Along these lines, Delany has noted that the series in fact comes close to the spirit of the scientific method when it seeks to address these problems in later stories, thus engaging in a dialogue with ideas presented in the earlier stories (see Delany 223-227). In his view, the latter half of Asimov's original trilogy – the stories with the Seldon-Plan-disrupting character of "Mule," and the scientific community of the Second Foundation who try to fix the Plan after him – questions this determinism and positivism, in effect delivering a two-part message that "history is intellectually negotiable but not deterministically predictable" (Delany 223–225).

However, it seems to me that all of this overlooks the point that history in Asimov's series is never really deterministic in the first place. Psychohistory is a statistical tool that will reveal tendencies and probable developments, but that information is always used by someone to initiate some action. These initiating agents – nearly always a power elite, comprised of however few people – retain their freedom of action and the direction chosen becomes a matter of their reasoning. Their actions may effectively result in determinism for the masses, but in this curious mixture of looking at the masses through the power elite, the masses fade into the background. In psychohistory, the social sciences are extrapolated into the realm of hard sciences, and history itself becomes a set of data that can be treated through the methods of the natural sciences. Therefore, it

becomes a utilitarian method of taking guardianship over the human future history, to minimize strife and to try to provide the greatest good for the greatest number of people (see also Miller 189–206). As Asimov's fictional world is ultimately dictated by rationality, there seems to be no effective need for a discussion on the morality of this guarding elite – their benevolence is as if automated by their reliance on science and reason. Furthermore, this same power structure is present in Asimov's series even in the stories where the current power elite operate without knowledge of psychohistory. Even there similar layers of hidden elite control are present, and rather than positing that there is no way to affect the course of the future, this possibility can be accessed only by the very few of a highly select elite, and even they have to struggle to succeed.

Thus these works exhibit a tension between the two conceptualizations of history which Shippey sees in much of science fiction: the "Malthusian" idea that society is bound by technical and economic forces invisible to the individual, and the "mythopoeic, hero-making" idea that history progresses purposefully and with definite agency by individuals toward the present which is superior to the past (Shippey 6–8). While this develops into a more pluralistic view as the narratives of Asimov and Heinlein progress, *Foundation* implicitly and "Man Who Sold The Moon" more obviously emphasize individual actors who are able to take advantage of the Malthusian forces of society with their own rational ability.[7]

Freedom and Responsibility of the Great Men

Especially the early part of the Foundation series becomes a sort of a hagiography of the frontier filibuster, robber baron and merchant prince characters who begin building the nation on the frontier. In Asimov's series, the actions of such characters are easily justified through the urgency set by Hari Seldon's speech, and even though they do not possess the same knowledge of the future to come as Seldon, they earn their place among the heroes of Foundation history. Their impetus seems to be Thomas Carlyle's "Great Man Theory" according to which "the history of what man has accomplished in this world, is at bottom the History of the Great Men who have worked here" (Carlyle 4). This idea was popularized in Carlyle's *On Heroes, Hero-Worship and the Heroic in History* (1840), and it becomes one of the leading conceptions of history behind Asimov's series, and the same is apparent also in several of Heinlein's works. In fact, a couple of minor characters in "The Man Who Sold the Moon" even refer to Carlyle explicitly.

In addition to this, the pulp context of Asimov and Heinlein brings in the idea of heroic individuals who shape the course of history in a way that resonates with the convention of the "universal hero," as analyzed by Joseph Campbell in *The Hero with a Thousand Faces* (1949). The three stages of what he calls a monomyth are "a separation from the world, a penetration to some source of power, and a life-enhancing return" (35). Just as there is a universal mythic structure of quest in the specifically American cultural myths of "settling the West" and "manifest destiny" (Mackey-Kallis 17), the Great Man heroes of Asimov and Heinlein become the realizers of a mythical quest as they transform not themselves but the world around them through the *escape – initiation – return* formula.

In the Foundation series, Hari Seldon is the ultimate Great Man figure as the developer of psychohistory. The chapter "The Psychohistorians" in *Foundation*, opening the book-form publication of the series, adds to building the myth as it shows Seldon prophetically mapping out

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7   The two larger series also contain stories like Heinlein's "Logic of Empire" and Asimov's "The General" in *Foundation and Empire* (originally published as "Dead Hand" in May 1945 *Astounding*) which demonstrate the helplessness of the individual in the grip of the historical forces. This is in contrast with the maneuverings of the traders and mayors in the early parts of Asimov's series where the characters do steer the society, but much in the way of Heinlein's heroes do not attempt to go against the flow of history and societal developments. Instead, they harness these forces for their personal advantage at the same time as they work for the common good.

the course of the First Galactic Empire's decline with the certainty of a man with a vision and plans calculated by the scientific accuracy of "the developed mathematics of over eighteen years" (*Foundation* 27). When Seldon is taken to a trial where he has to answer accusations of rousing rebellion against the Empire with his predictions, he is "unperturbed. . . . the only spot of stability remaining in the world" (28). He is the purveyor of "scientific truth [which] is beyond loyalty and disloyalty" (29) and not a puppet of the crumbling empire that challenges him. Through psychohistory Seldon is more "aware of both the present status and the past history of the Empire" (33) than anyone else, and at the same time he becomes a founding father figure and a Great Man of historical importance to all Foundationers.

However, while Seldon's messages may inspire the masses by casting them as the protagonists of a magnificent future, they provide no actual guidance. Rather, they enforce a split between those few who understand and control the science and the many who to whom it becomes a matter of predestination, as discussed above. Only a select few, protagonists like Salvor Hardin and Hober Mallow, are able to use their intellect to distance themselves from what seems pure magic and predestination to others, in order to go beyond the shock and awe of the sublime vision and start actively forwarding the Foundation's expansionist mission. Repeatedly in Asimov's series, the Great Men are found among those who are not mesmerized by the seemingly sublime scope of history laid before them, but are instead able to place it in the world of reason and take action (see Käkelä, "Enlightened Sense of Wonder?").

Similar noble aspirations can be found in Heinlein's characters as well, but equally strong is the sense of the capable individual's right to take also personal advantage of the situation. Smith (137–171) and Tucker (172–193) among others have discussed the social Darwinism apparent in many of Heinlein's works, and it seems evident that while Heinlein's stories provide an optimistic view of the possibility of human development, they also open the door to meritocracy and justification of authoritarian control by the "fittest" (Cf. McGiveron 53–54[8]). The adoration for Machiavellian heroes who become significant historical figures through their courage to act upon their vision is clearly present in the character of Harriman. At first he seems like a purely capitalist robber baron on "the greatest real estate venture since the Pope carved up the New World," ready to strike a deal that is "like having Manhattan Island offered to you for twenty-four dollars and a case of whiskey" (Heinlein 132), and operating with a *savoir-faire* where "the use of bribe money is a homeopathic art" (140). Initially Harriman is the fabled American entrepreneur-turned-tycoon with a "Midas touch" (134) who makes use of the virgin land rhetoric and frontier parallels only to further his business interests. However, as he reveals his larger nation-building vision in direct comparisons between the history of American independence and the notion of establishing a free state on the Moon, his plan is shown to be more than a mere plutocratic daydream. Thus Harriman becomes the lone hero who understands the situation and now his greater goal justifies all of his manipulations:

> The Moon was not meant to be owned by a single country, even the United States. (145–146)

> I'm going to see this thing developed, not milked. The human race is heading out to stars—and this adventure is going to present new problems compared with which atomic power was a kid's toy. The race is about as prepared for it as an innocent virgin is prepared for sex. Unless the whole matter isn't handled carefully, it will be bitched up. (203)

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8   McGiveron contests that Heinlein's Social Darwinism is "not a celebration of mindless expansionism, but, consistently, a call to arms to those who would remain free; he espouses justifiable defense rather than rapacious offense." In his view, Heinlein's "idealism and pragmatism temper each other" and produce solutions of mutually tolerated existence instead of purely socially Darwinistic "mindless predatory organisms" (54). All in all, McGiveron gives Heinlein much more of a benefit of doubt than the numerous critics' allegations of elitist libertarianism bordering on fascism.

Harriman himself is somehow the only one who is not as innocent: as a self-appointed guardian, he will ease the virgin humanity safely into this adulthood that it will find in transforming the untouched land of the space frontier into an established society. In his vision and conviction that he must nurture humanity in the right direction, Harriman is rather like Asimov's heroes.

As Heinlein's story is filled with conscious and direct contemplation on the historical analogies, Harriman's business partners debate his status as that frontier entrepreneur-cum-Carlylean hero. Comparing him to "the last of the Robber Barons [who] opened up the American West," they see him as "the first of the new Robber Barons" and make a conscious reference to Carlyle and "the 'Hero' theory" (185). These minor characters function to highlight considerations of the historical significance of both the situation of opening the space frontier and the role of individual Great Men in it. Still, because Harriman's business partners are themselves not adept enough to become the historically significant rulers of Carlyle's hero theory, they stay on the "merry-go-round" set in motion by Harriman's manipulations and rather easily get past their concerns of him "setting up new imperialism" (186). Even this much concern for the side-effects of manipulation is something of an exception in these stories, as they frequently idolize the robber baron figures as the new Western entrepreneurs. The ethos of the stories is that even if the scheming is devious as such, the characters turn into heroes when they contribute to the development of the frontier nation.

Harriman operates in a knowable present with all the possible resources of information and wealth at his disposal, but the Foundation mayor Salvor Hardin has to rely entirely on his own rational ability. His story is set in a moment of utmost urgency as the Foundation's existence is threatened by the surrounding kingdoms, and in this situation Hardin becomes the first of the Foundation Great Men to begin establishing it as a nation of its own. Hardin is empowered by his own ability and vision as he starts working toward Seldon's goal by piecing together information about psychohistory and Seldon's objectives. While the Foundation Encyclopedists passively wait for a "*deus ex machina*" (*Foundation* 73) of the Old Empire or Seldon's calculations to resolve their problems, in the spirit of Enlightenment, Hardin takes an active role, realizing that "we must work it out ourselves" (75). At this point he seems to be the only one with at least a suspicion that there may be a greater whole towards which they should be heading. With his sense of self-reliance, he is able to reproach the Foundation scientists for passively only relying on "authority or the past – never on [them]selves" (74). Hardin's pragmatic self-reliance simply brushes aside any paralyzing awe that his own vague knowledge of Seldon's plan may evoke, and he gets to work.

The relatively static nature of Asimov's characters in the Foundation series produces this contradiction: as they correspond at least metaphorically with Joseph Campbell's monomyth, they go through motions which should cause some change. However, as they are the Great Men who possess a strong sense of mission to begin with, they need no transformations like the reluctant acceptance of responsibility, which would be typical for pulp heroes. As often in Asimov, the characters whose actions change the world remain themselves representations of the societal forces, rather than show any individual development – even if, paradoxically, individualism is one of the forces that they represent.[9]

In his analysis on the body of Heinlein's work as "incessant focus on the single individual and his world" (99), Slusser points out a factor which seems the key to the difference between Heinlein and Asimov. Heinlein's focus on individuals can be seen to rise from a different concern: while Asimov uses individual heroes as emblems of forces that move the society onwards and create the future history, with Heinlein the actual individual and his preservation are much more significant. As Slusser points out, Heinlein's work exhibits a "preoccupation with endlessly

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9   Later on, Asimov's series does feature also characters whose inherent sense of mission works to show the futility of individual action, as in the case of Lathan Devers in *Foundation and Empire*.

extending the material line of a single existence" (108n), as in his Lazarus Long stories. Although Asimov's future history is often criticized for the stylized and interchangeable characters, it is precisely this emblematic nature of the characters which contributes to creating the sweeping narration of the large historical movements and societal dynamics. To add to this, Asimov's heroes are distinguished from Heinlein's by the way they more easily accept the limitations of their personal existence, and also step down from the seat of power.[10]

With both Asimov and Heinlein, however, the actual justification for why these specific individuals should be in control does not seem to be much more than the fact that they happen to rise to the challenge, and be responsible enough to see to it that in addition to accumulating their own wealth, they benefit society (or the 'right side' of it anyway) as a whole. As De Witt Douglas Kilgore notes in *Astrofuturism*: "[i]n Heinlein's narratives, the right to control new lands and wealth is conferred according to one's standing in a meritocratic hierarchy" (95; see also Elkins 105). The same is true of Asimov's characters whose actions are justified by their awareness of the workings of history, and their ability to take advantage of them. This position is authorized through the language of Puritan election (Slusser 96–98; Kilgore 94) even if it is election by capitalistic prowess, not divine election or salvation. Hence, also Heinlein's Harriman becomes the lone hero who directs humanity. In the words of Kilgore: "[t]he wonderful dream of new frontiers and American renewal . . . is authoritarian even as it professes a rhetoric of egalitarian individualism" (95). This tension between individual freedom and authoritarianism and between self-serving exploitation and enlightened guardianship is ever present in Asimov and Heinlein.

Historical Awareness and Manipulation

One of the central faculties of Asimov's and Heinlein's Great Men seems to be this ability to turn the understanding of their historical context into practical action (see also Berger 19). As noted above, this consciousness of history leads to deliberately applying frontier imagery as a means of rejuvenating the culture. This comes across as the necessity of expansion to retain cultural vitality, and links it with Frederick Jackson Turner's "Frontier Thesis" in Asimov's case (Käkelä, "Asimov's Foundation"), while in Heinlein's "The Man Who Sold the Moon" it appears as a promotion of space travel in a readily familiar package with easily exploitable connotations of national mission and virility.[11]

Asimov's Hardin becomes a Great Man through his ability to self-reliantly deduce the Foundation's point in history and to take advantage of it, but also through his more general ability to form a comprehensive view of the Galaxy's history. Passages that merge Hardin's voice with the narrator's provide glimpses of historical movement reminiscent of history textbook rhetoric:

> And now that the Empire had lost control over the farther reaches of the Galaxy, these little splinter groups of planets became kingdoms – with comic-opera kings and nobles, and petty, meaningless wars, and a life that went on pathetically among the ruins. (*Foundation* 86)

Hardin's thoughts combine here with the narrator's voice to give an encompassing account of history. This description of the declining Galactic Empire has evident affinities to Gibbon's *Decline and Fall*, and as Hardin's character is here given an omniscient perspective, he is set clearly above the details of individual historical events. The Foundation leaders are on a mission that is much

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10   An exception of sorts is the robot character R. Daneel who first appears in Asimov's 1950s novels *The Caves of Steel* and *The Naked Sun*, and is brought back in his 1980s additions to the series as a godlike entity with his 20 000 years of existence and guardianship over the galactic history. Being an Asimovian robot, he will never consider himself more important than the humanity which he guards, but he is also a representation of the ultimate ability: a self-evolved guardian of all humanity.
11   Frontier as a safety valve in Turnerian terms has been seen also in Heinlein's work (Tucker 178).

more far-reaching, and for them history is more of a scientific problem which they observe and steer from afar on their way towards Seldon's promised land of the Second Galactic Empire. Hence, Hardin always seems to be something of an outside observer of the history unfolding before him, even when he steers its events himself.

Heinlein's Harriman, on the other hand, is in the thick of things as he is constantly arguing for space frontier expansion that mirrors the American expansion, and his success lies in maneuvering his way around the obstacles set up by government. The story gets much of its drive from following Harriman's increasingly more imaginative manipulations as he sets up his venture by bribing, lying and bending the letter of law. Key to all of this, however, is the portrayal of Harriman as a character so aware of history that he consciously repeats the frontier myth of American history on the Moon. In a sense, the *novum* of the story is Harriman's ability to reiterate the American frontier myth as a marketing tool for space exploration, but also to implement unrestricted power capitalism in its realization.

Asimov's characters are rather serious compared to Heinlein's merry pack of new frontier robber barons, perhaps with the exception of Hober Mallow in the *Foundation* chapter "The Merchant Princes." He embodies the same historical vision and awareness as Salvor Hardin, and his ability for management and manipulation are central in the latter half of the novel. After the first steps in frontier survival represented by Hardin, the Foundation turns to more active conquering through commerce. Mallow is a purely capitalist businessman with no pretensions ("Money is my religion" *Foundation* 184), and a readiness to guide a potential customer through "the workings of dummy corporations" (187) to seal a deal. Still, he becomes another Great Man in Foundation history by retaining his position as a "free agent" (210) and a lone hero, "the only man who knows how to fight the crisis" (222) – thus legitimizing the use of any means necessary. Indeed, Mallow's robber baron heroism is in its ambivalence close to Heinlein's Harriman: he is ultimately doing what advances the greater cause of the Foundation, but he is also the one to make the biggest profit on the maneuverings that lead to it.

Even though the Foundation mayor's secretary, who becomes Mallow's adversary, criticizes the provincial-origin Mallow for not having the "sense of destiny" (232) of the Foundationers, by the end of the story it is clear that Mallow is the one with a greater and an active sense of the historical forces at play. He is able to turn the situation to the Foundation's favor through his vision which is much more than just a passive sense of destiny. However, in this case taking action ironically means doing nothing but letting the current crisis run its course, as will happen when the Foundation makes no offensive against the kingdom of Korell that threatens them with war. By his historical understanding, Mallow is able to understand what will happen when the Foundation cuts the trading connections with them:

> The whole war is a battle between . . . The [old] Empire [which supports Korell] and the Foundation. . . . To seize control of a world, they bribe with immense ships that can make war, but lack economic significance. We, on the other hand, bribe with little things, useless in war, but vital to prosperity and profits. (231)

Knowing that "people endure a good deal in war," Mallow aims for a stalemate during which, instead of wartime "patriotic uplift of imminent danger," the Korellians will be met by accumulating everyday annoyances as the Foundation-sold technology will begin to fail, and the public dissatisfaction will lead to their eventual surrender (229).

By this capacity for encompassing vistas of social movement, much like those of Hardin's, Mallow solves the crisis, and this is the redeeming factor of all his brutal economic manipulation which in itself does not make him look like much of a hero. Paradoxically, but typically for the series, even though Mallow too knows that "Seldon crises are not solved by individuals but by

historic forces," his manipulations to gain power so that he can make sure that historical forces are left to carry out their course, amount exactly to those "brilliant heroics" (228). The fact that in the larger scheme of things Mallow (just like Hardin) is very consciously working for the greater cause, gives a Campbellian moral justification to all the admiration of clever manipulation in the first part of the Foundation trilogy.

This exhibits the typically American active pragmatism and optimism in Campbellian SF which solves the problems and masters the environment once "the right kind of people" are given freedom to work, but it also betrays the view that someone needs to take over the masses for the sake of their own well-being (Berger 16–17). The theme of elite control develops as the general public is repeatedly shown to be, as Berger notes, "ill-informed, prejudiced, and more than willing to follow the manipulative leadership of nearly anyone egotistical enough and sufficiently skilled to step out in front of the crowd" (20). As these works often take this social dynamic as a given, authoritarianism becomes also the moral answer: if the masses blindly follow authority in any case, it would be irresponsible to let the less capable assume the authority (see also Easterbrook 53). Recurrently this amounts to a willing surrender to the idea that you cannot change the society against the flow of history and be personally successful, but you can maneuver your way through it and accumulate personal success.

The parts of Asimov's and Heinlein's series discussed here focus on the power elites as they maneuver the society through its first steps in frontier survival and set up expansionism. However, both series do feature also characters that are not part of the elite, at least not to begin with. For example in Asimov's "Search by the Foundation" in *Second Foundation* (originally published in December 1949 and January 1950 *Astounding* under the title "–And Now You Don't") the teenage protagonist Arkady Darell helps to defeat the hidden power elite of the Second Foundation, even if the story ends with a revelation that the First Foundation's seeming victory is only bluff designed to let the Second Foundation continue its hidden control. Heinlein's Future History also features characters like the naïve would-be frontier hero in the story "Coventry," or the unfortunate lawyer in "Logic of Empire" who ends up on the oppressed side of the expansionistic society. At first these stories do in fact seem somewhat critical of the division created by the authoritarian urgency of frontier management. However, the criticism is brushed aside as the protagonist of "Coventry" reaches a meritocratic redemption of sorts when he accepts responsibility and aspires to become a part of the power elite; and when the lawyer in "Logic of Empire tries to turn attention to the horrors of the slavery that he managed to escape and is treated as a fool for refusing to see that slavery just happens to be a "necessary" part of building an empire. Also in those Heinlein's Future History stories which focus on smaller-scale incidents, the society is built along authoritarian and meritocratic lines and the difficulty of emerging from the underside of society is an important part of validating the individual's ability. This is evident for example in "Misfit" where an awkward and uneducated working class protagonist turns out to be a mathematical genius who saves the day on a military-run construction site of the space expansion. Even here it is the individual's own extraordinary ability that distinguishes him from the masses and grants potential access to the elite.

Conclusions

In his editorials for *Astounding* Campbell very consciously gives science fiction an active and integral role in affecting societal development. He echoes Auguste Comte's aphorism that "from science comes prediction; from prediction comes action" (quoted in Pickering 566) and stresses the importance of science fiction in anticipating the goals towards which humanity should strive. This can be seen as a central idea behind many of the Golden Age works. Neither Campbell, Heinlein

nor Asimov is interested in history for the sake of knowing the past but for actively learning from it and contemplating possible future directions.

In these works, science and the understanding of history are combined into what is viewed as the best available way to scramble from one solution, which may well be the source of the next problem, on to the next. Berger sees in this the frustration of Campbellian SF authors when they "cannot deliver on their promises of utopia" (29). However, instead of grandiose visions of utopia, the works seem to exhibit faith in the power of science to come up with at least temporary solutions that are good enough for the time being, and faith in scientific advance to produce also new ones as they are needed. Even if it at times seems like a desperate process, it is presented as a well-meaning attempt to save or steer the world. Furthermore, I would contest that while a certain desire for utopia[12] exists in the background, rather than frustrated, it is moderated by pragmatism about what can really be done. This utopian desire is linked with the conviction that human history needs someone enlightened but strong enough to take the wheel because there is no time to arrive at the same results by democratic processes.

Although the leadership by Great Men in both authors' works is supposedly a temporary state on the way towards a new stability, as the pattern of crisis management by any means necessary is repeated, it illustrates the view of history as a perpetual urgency where the ideals of democracy are indefinitely put on hold. As the frontier society of Asimov's Foundation is built and managed through the crises and toward the new Galactic Empire, the characters seek justification in the greater good for all humanity. Heinlein's representation, on the other hand, is more ambivalent and provides more of a satirical commentary on his contemporary world that extends into future by repeating the patterns of past events. Heinlein is at times uneasily walking the line between satire and libertarian jingoism, and much more than in Asimov, in his work the sense of urgency is created through one character's vision of what is good for all humanity – often indistinguishable from their profit-seeking actions in a caricatured world of *laissez-faire* market economy. Nevertheless, also there the ability to understand and make use of history at a moment of urgency becomes a key component of the story.

Especially in Asimov's Foundation series, the idea of enlightened engineers leads to contradictions at every turn. His grand narrative of humanity in the future results in tension between several elements, complicating the all-encompassing vista which it seeks to build. This is repeatedly seen through dichotomies that exist between the concept of history that Asimov's works seem to imply, and the Enlightenment idea of progress. Finally, Asimov's work points toward a tension between the Enlightenment freedom and the increasingly overpowering idea that society needs a mechanism to keep it on the right course – something that surpasses democracy, autocracy, or any 'regular' forms of governing.[13] Still, the point remains essentially the same: forces of history are too haphazard to be left to carry out their course on their own: humanity as a whole needs some kind of guardianship to guide it through the ever-present crises.

As I have argued, the Carlylean conception of Great Man history leads to narratives that focus on the management skills and ingenious ways of manipulation devised by robber barons and merchant princes, and projects worlds where history is made in backroom deals by power elites that claim to work for the benefit of the masses. In the end, it seems that the ideas of authoritarianism and determinism in Campbellian science fiction are a mixture of Enlightenment ideals, positivism and optimism with regard to possibilities of scientific advance, all tempered with cynicism about the nature of human government and history. The crisis-centered and authoritarian-steered conception of history and societal dynamics enables the Great Men to take control, but it also forces

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12   Jameson (2007) and Freedman (2000) talk about the unattainable nature of the utopia which critical utopias have to acknowledge, and while Asimov's work is rather far from this, it nevertheless circles around similar issues and in its own pragmatic way problematizes the whole idea of building utopias.

13   This is something that Asimov begins exploring in *Foundation's Edge* and *Foundation and Earth* with the idea of a galaxy-wide collective consciousness, Galaxia.

them to work tirelessly to find the most immediately effective ways of managing the course of humanity. This dynamic may carry implications of deterministic conceptions of history, but although it has sometimes been viewed as a sign of mere pessimism and cynicism about history and government, the Campbellian heroes, as I have argued here, nevertheless take this dynamic as an exhortation to actively do all they can to assume guardianship over society and to make the best of the situation.

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Intuitive Technologies.
Models of Posthuman Subjectivity in Simon Ings' *Hot Head* and *Hotwire*

Kaisa Kortekallio

Abstract: This article analyzes two novels by the British writer Simon Ings, Hot Head (1992) and Hotwire (1995), from perspectives provided by second-order systems theory, philosophy of neuroscience and posthumanist philosophy. In Ings' cyberpunk fiction, the use of a particular novum, a programmable cerebral tissue called "datafat", enables elaborate experimentation on different theories of mind and matter. Due to this experimentation, Ings' work is able to convey a conception of cognition as an emergent effect produced in material processes that are both human and non-human. Ings' work asserts the human subject as a complex system in a complex technological ecology and, consequentially, presents us with a model for subjectivity that might be called "posthuman".

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"I know that the molecules in my body are traceable to phenomena in the cosmos. . . . That *excites* me. That makes me want to grab people on the street and say: 'Have you HEARD THIS?'" – astrophysicist Neil deGrasse Tyson in a talk given at the Beyond Belief Conference, 2006

There is profound reconfiguration going on in scientifically oriented minds – reconfiguration of the models of human existence and practice. This is rather dramatically explicated by the popularity of charismatic scientists such as Neil deGrasse Tyson, quoted above. The enthusiastic force of deGrasse Tyson's rhetoric resonates with people who are searching not only for explanations, but for meaning: it actually does have the effect of grabbing people in the street and shaking them to feel the awesomeness of the cosmos in their own bodies. In May 2014, his Facebook page has 1.44 million followers, his Twitter account 1.97 million. Scientific theories, and observations made by natural sciences, inspire and effect people, changing not only the way they think but also the ways they perceive themselves and relate to each other. This is nothing new. It is new, however, that the articulated call for alternatives to the totemic image of Man – as an autonomous, unitary subject and

the master of all things natural – can now be heard in public discussions rather than just in postmodern cultural discourse. The capitalized "Man" no longer provides a useful model for identification – rather, there is an acute need for non-anthropocentric models of thought and practice. In search of a functional model of operating in the complex technological, ecological and social environments, many people turn to science – and scientists, such as deGrasse Tyson, who can craft information into intuitively meaningful sentences.

Some people take the additional step of approaching science through cultural criticism. The paradigmatic shift from humanist and idealist models of thought to scientific and materialist thinking has not passed humanists unnoticed: it is the driving force behind many contemporary philosophical approaches, such as the different critiques of classical humanism (see Soper, Sheehan), and interdisciplinary work in fields such as ecocriticism, cognitive literary studies, Darwinist literary studies, literature and science, animal studies and feminist science studies (see Åsberg et al 222). Conversations about the ideologies and assumptions present in scientific discourse and practices have been lead for decades by critics such as N. Katherine Hayles, Evelyn Fox Keller and Donna J. Haraway.

Still, there is more work to be done. One of the areas that call for a more detailed mapping is the construction and mutation of subjective experience, especially in the literature most interested in the scientific mode of thought: science fiction. In contemporary philosophy, there are innumerable theoretical approaches to subjectivity, and the modern and postmodern representations of subjective experience have been thoroughly studied in scholarship focusing on "mainstream" literary fiction. The study of science fiction, however, has not taken up the challenge in quite the same way – partly due to the preconception that science-fictional characters are not interesting, philosophically speaking. They have been dubbed as flat rather than round, types rather than individuals, mere devices for presenting ideas and plot (see Mandala 119–124, Jones 171).

This may be true in many cases. However, there are works of science fiction that speculate not only about technological progression or scientific theories, but also about the potential and alternative developments of human subjectivity. I suggest that in the early novels of British writer Simon Ings, subjectivity is rewritten in particularly interesting ways. Ings' novels *Hot Head* (1992) and *Hotwire* (1995), combining technological speculation and gritty milieus with neurophilosophy and metafictional narration, can be characterized as late cyberpunk. Although Ings has been lauded as an original voice in the field of science fiction (and later as a writer of postmodern fiction closer to the literary mainstream) his work has not previously received attention from critics within the academy.

The primary goal of the article is to show how ideas derived from second-order systems theory and cognitive science are involved in the represented experience of fictional characters, and how this process relates to the concept of "posthuman" In particular, I focus on analyzing how the model of subjects as complex systems evokes a sense of posthuman subjectivity. I argue that 1) science fiction literature is essential for understanding the on-going reassessment of human subjectivity in relation to non-human systems, and 2) that Ings' novels *Hot Head* and *Hotwire* provide a particularly profound model of posthuman subjectivity. All in all, the article is an attempt at applying a posthumanist approach to the study of literature.

The method of analysis in this article is far from perfect. There are brilliant analytical tools and concepts developed in cognitive narratology and cognitive stylistics, and utilizing them would definitely provide a deeper understanding of represented experience. However, at the time of conducting my analyses, I was still unsure of the ideological underpinnings of these approaches, and wanted to avoid blind commitment to traditions. As a result, except for the occasional use of narratological concepts, the reading follows loose intuitive logic based on metaphorical and analogical thinking. I am tracing certain structures of thought – resonant similarities between Ings'

narration and scientific theories. This logic is inspired by the insightful readings made by N. Katherine Hayles (in *How We Became Posthuman*) and Sherryl Vint (in *Bodies of Tomorrow*).

The questioning also employs a phenomenological mode: what could it mean, on the experiential level, to be posthuman? I approach fictional characters as potential models for subjectivity – as experimental positions for a curious reader. I am well aware that this immersive approach involves the risk of antropomorphizing textual constructs. I find the risk not only acceptable, but necessary. For me, the reflective flickering between alternative perspectives – reading characters as people and as processes – is an integral part of the job description of a literary researcher.

The article involves a heavy load of references to scientific theorization. Even though my approach allows for no in-depth analysis of most theoretical aspects, I find it necessary to work towards a synthesis that involves perspectives from both natural sciences and humanities. This stance is dictated by the source material at hand: in order to fully appreciate the complexity of this sort of science fiction, the research needs to be informed by a multitude of approaches. In his fiction, Simon Ings samples the theories of complex systems and cognition and integrates them into a postmodern literary narrative. To leave out the natural-scientific aspect of this elaborate construction would be neglectful. By utilizing multiple perspectives – provided by second-order systems theory, the philosophy of neuroscience and posthumanist theory – I also hope to convey some of the challenges ingrained in the posthumanist mode of thought.

Posthumanist Thought and the Search for Posthuman Subjectivities

The crisis of humanism has informed new conceptions of embodied human subjects – as biological and phenomenological, social and environmental beings. In recent years, theorization identifying as posthumanist has worked towards modeling subjectivity in ways that can acknowledge the many roles non-human entities and systems play in the formation of subjectivity. Posthumanist models of subjectivity have drawn on both the tradition of systems-theoretical (cybernetic) thinking and poststructuralist philosophical discourse. As a result, the models often emphasize the processual and material aspects of subjectivity.

Despite differences in disciplinary background and methodology, the common ground for contemporary posthumanist thinkers seems to be the critique of certain dualist and idealist strains in the tradition of humanism. Whether posthumanist thinking focuses on questions of nonhuman and animal agency and the feminist critique of scientific practices (see Åsberg et al.) or the systems-theoretical approaches to culture and fiction (Clarke, *Posthuman Metamorphosis*; Wolfe), there is an ongoing search for theories and models of subjectivity that can articulate life, consciousness, action and emotion in materialist and non-anthropocentrist terms. In this search, posthumanist thinkers often engage in conversation with natural sciences and technology studies (with variable amounts of interdisciplinary critique). The tradition of interdisciplinarity goes back to the early development of cybernetics in the 1940s, and especially to the Macy Conferences that brought together scholars from fields ranging from psychology and anthropology to mathematical physics and information technology (see Hayles, Clarke and Hansen).[1]

The "post" in "posthumanism" should not be considered as a total break from the tradition of humanism, but as a critical deconstruction of it – in the sense of Lyotard's paradoxical

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1   Another major current of influence to posthumanist thought consists of the work of materialist and empiricist philosophers – from Leibniz, Hume and Spinoza to Foucault, Deleuze and Guattari. This genealogy has lead to coining the term "new materialism", referring to a philosophical approach intertwined with posthumanist thought. Posthumanist discussions (especially the strains that emphasize animal ethics) are also closely linked to different forms of cultural activism such as the animal rights movement and deep ecology. For two exemplary accounts on genealogies of posthumanism, see Neil Badmington's introduction to the reader *Posthumanism* and the editors' introduction to NORA Magazine's issue on "post-humanities".

postmodernism that happens both before and after modernism (Wolfe xiv-xv) or as a critical position inescapably rooted in humanist assumptions and language (Rabinowitz 42–43). In Cary Wolfe's formulation, posthumanism happens "before" humanism

> in the sense that it names the embodiment and embeddedness of the human being in not just its biological but also its technological world, the prosthetic coevolution of the human animal with the technicity of tools and external archival mechanisms (such as language and culture) . . . and all of which comes before that historically specific thing called 'the human' that Foucault's archaelogy excavates (xv).[2]

On the other hand, posthumanism happens "after" humanism as the historical phenomenon of reconceptualizing the human as entangled in technological, medical, informational and economic networks – and the call for a new paradigm of thought to account for these entanglements (xv-xvi).

Often (but not always) the posthumanist discussion is centered around the term "posthuman" – both as a general adjective implying a mode of thought and practice that rewrites the meaning of the word "human" and as a speculative figure, "the posthuman" In both syntactic forms, the posthuman evokes a plethora of alternatives to current models of humanity and subjectivity. In the discussions emphasizing the liberating aspects of technology, the posthuman is a futuristic figure that has transcended the boundaries of nature, finitude and biological embodiment: "the fully technologized successor species to organic *Homo sapiens*" (Graham 9). This transhumanist notion of inevitable advent of the superhuman is what Elaine Graham wanted to question with her formulation "post/human", to which she attributes a dual function: "The post/human is that which both confounds but also holds up to scrutiny the terms on which the quintessentially human will be conceived" (11). The dual function makes the post/human an analytical device, a shifting node in a dynamic web of conversation. This nonessentialist view has been quite popular among posthumanist scholars after Graham's formulation. It is also what makes the term posthuman – even without the cautionary forward slash – so useful for philosophical discussion. In posthumanist thought, "posthuman" denotes above all a change in conceptualizing human subjectivity.

In this article, the use of the terms "posthuman" and "posthuman subjectivity" carries the full weight of the contexts and functions discussed above – and hopefully adds to it. Adding "subjectivity" to "posthuman" is in itself quite problematic, as R. L. Rutsky, among others, has noted. "The subject" has traditionally signified the one in control, the ruler of a world of objects. To control or to be controlled, to be the subject or an object – this dualism has prevailed. According to Rutsky, overcoming this dualism is a central challenge to posthumanist thought:

> [T]he human subject can only conceive of itself in opposition to the random, just as it seeks to control the body, dominate the material world, and narrativize history. On the other hand, any notion of the posthuman that is to be more than merely an extension of the human, that is to move beyond the dialectic of control and lack of control, superhuman and inhuman, must be premised upon a mutation that is ongoing and immanent. From this perspective, there can be no such thing as a posthuman subject - at least, not in the traditional sense of an individualized, unitary and autonomous subject. (Rutsky 111.)

The problem of posthuman subjectivity is also approached in second-order systems theory – or, as Bruce Clarke and Mark B. N. Hansen prefer to call it, neocybernetics. Neocybernetics, highly uninterested in individualized subjects, shifts the emphasis of observation to the networks of connections among systems and environments, both living and nonliving. From this perspective, the subject appears to be only a convention of Western metaphysics, "an amalgamation" or a

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2   Andy Clark would even claim that this very openness to "multiple mergers and coalitions" is what distinguishes *Homo sapiens* as a species (*Natural Born Cyborgs* 7).

"noumenal unity" which deserves no further attention. (Hansen 6.) It is important to note that in systems theory, the definition of a system always involves selection: the boundaries that define a system such as "a human individual" are dependable on the question you want to ask. For a neocyberneticist, the subject is only a matter of distinction: instead of an individual, one can decide to focus on the various psychic and social systems that constitute an individual, or on the interaction and collaboration between an individual and its environment. The individual is dividable and mergeable. What makes this shift of emphasis urgent in the eyes of the neocyberneticists is the increasing complexification of the living environment.

> In today's computational world, countless instances of human agency – even those as mundane as making online credit card and mortgage payments, monitoring information about the weather or the stock market, even writing letters and sending messages – occur against the backdrop of complex computational infrastructures, which geographer Nigel Thrift has christened with the felicitous name of the "technological unconscious". (Hansen 117.)

For Hansen, the central challenge for contemporary cultural theorists involves the inevitable hybridity of systems and environments: how to both recognize the certain consistency of the "human mindbody" and to account for the certain non-autonomy resulting from its reliance to informationally complex environments (ibid.). Hansen's proposal for accounting for this dynamic is the concept of "system-environment hybrids" or "SEHs" couplings that "realize their autonomy . . . through a constitutive relation with alterity". In SEHs, the environmental component cannot be considered as merely supportive of or trivial to the system. (115.)

In cultural theory, the unavoidable and constitutive relation to the (technological) environment has been approached through concepts such as the cyborg and the hybrid. Neomaterialist theorist Rosi Braidotti addresses the contingency of systemic boundaries by suggesting that the formation of subjectivity (on an experiential level) also involves a process of distinction and selection. In Braidotti's poetic formulation, the experience of any unitary subjectivity, of a grammatical "I", is a "fictional choreography" (*Metamorphoses* 22). Braidotti writes:

> The subject is a process, made of constant shifts and negotiations between different levels of power and desire, that is to say wilful choice and unconscious drives. Whatever semblance of unity there may be, is no God-given essence, but rather the fictional choreography of many levels into one socially operational self. (Ibid.)

In this line of thought, every self is fictional – constructed and operated according to models or schemas that are, in turn, constructed and transformed by social, cultural, psychological and biological forces (*Metamorphoses* 13). Despite the notion of fictionality, Braidotti still sees subjectivity as a valuable ethical and political category. She even promotes the idea of "alternative figurations" or *conceptual personae* (in the deleuzian sense) as empowering or affirmative "signposts for specific geopolitical and historical locations" (*Posthuman* 164). The constructivist view on subjectivity can be used as an opportunity for intentional change.

Considered together, these theories pose a challenge. Even if one accepts the idea of the subject as a process or an effect produced in the network of multiple systems and environments, will it always remain just that – an idea, an intellectual exercise? Can the posthumanist models of subjectivity actually be experienced subjectively? And, translated into a problem specific for the study of literature: can these models ever take the form of an identifiable literary character, when characters tend to be just that: individualized, unitary and autonomous, caught in the dialectic of control and lack of control?

These questions call for a deeper analysis of the relations between the traditions of humanism and modernity and the conventional form of literary character – a continuation of the work already started by such scholars as Daniel Punday, Genie Babb and David Porush. However, due to the restrictions of time and format, I must now approach them with a more thematic reading of Simon Ings' novels *Hot Head* and *Hotwire*. I start with an introduction to the representations of non-human systems and cognition in cyberpunk literature.

Cyberpunk and Cognitive Science

In English-language popular culture, non-human intelligence has traditionally been depicted as threatening – whether it resides in technological, institutional or biological systems. The relation between a human individual and a non-human system has typically been that of opposition. Just think of such iconic fictions as *Brave New World* or *The Matrix* – both setting the original human personality against a nonpersonal threat. The function of the hero has been to resist assimilation (even when it is futile) and retain his individuality at all costs. In science-fictional literature, notable reactions to the apparent rise of non-human systems are paranoia about origins, as in Philip K. Dick's and William S. Burroughs' oeuvres (see Butler), and a form of escapism that hovers between technophilia and technophobia, as in gibsonian cyberpunk.[3] As a counterreaction to the anthropocentric heroism of 1970's sf literature, the genre of cyberpunk problematized the relationship between human subjects and their technological others. In particular, it mockingly questioned the position of Man as the master of both nature and technological systems. For the cyberpunk protagonist, this often meant the loss of autonomy and control – and in some cases, also the loss of a unitary self-image. (See McGuirk, Slusser, Bukatman.)

Cyberpunk is often regarded as particularly hostile towards embodiment and materiality. Many cyberpunk texts depict the self-dissolving integration to computing systems as a sort of nirvana, as liberation from the constraints of flesh. As many critics have noted, this is a transhumanist view – it seeks not to decentralize or redefine the human subject but to extrapolate on it, resulting in superhuman or inhuman figures, not posthumans. (See Hayles, Wolmark, Parikka.) As Carol McGuirk has noted, the most novel feature of cyberpunk as a subgenre was its orientation towards the interior: whereas the tradition of "hard science fiction" sent its ships to explore outer space, cyberpunk turned to examine the vulnerable inner space of the human mind (114–115). This orientation is apparent also in Ings' work. What sets him apart from most cyberpunk writers is his remarkable interest towards phenomenological embodiment and cognitive science. Indeed, in reading Ings, a basic understanding of recent developments in cognitive science appears not only useful but crucial. Therefore, a short summary is needed.

In the classical theory of mind, the brain is the seat of human consciousness: a central commander, the subject in a world of objects. However, recent models have also emphasized the *embodied* and *environmental* aspects of cognitive activity, decentering the rational and conscious self. Andy Clark summarizes this process as a three-stage progression: The first stage (*classical cognitivism*) depicted the mind in terms of a central logic engine, symbolic databases and some peripheral "sensory" models. The key characteristics of this vision included the ideas of memory as retrieval from a stored symbolic database, problem solving as logical inference and cognition as centralized. The environment was seen just as a problem domain and the body as an input device. The *connectionist* view replaced these characteristics with the ideas of memory as pattern

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3   Of course, opposition is not the only way of articulating relations between humans and non-human systems in science fiction. There are literary works, such as Octavia E. Butler's Xenogenesis series, that posit the human subject as an integral part of a larger techno-biological ecology – works that do not determine subjectivity through modern notions of originality, individuality and autonomy. In Butler's texts, human subjectivity is produced in social and ecological processes. In this regard, Simon Ings' *Hot Head* and *Hotwire* are similar to Butler's work.

re-creation, problem solving as pattern completion and pattern transformation, and cognition as increasingly decentralized. The third turn – the *emergentist* perspective – also took account of embedded and embodied cognition: the environment is seen as an active resource whose intrinsic dynamics can play important problem-solving roles, and the body is seen as part of the computational loop. Cognition is viewed, not as something "internal" but as a process that takes place in the complex interactions of body, world and brain. (*Being There* 83–84.) The third turn has also been called *embodied dynamicism* by Evan Thompson. As Thompson notes, all three approaches coexist in contemporary research, both separately and in hybrid forms. (*Mind in Life* 4.)[4]

Datafat and Models of Cognition in *Hot Head*

Simon Ings' *Hot Head* (1992) can be considered as a literary application of the progression from disembodied central cognition to embodied distributed cognition. Written at a time when the embodied approach was just gaining a foothold in cognitive sciences and the philosophy of neuroscience (*The Embodied Mind* by Varela, Thompson and Rosch was published in 1991), Ings' novel describes the change of human subjectivity in relation to a series of computational systems. The virtual realities Ings envisions start from relatively logical command-control-systems and build up into rich complexities that cannot be consciously controlled by either human or artificial intelligence. Still, the characters in *Hot Head* strive for some form of control over environmental complexity, even a partial one – and end up using intuitive methods that are described as "magic".

From a systems-theoretical perspective, this process could be described as reducing the complexity of the environment in order to function. The process is tied to the neocybernetic concept of emergence as movement from the chaotically complex to the manageably complex: any particular system that emerges within an environment is necessarily less complex than that environment. In order to maintain its functionality and perpetuate itself, a system cannot process the whole complexity of the environment. It needs to maintain the processes of selection and generalization – there is no perception without cognitive models and categories. (Clarke and Hansen 10–12.)

In the corrupt, technology-driven and islamized early 21st Europe of *Hot Head*, the central character Malise Arnim is a cybernetic soldier implanted with a programmable cerebral tissue called *datafat*. There are two wars, both staged between humanity and a technological other: the first enemy is a conglomeration of mining robots in the Moon, driven to unexplainable rampage against the Earth (bombing down all major cities before being stopped), the other against a similar but bigger AI threat originating in Jupiter. As the enemies become more complex, so does the military technology used to enhance the soldiers.

Malise is taken through a series of transformations that restructure her subjectivity according to the computational systems she is coupled with. From the start, she is written as the object of manipulation – by her father, by her lover Seval, by the psychiatric institution that turns her into a soldier via a restorative video game, by the military that enhances her with datafat and removes it after the first war, and most prominently by Snow, the transhumanist Frankenstein-character who develops the second-generation datafat and uses it to turn Malise into what she considers the next step in evolution: "It's inevitable, unstoppable, as natural an evolutionary progression as the opposable thumb or walking upright" (HH 256–257). Malise is a typical cyberpunk protagonist: gifted, traumatized, abused and addicted. Unlike some of the more technophilic caricatures, though, her suffering is not alleviated by the immersion in virtual reality technologies. Instead, she finds

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4　　"For cognitivism, the metaphor is the mind as digital computer; for connectionism, it is the mind as neural network; for embodied dynamicism, it is the mind as an embodied dynamic system." (*Mind in Life* 4.)

that the symbolic structures that form the base of her personality continue to define her, throughout the transformations into enhanced transhumanity and virtual existence.

As the name suggests, *datafat* is programmable yet organic matter. The tissue functions first as an extension of the human mind, then as a replacement for it. Primarily, it is a control system for weapons technology. However, as both the datafat and the enemy intelligence evolve, the datafat becomes a tool for creating artificial persons and worlds. As a narrative device, datafat is a tool for cognitive estrangement – by replacing the "natural" brain with versions of datafat, Ings can experiment with different theories of mind. The first-generation datafat, operated via conscious control of icons, articulates the relation between the program and the operator in terms of the classical theory of mind:

> To aid her in her mission, Malise has with her some drones, monitors and gash-built peripherals which she controls via the datafat in her skull. She pictures an icon and a menuscape meshes over her vision. She whispers her choice of equipment and the mesh fills with data, graphics and statistics. (HH 59.)

> Hovering just before her was the tree-like icon of her virus. . . . [T]his quick-to-understand symbolic landscape gave her a visual representation of what it could do. It looked right. (HH 70.)

In classical cognitivism, the central metaphor for the mind is the digital computer. Cognitive activity is conceptualized as the formal manipulation of symbols. Meaning is representational, objectively present in the relation between signifier and signified. (See Varela et al 40-43; *Mind In Life* 4–5.) This model of formal and disembodied thought is what is at work in the relation between Malise and the computer program in the above passages of *Hot Head*: Malise chooses an icon – a symbol – and the program responds with a pre-determined action. The operator exists in space as a disembodied point-of-view. This logic of symbolic operations forms the basis of *Hot Head's* model of mind, elaborated further in the next stages.[5]

The first version of datafat features the unconscious routines of the mind explicitly in the icon-based interaction between Malise and the computer. With the introduction of the second version – developed by the neuroscientist Snow – Ings moves towards describing a more connectionist theory of mind. The transition to second-generation datafat is depicted as a painful transformation, involving neurosurgery with ritualistic properties – in Malise's narration, the technicians' strange jargon becomes an incantation, their screens scented fires. After surgery, Malise experiences a new sense of self:

> Her idea of her self was changing, warping, and expanding to fill the new spaces within her. Her homunculus was evolving in strange new directions - cancerous swellings and nightmare etiolations. I've killed myself, she thought, wildly. I've killed the human in me. (HH 99.)

Despite the killing of the self and the human in her, Malise is still an "I" – both grammatically and phenomenologically. Even though she is well aware of her self becoming a model of a person running inside a computational system, she still experiences this self as *her* self. Losing her original

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5   Classical cognitivism divided the mind into two separate regions: the subjective mental states of the person and the subpersonal cognitive routines implemented in the brain. This attempt at solving the mind-body problem ("how can a brain have experiences") resulted in what Ray Jackendorff has called the "mind-mind" problem – the unexplainable relation between unconscious computational states and conscious experience (Jackendorff 1987, 20 < *Mind In Life* 6). The cognitivist model offers no explanation for subjectivity or consciousness, as it focuses on the workings of the unconscious mind – which is depicted as a mechanical operating system, hovering beneath consciousness.

form and giving in to "cancerous swellings and nightmare etiolations", she is disoriented and exhausted, but the change does not lead to a loss of subjectivity.

As Malise "updates" her operating system to second-generation datafat, the distinction between "operator" and "program" disappears. Malise's conscious mind is fully integrated into the system as a subroutine. The system still uses the computational capacity of her brain for its operations, but Malise no longer has conscious access to these operations. All mental action happens completely inside one datafat system that includes both artificial and human intelligence. In this system, it becomes possible for the artificial intelligence (datafat) and the human intelligence (or the model thereof) to instantly adapt to each other. On the subjective level of Malise's consciousness, these transformations take place in immersive virtual environments called "story engines":

> What Snow's datafat does is read and model your whole intelligence. The operator does not work through Snow's datafat – the datafat models the operator and attempts to achieve a rest state between itself and its model. . . . It's like one of your battle'scapes only more complex. It's running in the calculation spaces of our datafat. It's modelling us. You think you're you, but you're really only your datafat's model of you. (HH 169.)

If a narrative of a novel is considered a kind of virtual reality (as Jean Baudrillard has suggested, and as Ings' artistic choices also seem to suggest), then a virtual reality within a narrative can hardly avoid being metafictional. Ings' text openly embraces the philosophical conundrums brought on by metafictionality. As the focus of Malise's point-of-view shifts from her "original" self to that of a datafat model, she becomes a model of a person running inside a model of an environment. Ironically, her operations in the environment become more dependent on her embodied action than they were in the enfleshed world. She can't control the environment with commands any more – all she can do is live in it:

> [I]n a very real sense these places are stories, not landscapes. They're designed to integrate the operator wholly within their structure, in time as well as in space. After a while one isn't aware of performing operations here – one simply lives here. One isn't aware that one is learning anything. The memes act in such a way that it seems one has always known how to use them. . . . The environment adapts itself around whoever inhabits it, like a story rewriting itself for each new reader. (HH 172.)

As tempting as the notion of metafictionality is, focusing on it would not further the cause of this article (there is a risk of it hijacking the whole discussion). A more useful way of reading these passages is to treat them as unusually explicit accounts on phenomenological perception. Read through the computationalist theories of cognition, the virtual environment becomes a metaphorical elaboration on the phenomenological experience of the actual world. Malise – even in her "original" form – is constantly "performing operations" and "running models" but never expressing it with those terms. Phenomenologically, Malise is human – operationally, a machine. The only difference is that in the virtual world she is made aware of the existence of these subpersonal computations. By removing the "natural world" and replacing it with a "virtual reality", Ings clears room for this phenomenological conception of perception.

The idea of a story engine also entails the personal narrative construction of the phenomenological environment. The story engine subtly adapts to the assumptions and expectations of its inhabitants, altering them in the process. Malise is introduced to the story engines by a woman who has, in the course of subjective years, shaped a virtual world of her own:

> The landscape and its ghosts have shaped themselves the better to express my life here with Snow. My memories have been webbed to the fabric of the environment so that I can no longer say what is me and what is external to me. The tastes and smells of the ocean itself have taken on a private meaning. (HH 173.)

In story engines, the relation between cognitive processes and the environment is still viewed as representational (memes act as symbols providing complex meanings for different parts of the environment), but more dynamic than the unambiguous relations in first-generation datafat systems. The emphasis on the interactive learning processes in the distributed system highlights that the story engine is considered a neural network.

Adapting to Environmental Complexity

The third level of complexity in *Hot Head* involves a collective artificial intelligence the size of an asteroid – the Jovian Massive. Originally sent to Jupiter for mining purposes, these semi-intelligent non-human AI's have conglomerated, began to reproduce exponentially and left the planet in search for new hardware and electronics. The AI's endless appetite poses an apocalyptic threat to Earth. Along with other veterans of a previous AI war, Malise is sent to stop the Massive. This includes her physically entering its computational system and becoming a part of it – another model, now run by a different machine.

The environment inside the Jovian's mind is depicted as a large-scale neural network - "the kind of informational matrix that is suited less to the lives of individuals than to the modelling of whole civilizations" (HH 283). It is also labeled "insane". The only functional way to operate in it is to intuitively engage in mythical and symbolic narratives – sacred quests, metamorphoses and ritual deaths. The complexity of these operations is overwhelming to human operators. The only suitable label for the unconscious computations between the subjects-as-models and the world-as-operating-system appears to be "magic".

Particularly important is the symbolic system of tarot. The Jovian uses it to make sense of Malise's personality. "The cards are useful. They act like a kind of . . . story engine. They are a tool-kit by which to describe personality." (HH 292.) It is possible to use tarot this way because Malise's personality has already in her youth been founded on its symbols. Malise's first lover, Seval, has used tarot as a powerful codifier. In *Hot Head*, the reversed Papess card becomes a heavy cluster of personal symbolism, signifying all the violent experiences of her life: the death of her mother, the death of Seval, the previous war. Turning it round becomes an act of transformation – or reprogramming:

> Seval pointed to the fourth card: 'This is beneath you; upon this you are founded. Oh dear –' It was the Papess reversed. 'Lust. Enslavement. Belligerence. We can't have that.'
> She turned the card round.
> 'Hey!' Malise yelled, scandalized. 'You can't do that!'
> Seval looked into her eyes. Her whole face seemed old. Not decrepit – old. Ancient, adamantine. 'You wanna bet?' (HH 143.)

In the climatic ending of *Hot Head,* the Jovian goes through Malise's personal history by re-running them through her subjective experience. Ings reuses the above tarot-reading scene almost verbatim, as he does several other scenes from the earlier sections of the story. As Amy, the Jovian's communication channel, puts it: "The symbols which lie at the very root of your personality will explain your purpose and worth to the Jovian" (HH 292). Until the turning of the reversed Papess card, the reading follows the one made in the past by Seval. As the card is revealed, there is a

significant variation: frustrated with the machine intruding into her past, Malise turns the card over herself – which leads to the final resolution with Jovian. This illustrates rather elegantly the connectionist view of problem solving as pattern completion and pattern transformation. Form is inseparable from content: the complex weave of Ings' prose is repeated and slightly altered, as are Malise's memories and the configuration of the Jovian's mind.

Malise has no idea how the Jovian exactly uses this information to judge her character – but it is implied that the method is some form of complex computation. "I suppose stopping the Jovian was such a complex business, it took all my life experience to contain the necessary memes" (HH 297). However, the general feel invoked here and throughout the story is that of magic – of incomprehensible and illogical happenings that still, on some unconscious level of cognition, make perfect sense. In young Malise's mind, magic forms the basic structure of the physical world:

> Magic works, she thought. Magic does not come from outside the world - it is all around us, if only we knew how to look. It is not a thing. It is simply the way the world weaves itself before our eyes. We obey the weave; we look in the right directions and the world seems solid. (HH 43.)

"Magic" is, of course, just one way of naming unintelligible phenomena. To quote the old SF proverb known as Clarke's Third Law: "Any sufficiently advanced technology is indistinguishable from magic."[6] In *Hot Head,* magic appears as an intuitive explanation for environmental complexity – and a strategy for addressing it. From a neocybernetic perspective, the function of tarot in *Hot Head* could be viewed as a means of reducing the complexity of the environment that is the Jovian system. Ings' "magic" could be considered as an intuitive technology – a means of addressing "the way the world weaves itself", even without analytically understanding it. The symbolic system of tarot serves as a tool-kit for the specific purpose of describing the complexity of a psychic system.

Even though Malise is produced as an integral part of AI systems, as a character she still contains a certain nostalgia for individuality and originality. The symbolic order determining the narrative logic of her life posits her as the warrior character, the war hero – and throughout the story, she has strived to become that hero. The final resolution between herself and the Jovian is therefore anticlimactic and she is left without a purpose in the world. "[I]t doesn't feel like winning. I'd hoped I would get to press its stop button. As it is, I was the button it pressed to stop itself." (HH 298.) Born and culturally inscribed as human, Malise cannot willingly become posthuman. For a deeper vision of posthumanity, Ings has to come up with another character: *Hotwire'*s Rosa.

Technological Ecosystems in *Hotwire*

Set in the same fictional universe as *Hot Head, Hotwire* (1995) also illustrates the embodied and enactive views of distributed cognition. Where *Hot Head* addresses the modeling of cognition and the symbolic construction of subjectivity, *Hotwire's* focus is on life and its emergent properties.

In the speculative historical situation of *Hotwire,* the world teeters on the brink of technological singularity. Human subjects have been made largely redundant by massive artificial intelligences who handle all major analytical and administrative tasks. As the Massives gain more power and coherence of will, the humans are rapidly reduced to the state of "fleas trying to second-guess their dogs" (HW 96). It is not only human-made AI's, but cities and seas too, that emerge as cognizant subjects. As in the wildest transhumanist dreams, the whole material world seems to be "waking up" due to the increase in computational power (see Kurzweil 33, 265–266).

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6   See TV Tropes: http://tvtropes.org/pmwiki/pmwiki.php/Main/ClarkesThirdLaw

Massives also have the power of producing new biological creatures from scratch. One of the two protagonists of *Hotwire*, Rosa, is an artificial girl produced inside a Massive. This Massive, a rogue orbital space station called *Dayus Ram*, is referred to as Rosa's Mother. From this womb-like state, she is transferred to Earth by the other protagonist, Ajay. Ajay is a reluctant hero character, similar to *Hot Head's* Malise Arnim in many aspects: he is also a "hired gun", a component of a superhuman machinery of violence. Like Malise, he is also denied the resolution of a heroic narrative: by the end of the story, he is made to realize that for his whole life, he has been controlled by the needs of other people and institutions. Ajay also plays the human to Rosa's posthuman: the posthuman aspects of Rosa's character are brought out by the contrasting perspectives.

Rosa's Mother is at once a womb, a mind and an ecosystem: a bio-technological laboratory, constantly producing and re-producing novel forms of enfleshed posthumans. Only a small fraction of these creations are made in Dayus Ram's conscious parts, others are of unconscious origin. They take on all the grotesque, sublime and abject forms of speculative posthumanity: talking animals, angels, balls of cancerous tissue inhabited by collective minds. Rosa herself is but one possible outcome of the process of creation, temporal and contingent as the rest of the odd creatures. Roaming the dusty rooms of her mother's unconscious parts, she too is reduced to the scale of fleas and even microbes:

> A fish cannot imagine 'sea'. A tree snake cannot picture 'forest'. A foetus does not know its mother's shape. Rosa, living here, lived still in her mother's womb. She had, as a consequence, no image of her mother. She could no more understand her ma than a bacterium in her gut could know her. (HW 47.)

From a systems-theoretical perspective, Rosa can be considered a subsystem. Like Malise in *Hot Head*, she can be described as an "animate calculator" (HH 253), an integral and oblivious part emerging from a complex whole. In the passage above, her inability to process the complexity of the environment is made strikingly clear. In *Hotwire*, however, this logic acquires a more visceral effect due to ecological metaphors and excessive descriptions of Massive-made flesh. For the purposes of this article, the most important aspects of the novel are the technological connectivity of Rosa's biological body and the peculiar nature of the agency this connectivity brings with it.

Intelligent Flesh and Emergent Consciousness

The bodies of Rosa and other Ma's creations are fashioned from a novel brand of datafat. A few decades of experimenting by mad scientists (both human and non-human, including *Hot Head's* Snow who now rules the world as the primary operating system for emerging AI cities) has resulted in intelligent flesh, capable of connecting and communicating with one's technological environment. As Rosa finds out in a communication loop with a Massive, every cell of her body is made of datafat: "You're all 'fat, little one. All Massive flesh. Each flake of skin. Each cell." (HW 270.)

In Rosa's phenomenological experience, the capabilities of her intelligent flesh are independent of her rational consciousness. Inside her Mother, she is an instinctive being, devoid of individual language or thought, acting without conscious decision. Once she is brought to Earth, her body continues to confuse her – it does not function in the same way as do the bodies of Earth-born humans. Rosa becomes conscious of her receptibility to electromagnetic waves: as she turns off the radio, the song keeps on playing in her head. She instinctively operates everyday appliances, vehicles and weapons by "minding" them, sometimes without consciously willing to. Her abilities

are compared with sexual desire and enhanced by affects like anger and fear. "I don't really know how I do it. I do it is all." (HW303.) It is not her brain alone that connects and computes, it is the entirety of her body, both the conscious and the unconscious aspects of it.

As in *Hot Head*, datafat functions as a tool for cognitive estrangement. It enables a detachment from the traditional dualist model of mind and body, as well as the "skullbound" model of classical cognitivism. As we saw above, it cunningly reroutes the reader's attitude towards embodiment by building on the well-established science (fiction) trope "the brain is a computer". At first, datafat is a cognitive enhancement, an interface tissue, supposedly operating analogically to cells in a human nervous system. Once this is established in *Hot Head*, it now becomes possible to invent bodies constructed completely of intelligent material, resulting in a model where every cell is a computer – or matter with mind. Not exclusively human mind, however, but a mind pervasive in all matter – best exemplified by the emergent intelligence of Massive Presidio's body of water, a "thinking sea":

> She looked out the porthole. Sunlight skittered on the rippling water, like TV interference.
> 'You hear it?' he whispered.
> 'Just white noise.'
> 'Oh no.' He was sobbing openly now. 'Not noise. A harmony. So beautiful!'
> 'The sea?'
> He nodded. 'Presidio!'
> Rosa frowned. Which did he mean? Presidio or the sea? Or did he mean both? But how could the sound be both? What sound? What was he listening to? The rush of quanta from the sea, or some hidden rhythm? Natural music, or minded music?
> And after all, she thought then, who's to say when chaos becomes mind? What stops the sea, as it signs its name in ripples on Waddell Beach, from thinking? May it not one day flux and give over scrawling in the sand, and start instead to manufacture eyes, fingernails, bags of blood and rolls of hair?
> What distinction made her 'artificial' and Ajay 'natural'? Could you not say, with equal rightness, that the Earth had mind to make the things it made? Or that Ma herself was unthinking, a natural force merely, though supplied with handier tools?*Flap* went the waves. Ajay as Earth's signature, Earth's ripple.
> *Flap.*
> Rosa, in her turn, as Ma's –
> Troubled by thoughts that did not seem to come from her, Rosa lost her concentration and found herself looking not at the waves, but through them, at deeper patterns of light, correspondences, shapes, echoes... (HW 267–268.)

In this passage, there are two things that need addressing. Firstly, the form of narration. As Rosa connects to the sea, its mind merges with hers with a subtle glitch in the discourse. The glitch is located at "And after all, she thought then", after which certain poetic grandiosity enters the discourse. Sophisticated phrases such as "could you not say" and "a natural force merely" are not present in the passages where Rosa's mind is disconnected from the Massives. Rosa thinks with Presidio, "thoughts that did not seem to come from her". In this form, her individuality is renounced. As during her time inside *Dayus Ram*, her mind is constructed as an integral process of an environment.

The second thing that needs addressing is the philosophical content of these thoughts. Presidio refutes the distinction between artificial and natural life, moving from the dualist framework – indicated by the conjunctive "or" – to a view supporting continuity of life and mind. On a dynamical level, Presidio *is* the sea, much in the same way as Rosa *is* her body – the thinking subject is an effect of material existence and movement, the rhythm and ripple of waves. This is elaborated later in the "conversation" between Rosa and Presidio, when "mind" is defined as an

emergent "side-effect of being". "The more you are, the more you think. Of course the earth thinks, on one scale. And so do you. Xu's boat thinks too; just not a lot, is all." (HW 269.)

In cognitive science and theoretical biology, the idea that life and mind share a set of basic organizational properties is known as the "strong continuity thesis of life and mind". Simply put, this thesis sees the distinctive properties of mind as an enriched version of those fundamental to life. In Evan Thompson's elaboration of Fransisco Varela's proposition, "living is sense-making", every living system is considered as both an autopoietic and a cognitive system. This broad usage of the term "cognition" is meant to highlight the intentionality present in the enactive self-organisation of all living systems. Even the simplest motile bacteria "make sense" of the world through their sensorimotor and metabolic activities: the environment of a bacterium is more organized than a world as an objective reality. The acts of moving and eating constitute both the bacterium (as an individual or a self) and the environment (as a domain of interactions proper to that self). (*Life in Mind*, 128–129, 158.)

This is the far end of the emergentist approach to cognition. The proposition "living is sense-making" reorganizes life and mind into a continuum: mind is life-like and life is mind-like. Similar ideas can be found in neomaterialist philosophy. For example, in the "vital materialism" of Rosi Braidotti, all matter is considered as affective and self-organizing. "Life" is not codified as the exclusive property of the human species but as a dynamic force that "cuts across and reconnects previously segregated species, categories and domains". This conception of life is signified by the word *zoe* – as opposed to *bios*, the discursive and intelligent life reserved only for humans. (*Metamorphoses* 132, *The Posthuman* 60.)[7]

Despite never becoming a "subject" in the sense of a unitary and autonomous individual, Rosa acquires a certain "competence with the world" (HW 251). This competence is not articulated in terms of control over other individuals or the environment, but in terms of adaptation.

Reminiscent of most teenage superheroes, Rosa's body is superhuman but her social self is not: she is constantly permeated by overwhelming technological, social and emotional influences. For the most part of the story, she is depicted as clumsy, awkward and ignorant. As the other central character of *Hotwire*, Ajay puts it, "Rosa was no goddess, monster, angel, ancient power; she was a girl" (HW 309). On a conscious and discursive level, she does not grasp the complexity of processes permeating her – but she adapts to them and learns to work with them on an embodied and intuitive level. In a sense, *Hotwire* can even be considered as a variation of a *Bildungsroman*, telling the story of the socialization of a young person. However, in Rosa's case, the socialization is not only adapting to the norms and conventions of human society, but also coming to terms with other life on Earth – including the life of her own body. For Rosa, "competence" includes the posthuman dimension of her senses, her ability to "reach out with her mind" towards all entangled systems of the technosphere.

One of the complex processes permeating Rosa's body is the change induced by pregnancy. The originating event is described quite early on in the story – a symbolically loaded sexual scene featuring unconscious Ajay and one of *Dayus Ram*'s surgical operating rooms – but the issue does not re-emerge until Rosa begins to feel the effects the pregnancy has on her. The pregnancy is also described as a loop of technological interaction:

Her morning nausea wore off at last, and in its place came a sensation of power she'd not experienced before. Something inside her, solid and powerful, was giving her energy. Like a battery, she thought. A battery in her belly. She said nothing about it to Ajay. She didn't want him to know

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7   Braidotti's view is linked to what Stacy Alaimo has termed the "material turn" in feminist theory, environmental studies and science studies. Karen Barad has also called for a reassessment of the cultural from the perspective of the material: "How did language come to be more trustworthy than matter? Why are language and culture granted their own agency and historicity while matter is figured as passive and immutable, or at best inherits a potential for change derivatively from language and culture?" (801.)

how strong she was, how capable. She hid from him her growing competence with the world. (HW 251.)

In Braidotti's perspective, the construction of a thinking subject can not be separated from that of a desiring subject. Thinking is seen as "a tendency, a predisposition which expresses the outward-bound nature of the subject . . . a way of establishing connections with a multiplicity of impersonal forces" (*Metamorphoses* 70). "Thinking", in neomaterialist thought, is very much like the all-permeating "mind" in Ings' novels – largely non-conscious, affective and intensive. There is a pre-discursive moment in thinking, a passion for it, like the rippling of waves in the sea that is Presidio. This passion is also present in the descriptions of *Hotwire*'s thinking cities – the city of Rio de Janeiro is expected to develop emergent consciousness on its own (without a human-assigned brand-name personality), a tendency that is expressed in the material flows of masses – traffic, football audiences, crime and carneval. Even if it is not conscious yet, the city can be said to "think" on some level – on the preconscious level of its living operationality. In Ings' novels, the conception of living matter leads to a particular brand of cybernetic animism.

In this monistic model of the world, there is no categorical difference between a Massive-made datafat-body and an earthmade flesh-body. Both are considered thoroughly intelligent due to their living processes. However, it is crucial that Rosa is narratively constructed as different, as posthuman – without this defamiliarization it could be hard for a rationalist sf reader to accept the sense-making capacities of her living body. The posthuman signifies first and foremost a change in the conceptualization of subjectivity – Rosa the posthuman is Rosa the human, just conceptually organized in a slightly different manner. In creating a character that experiences the computational power of her biological system on a sensory level, Ings makes the reader consider the possibility of all bodies having "a life of their own" – and the limits of conscious control.

Conclusions

In *Hot Head*, Simon Ings utilizes the novum of datafat in developing a conception of subjectivity as an emergent effect produced in the interaction of multiple complex systems. Through the painful subjective experiences of the character Malise Arnim, he is able to convey some of the challenges inherent in the crisis of humanist thought: the loss of originality and heroism, and the disorientation of a character whose symbolic construction posits her as the subject in a world of objects. Overcoming this dualism, and the dialectic of control and lack of control, is depicted as a slow and painful process. Malise is constructed as a tragic character, striving towards a goal that has no practical value in a fictional world where individual heroism has been replaced by the strategies of collective environmental adaptation. Malise cannot escape the systems that produce and define her any more than she can escape her own living body.

Hotwire's Rosa evokes a different kind of subjectivity. She is produced as a posthuman creature, devoid of individualized language and agency. In the narrative construction of Rosa, datafat acquires a new purpose as a device enabling a conception of thoroughly intelligent flesh. Rosa has little conscious control over the operations between her flesh and the technological environment. However, both Rosa and Malise find ways of reducing the complexity of their respective environments. In Ings' prose, the strategies of adaptation acquire forms that would appear paranormal in any other context: tarot readings and animistic communication. In the logic of Ings' prose, these actions are constructed as thoroughly material – based on the premise of the living intentionality of matter itself.

Ings' work is exceptional in its thorough utilization of systems-theoretical ideas and recent developments in cognitive science. Still, it is not the rational communication of ideas that makes the work exceptional, but the integration of these ideas into the representation of subjective experience. In Malise and Rosa, Ings manages to convey modes of experience that might be called 'posthuman subjectivity.

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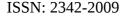
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"Dragons are Tricksy":
The Uncanny Dragons of Children's Literature

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Abstract: As early as the sixties, scholars of children's literature have noted a trend to soften and satirize the dragon for children. This disconnect with traditional dragons has been bemoaned as ruining the mythic and archetypal power of dragons. Yet there may be more potent dragons lurking in children's literature than readily apparent, due to one significant aspect of traditional Western dragon-lore: the eerie feeling or mood cast by a dragon. The original dragons of Germanic lore, from which many children's literature dragons descended, were not just large scary beasts, but they also created a distinctly unsettling atmosphere in their stories. Modern tamed and human-like children's literature dragons borrow certain uncanny qualities from the older generations of dragon-lore to become potent, if not always life-threatening characters. In specific, two traits borrowed from the original lore inspire uncanny doubling with their human counterparts: the dragons' intensely possessive gaze and their clever, manipulative speech. This article analyzes these Freudian inheritances to argue that children's literature dragons have not been entirely softened and satirized; the potential for uncanny fear embodied by the human-like behaviors of legendary Western dragons lingers in many modern children's literature dragons. This potential reveals that dragons are still strong characters and can and should be analyzed productively through a Freudian uncanny lens.

J.R.R. Tolkien once declared that "the dragon in legend is a potent creation of men's imagination, richer in significance than his barrow is in gold" ("The Monsters" 16). Dragons in mythology have come to be recognized for their value as representations of ancient cultures or as worldwide archetypes. Anthropologists have found and studied dragons in nearly all surviving mythologies; medievalists have examined them in manuscripts and bestiaries. In modern literature, dragons have flourished in their newer realm of fantasy and children's literature as one of its most pervasive mythic animals.

Yet within children's literature, scholars have noted a trend beginning even before the dragon's mass popularity in fantasy to soften and satirize the dragon for children. While this type of friendly dragon has become a well known resident of children's books, this article argues that children's literature dragons have been not been entirely softened and satirized; the potential for uncanny fear embodied by the human-like behaviors of legendary Western dragons lingers in many modern children's literature dragons.

Fluffy Dragons

In comparison to ancient dragon lore, modern dragons for children inspire less terror and more laughter, beginning most noticeably with Kenneth Grahame's "The Reluctant Dragon" in 1898. Ruth Stein in 1968 and Margaret Blount in 1974 both comment with distaste on the increasingly cuddly, "fluffy" nature of dragons in children's literature. In a short article for *Elementary Education*, Stein expresses hope that Tolkien's Smaug would improve the literary dragon's evolution and encourage properly scary dragons. While this has since proved true in part, the bemoaned fluffy dragons remain prevalent alongside Tolkien's menacing breed. Nonetheless Blount, in a later book, stipulates that as long as dragons retain their capability to inspire awe they could be less than terrifying and still remain "real dragons" (129). She points out several stories that fail to keep the awe of dragons alive, and most of the failures revolve around dragons that generally behave like humans and sometimes retain only one dragon characteristic, usually fire-breathing, in order to inspire conflict. Jon Stott, in 1990, shows less concern over what a "real" dragon is and even praises the proliferation of fluffy dragons, including Grahame's dragon, as parodies of the outdated cultural codes represented by traditional dragon lore (222-223).

Hope Shastri's 1992 dissertation on the picture book dragon gives concrete results to support the observations of scholars like Stein, Blount, and Stott. Shastri performed a content analysis of 151 picture books produced between 1950 and 1992 in order to ascertain whether or not dragons have preserved their range of mythic capabilities in that form of children's literature. She divides picture book dragons into three categories: Household (the type that Blount accused of failure), Wildwood (untamed, living in the wild and closer to Tolkien's sort), and Imaginary (clearly pretend or a dream on the part of a child) and identifies thirty traditional dragon traits such as breathing fire, consuming humans, guarding treasure, talking, flying, and being vanquished. After applying these categories and traits to all 151 books, Shastri concludes that picture book dragons have effectively lost the majority of their original mythic qualities, save fire-breathing, and have largely become tame and meek—especially the Household dragons, out of which she finds 86% to be denatured as opposed to 34% of Wildwood and 42% of Imaginary dragons (77). Tina L. Hanlon generally agrees with Shastri's findings in her own examination of 100 picture books in 2003, but she also notes with some hope the resurgence of strong dragons in retold fairy tales. In total, the work of these scholars over the past two decades indicates that dragons in children's books are increasingly humorous and less and less fearsome, just as Stein feared when she wrote over forty years ago.

Dragons and the Uncanny

There may be more potent dragons lurking in children's literature than these observations and studies indicate, due to one significant aspect of Western dragon-lore: the eerie feeling or mood cast by a dragon. The traits listed by Shastri focus on characteristics of the dragons themselves but do not include the emotional environment created by the dragon within the literature or with the audience. Stott acknowledges the fear inspired by traditional dragons due to their size and fierce

temper, but his analysis addresses only the physical threat of the dragons and implies that this fear is entirely lost when parodied (224). Blount comes close to recognizing this deeper psychological effect of dragons when she writes that a quality children's literature dragon should still inspire awe. Awe and fear, yes, but the original dragons of Germanic lore from which children's literature dragons descended were not just large scary beasts, but they also created a distinctly unsettling atmosphere in their stories.

This uncanny quality of these ancestral dragons derives from their unnatural similarity to the heroes who defeat them; the dragons are doubles for humanity. Joyce Tally Lionarons and Jonathan Evans, scholars of medieval dragon-lore, assert that dragons such as the famous Fáfnir were terrifying and effective characters in epics because they vied with people for the right to be "human." According to the classic definition by Freud, the uncanny double occurs when "one [person] possesses knowledge, feelings and experience in common with the other" and is also sometimes "marked by the fact that the subject identifies himself with someone else, so that he is in doubt as to which his self is, or substitutes the extraneous self for his own" (234).[1] Freudian psychoanalysis has been applied to dragons in fairy tales by such scholars as Bruno Bettelheim, but he posits dragons as the dangerous, untamed id or the projection of oedipal issues by the child hero (76). Bettelheim's analysis also locates dragons as an internal hero conflict, which in many ways complements to my argument here, but I focus on Freud's concept of the uncanny rather than his superego-ego-id construct to explain the way that modern dragons can still unsettle readers even when the plot does not follow the traditional human hero questing to slay a physically fearsome dragon. Modern tamed and human-like children's literature dragons borrow certain uncanny qualities from the older generations of dragon-lore to become potent, if not life or ego-threatening characters. In specific, two traits borrowed from the original lore inspire the uncanny doubling with humans: the dragons' intensely possessive gaze and their clever, manipulative speech.

The remainder of this article will further explain how the dragon's potent powers of vision and language operate as uncanny traits, how vision and language are recognized by scholars of Germanic dragon-lore, and how these traits were translated into children's literature through such landmark texts as Grahame's *The Reluctant Dragon* and J.R.R. Tolkien's Smaug in *The Hobbit* (1937). Finally, I will examine some examples of the uncanny vision and language of the dragons of modern children's literature through the middle-grade reader *How to Train Your Dragon Vol. 1* and the picture book *Hush, Little Dragon*. These books serve as purposeful case studies intended to represent recent English-language literature for the youngest to middle-grade readers. Each book was selected out of a pool of potential recent dragon books because they represent clear, but not extraordinary or unusual, examples of tamed and human-like dragons, respectively. I mean to ultimately use these texts to demonstrate that while many commonplace modern dragons have evolved away from their ancestors to good or bad effect, the visual potency and intimacy with language inherited from older dragons remain a potent, if largely invisible, means of creating uncanny dragons in children's literature. Stein and Blount protest the appearance of increasingly human dragons, but this very doubling has the potential to rescue the awe of dragons as long as they are just different and frightening enough to achieve the uncanny.

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1   Admittedly, Freud dismisses fantastic tales as potential hosts for the uncanny, saying "I cannot think of any genuine fairy story which has anything uncanny about it" (246). However, many scholars before me have disregarded this qualification of the uncanny and applied it to fantasy and fairy tales alike. See Peter Straub's "American Fantastic Tales: Terror and the Uncanny from Poe to the Pulps" for an overview of the uncanny in fantastic American stories or David Rudd's "An Eye for an I: Neil Gaiman's Coraline and Questions of Identity" for a more specific application of Freud's uncanny to a fantasy text.

The Uncanny Dragon, Then and Now

The dragon's eyes hold much of its power, as well as its ability to inspire uncanny fear. In Freud's concept of the uncanny, the eyes are a frequent site of fear in two ways: as a displaced castration complex if the eyes are threatened, and as the evil-eye threatening oneself (231, 240). Colloquially considered windows to the soul, the eyes are also a significant cultural location for human identity. Likewise, the dragon's powerful eyes are one of its identifying features and greatest assets in its efforts to seize human identity. When discussing the Indo-European name for the dragon, Jonathan Evans says that the Greek root "*drk-" originally means "to see, to watch" and "*drk-on" would mean something like "seeing one" ("As Rare" 23). Evans asserts that accordingly many Indo-European dragons are watchers and guarders responsible for keeping an eye on a treasure of some sort, and many have piercing or unnatural stares to discomfit potential attackers (23). The Greek dragon's name and identity is based on its power of sight. The "unnatural" stare that Evans mentions also creates an eerie sense of the intelligence behind the dragon's guardianship, a power and vision comparable if not superior to humanity's. The human hero is responsible for guarding the people, the dragon for guarding the treasure. Until one defeats the other, they are equally identified as powerful over-seers threatening one another's guardianship. Traditionally, when a hero faces and defeats a dragon, the slaying extinguishes the dragon's superior vision. In doing so, the hero establishes himself as the greater power and superior identity as watcher-guardian. This challenge over the hero's watcher-identity invokes the Freudian evil-eye or blindness as castration, making the dragon's threat to one's identity as watcher-guardian uncanny.

Alongside the eyes, the dragon's uncanny powers manifest in its associations with speech. As far as we know, dragons are primarily imaginary creatures that emerged from within the oral and written realms of storytelling.[2] In Western literature, they leapt into being as an invention of language and shortly after acquired, within stories, the ability to out-speak humans.[3] In creating language-capable monsters proficient with the tools of linguistic creation, poets and bards fashioned in dragons a double for themselves: the dragon as wielder of language and the raw potential for language—including the risk that language could escape human control and become dangerous. In this way dragons stole the human invention that created them and ventured uncomfortably close to humanity through the ability to speak with equal or superior eloquence. While other animals speak in legend and fairy tale, most of these creatures existed before language named them, and their words are simple and communicative. Dragons in contrast could not exist without language, and have a high language skill demonstrated through fondness for riddling talk and a tendency to use it aggressively.[4] Furthermore, traditional dragons are notoriously evil where regular animals are not. Deirdre Dwen Pitts writes that folklore animals "date from the time when the world was not yet man-oriented and man and animal struggled together against uncontrollable natural forces" (169). These animals are on the humans' side: "Animals are rarely the antagonists in these tales; enemies are usually undefined monsters, ogres, witches, giants, devils, demons, with only an occasional wolf" (169). Oddly missing from this list are dragons, which are also frequent enemies and shadows of humanity. The dragon is, like the uncanny, that which "ought to have remained secret and hidden but has come to light" (Freud 225). Many of the most terrifying and memorable dragons rely on

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2   See Grafton Elliot Smith's *The Evolution of the Dragon*, Charles Gould's *Dragons, Unicorns, and Sea Serpents: A Classic Study of the Evidence for their Existence*, Ernest Ingersoll's *Dragons and Dragon Lore*, and David E. Jones's *An Instinct for Dragons* for an overview of the classic and updated debates on where the dragon in myth came from, whether or not it ever existed, and how it spread across the world.

3   The oldest proto-dragons were mythic characters like the Babylonian Tiamat, a goddess who could of course speak. However, this paper largely concerns Western dragons from the point when we can culturally recognize them as dragons. It is at this point that the dragon's relationship with language becomes noticeable and also problematic.

4   The sphinx and trolls, other frequently riddling creatures, are recognized as proto-dragons. See the work of Charles Gould and Ernest Ingersoll in works cited.

their use of language to inspire fear and awe due to being distinctly unwelcome doubles for humanity.

Although the dragon may imitate humanity through its roles as watcher and speaker, its physical properties keep it unfamiliar enough to be uncanny. The dragon's appearance comes down as inconsistent through European lore, but the medieval dragon is never nice-looking or aesthetically pleasing. This traditional dragon combines frightening and uncomfortable aspects taken from beasts who threaten humanity: snakes, big cats, and birds of prey.[5] Therefore when this undesirable anti-human claims human identity, the thought becomes inherently unsettling to humans. Having this conglomeration of everything that one finds frightening and uncomfortable nearly become the same as oneself produces the uncanny doubling effect. Furthermore, Freud suggests that the familiar unfamiliar of the uncanny is the result of repressed experiences (241); accordingly many of these old stories imply that the dragon embodies the repressed dark side of the hero.

In the medieval Germanic dragon myths, the dragon watching over a hoard becomes an uncanny double for the hero watching over the people. In *Beowulf*, the poet uses identical words to describe the roles of Beowulf and the dragon. At different times he calls them both *aglæcan*, meaning "warrior," and only context distinguishes the hero from the dragon (Lionarons 30). The same phrase *hordweard* or "hoard-guardian" refers to both. The dragon's lair is called a *dryhtsele*, the term used for a human king's hall (30). These examples of parallel naming reveal the doubled natures of hero and dragon as well as their conflicting positions. They perform the same job, but only one can succeed. In the inevitable conflict, the two guardians are so similar they nearly cancel one another out. Both kill one another; only narrowly does Beowulf come out on top as the successful overseer. By killing the dragon, he proves an effective guardian of his people from the dragon menace, but he also performs the final viewing and therefore possession of the dragon's treasure. The two concepts are connected, as the poet shows through Beowulf's insistence upon seeing the treasure before dying. When Wiglaf brings it to him, Beowulf gazes on it and says, "I give thanks / that I behold this treasure here in front of me, / that I have been allowed to leave my people / so well endowed on the day I die" (ln 2795-2798). He believes the treasure he has won could support his people, and therefore what the dragon has been watching over has been converted to a part of Beowulf's ward. His ability to look on the treasure assures him that he has won the battle of eyes.

The language of the Germanic dragons also doubled them with humans, and in two ways: the way that the dragons were spoken about and the way that they spoke. Aside from how similar words are used in *Beowulf* to align the hero and the dragon, the Indo-European dragon-slaying myth has its own special verb formula reserved for the epic killing of dragons. In her book on medieval dragons, Lionarons points out that instead of an active verb such as "to slay," the dragon-slaying verb is self-reflexive and roughly translates "to become slayer to" (6). The action of slaying defines the hero/slayer against the dragon/slain. The way this particular verb functions, Lionarons notes, "suggests a covert similarity between subject and object, hero and dragon" (6). The cosmic dragon-slaying myth and later the legendary hero tale, she explains, worked through one voice silencing the other—the battle is over language since the winner gets to declare himself to be the god/hero and the loser to be the dragon (8). The need for such a battle reveals the uncomfortable similarity between heroes and dragons in the tales of dragon-slayers such as Sigurd, Þiðrek, Beowulf, and Thor. Each hero ultimately defines himself as the hero; it is the narrow margin of success and uncertain hero status that creates the uncanniness.

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5   Smith uses this combination of predator traits as the foundation for his theory that dragons result from residual predator-prey instincts left over from the evolution of humanity. In his book, he details how these attributes are present in every mythological dragon in every culture across the world.

The dragons also use language to fight for the speaking, dominant role, as can be seen in the verbal battle that occurs at the death of the dragon Fáfnir. In the *Volsunga Saga* version, the hero Sigurd kills Fáfnir through a trick; the actual violence is brief. As the dragon slowly dies, it speaks (*Volsunga* 78). Lionarons claims that the conversation is riskier than the attack, for despite Fáfnir's mortal wounds, he threatens to take the winner's right as silencer through engaging the Germanic genres of the *senna*, death song, and wisdom poetry (69). The *senna* is a stylized battle of words accomplished through ritual insults and challenges meant to establish one's social place. When Fáfnir engages Sigurd in this battle, as Armann Jakobsson puts it, "readers will be prone to an eerie feeling that the dragon is somehow outwitting Sigurðr" (31). This eerie feeling results from a distinctly non-human entity fighting for the human social rank of hero, and doing well. The dragon's skill at word-play indicates that the non-human may actually be better at the human's game of language. Fáfnir nearly wins through wisdom poetry that touches on the cosmological and silences the hero. Sigurd, in his efforts to outsmart Fáfnir and find an unanswerable question, asks about the end of the world: "How namest thou the holm whereon Surt and the Æsir mix and mingle in the water of the sword?" (*Volsung* 80) Surt, the fire giant, is fated to destroy the world at Ragnarok in a battle against the Æsir. The beginning and the end of the world in Norse myth revolve around the conquering and resurgence of chaos, embodied in part by the Midgard Serpent, Jormungandr, the immense dragon that was defeated at the world's creation by Thor and will in turn defeat Thor at Ragnarok. In asking about the cosmic end, Sigurd questions the farthest reaches of wisdom and speech, being and non-being, and the cosmic battle of dragon and hero, which he is re-enacting in miniature. Fáfnir replies, in many translations: "Unshapen is that holm hight," or the island is not named (80). In the original Icelandic, he calls the island "Oskopnir" (Hunt). Translations of the "The Lay of Fafnir" from the Elder Edda often phrase the reply: "Oskopnir it is called" (174). August Hunt claims that translating the word as a mere lack of name misrepresents it. The –nir is a basic Icelandic suffix, but combined with Oskop-, meaning "umade," it could instead indicate the "island of unmaking" (Hunt). Therefore the island could be not yet made, not yet named, or the place of the final unmaking. Possibly all three at once, straining the human mind to embrace the dragon's polysemic phrasing. Fáfnir's bewildering understanding and deft verbal expression of cosmic knowledge hushes Sigurd. The dragon's next words, Lionarons claims, change from wisdom poetry to a death song—a genre reserved for dying heroes. Sigurd interrupts and steers them back into the *senna*, narrowly getting the last word and walking away with his victory and identity as the hero intact. This threatening similarity between Sigurd and Fáfnir exemplifies the speaking dragon's uncanny ability to become the supreme double and threat to humanity.

From Victorian Satire to Modern Fantasy

Following the medieval surge of Christianity in Europe, the Germanic legends of Western dragons became inextricably tied to the Devil-dragon of Revelation and far too allegorical for use in common secular stories, according to Ruth Berman. Not until the late 1800's, with the discoveries of dinosaur remains, were dragons tenable outside of allegory (Berman 220). At that point, Berman claims, Kenneth Grahame's lighthearted, secular story "The Reluctant Dragon" in 1898 helped resurrect the dragon from its allegorical existence. Grahame's was a carefree and satirical dragon— far removed from the heavy religious matter of Revelation. Grahame's version retained only subtle traces of the dragon's menacing eyes and language and made his dragon prefer poetry or being a spectacle over fighting. Again, a human hero of the tale, the shepherd's boy, doubles the dragon in that he also writes poetry, "heaps of it" in fact, and would very much like to watch a spectacle (335). The dragon and the boy differ though, when it comes to violence. The dragon prefers grammar and chastises the boy: "Don't be *violent*, Boy, . . . Sit down and get your breath, and try to

remember that the noun governs the verb" (337 emphasis in the original). The boy wants a fight between the dragon and St. George, whereas the dragon wants to compose sonnets and be visually admired. Eerily, compared to the Germanic tradition, this preference implies that the dragon has won and bears the human values of peace, tolerance, and love of beauty (and good grammar) more than the humans. The dragon openly resembles humans and has more desirable human traits than the hero. Grahame's dragon uses his lingering expertise with vision and words to find a place in society with just as much if not more status than the hero—only he accomplishes it nonviolently. St. George agrees to help the dragon create the illusion of a battle, culminating with the visual trick of a stab "in the spare place agreed upon" in the dragon's neck-folds (347). This battle upends the dragon/hero struggle for visual dominance as the dragon and hero use it against the common people instead. The dragon then uses persuasive, eloquent language to rise in society to the point that "the Saint and the Boy, as they looked on, felt that they were only assisting at a feast of which the honour and glory were entirely the dragon's" (348). The dragon's language here is a joke on the *senna*, the ritual of insults and boasts to gain social standing. In the end, the reluctant dragon uses eyes and language to claim humanity in a milder, subtler way than in the Germanic lore. Grahame, in avoiding the evil associations of the Satan-dragon of Revelation, suppressed the dragon's uncanny verbal power further below the surface. His dragon is hardly scary, but it clearly wins "the honour and glory" (348). However, the reluctant dragon's uncanny victory does not mean that every kindly dragon carries this underlying success. Edith Nesbit's friendly dragon in "The Last of the Dragons" (1925), for instance, is tame and prone to crying over small kindnesses. In the end, the dragon submits to being transformed into the first airplane since he is desperate to serve humanity —a far cry from Grahame's dragon's subtle conquest and put-down to humanity. Not all children's literature dragons seem to take up these uncanny aspects, but Grahame's version demonstrates that the potential is there, even in satire.

Tolkien, a scholar of Germanic literature and vocal fan of its monsters, refreshed the uncanny and traditional dragon traits in his influential fiction. Tolkien's dragon Glaurung was modeled on Fáfnir and paved the way for scary, language-manipulating dragons in children's literature. Evans has noted that the *Volsunga Saga* shaped Tolkien's tale of Túrin Túrambar ("The Dragon-Lore" 24). In this tale, Glaurung catches Túrin in his gaze and holds him, speaking horrors into his mind and through his eyes. Later he holds the gaze of Túrin's sister Nienor for days until she is stripped of her memory and identity. Túrin is "bemused by the eyes of the dragon" to the point that he "believed the words of Glaurung" to his demise (*Silmarillion* 214). The dragon's eyes allow his words to penetrate. In Glaurung, Tolkien synthesizes the dragon's power of sight and uncanny lingual skill. Tolkien's later dragon Smaug, who was intended for a child audience, preserves the eeriness of the dragon's glowing gaze but focuses on the dragon's speech. When Bilbo approaches Smaug for the second time, the paragraph of description concludes with the terse, powerful sentence, "Then Smaug spoke" (*Hobbit* 241). Jakobsson explains that at "the moment it speaks, it becomes a character, an intelligent person who is not merely governed by his bestial instincts." (28). Smaug's suave power of speech makes him an eerie cross between human and beast, and increases his threat to the humanoid characters (29). Thus Smaug can be held up as an early model for the overtly (more so than Grahame's, anyway) uncanny and dangerous dragon in children's literature.

Tolkien is regularly recognized as a foundation of modern fantasy, and his reconstitution of the ancient eeriness of dragons is likely to have influenced many other fantasy writers who took up the dragon. Ursula K. Le Guin and Anne McCaffrey both used the dragon's lingual skill to redefine dragons' bond with humanity, and their versions continue to affect literary dragons. However, their sort of clearly powerful dragons dwell primarily in young adult and adult fantasy. Books intended for the youngest readers instead temper Tolkien's potency with Grahame's subtlety, disguising most powerful dragons. Not all children's literature dragons unlock this potential—in fact it often

remains entirely untapped, as with Nesbit's dragon—but there are still powerful dragons created by writers who choose to or unintentionally employ the methods of uncanny doubling adapted from Germanic lore by Grahame and Tolkien.

The Dragon in the Nursery Mirror

Within children's books reside many overlooked frightening and uncanny dragons. The middle-grade reader *How to Train Your Dragon Book 1* and the picture book *Hush, Little Dragon* present dragons that at first glance appear mocked or belittled. Yet through their subtle, uncanny vision and language, these dragons exemplify the potential for children's literature to inspire the same ancient fear of the dragon-double without being too blatantly scary.

How to Train Your Dragon

In the first volume of Cressida Cowell's *How to Train Your Dragon* series, the dragons become uncanny through the demonic power of their eyes as well as their language-based relationship with humans. While these dragons do not guard or watch, their eyes inherit Smaug's glowering menace. The hero Hiccup recalls learning that "the gaze of a dragon is hypnotic and gives the unnerving feeling that it is sucking your soul away" (71). This "unnerving feeling" parallels the uncanny. Hypnotic or magic eyes imply that a dragon's gaze may overpower a human's. In this way dragons have the phallic power and the concept of sucking the soul threatens identity, even if it is only actualized as a feeling. Even in the illustrations (ostensibly drawn by Hiccup) the dragon's eyes are regularly more sharply drawn than the humans' relatively round ones. Since the powers of dragons in this book are relative to their size, Hiccup finds later that the massive sea dragons have such powerful vision that they can see beyond the physical world. When he asks the sea dragon how it knows all about his family and problems, the dragon simply says, "I can see things like that" (154). This vision transcends the plane of physical reality, a truly staggering power beyond humanity's capabilities even in this fantasy world. The only drawing of Hiccup's meeting with the giant sea dragon mirrors the massively frightening visual capabilities of the dragon: the dragon's eye looms behind and dwarfs Hiccup, who is smaller than the reptilian slit pupil of the sea dragon's eye. As the sole visual representation of their banter, this image encapsulates the entire terrifying encounter through the enormous size and power implied by the dragon's eye.

Language in Cowell's book superficially separates the humans from the dragons while showing them to be the same. Neither side is competing for the right to speak, but rather they are both speaking and ignoring one another; the humans win only due to size. The Viking humans of the story train the smaller species of dragons to behave like hunting dogs through yelling at them as loudly as possible. While the dragons do speak their own language, Dragonese, there is a strict law against speaking to dragons in their own language. The Vikings justify their law thus: "Dragons might get above themselves if we talk to them. Dragons are tricksy and must be kept in their place" (142). Cowell overtly makes language here the differentiating point between humans and dragons and a tool for the former to subjugate the latter. Despite the law, some of the Vikings want to deny that dragons can speak at all. When the young hero Hiccup tries speaking to his tiny pet dragon Toothless, his human friend shouts, "You can't talk to it, it's an ANIMAL, for Thor's sake!" (71). As a point of similarity between humans and dragons, language is a repressed topic for the Vikings. Erasing this fabricated line makes dragons uncannily close to humanity and not qualified to remain in the category of animals. In reaction, the Vikings try to define the dragons as far from humanity.

The dragons want to be distinguished from the humans just as fervently. They claim that they are better, but they also deny their similarities to humans. The dragons' language itself, which puts them on par with humans, is just a different dialect of the Viking's language (which is English, in this universe). One silly informational page states, "dragons are the only other creatures who speak a language as complicated and sophisticated as humans" (70). This is its own joke, as Dragonese is a dialect where "Doit a wummortime" printed in a jagged font or spoken out loud with "shrill shrieks and popping noises" is the colloquial equivalent of just what it sounds like: "Let's try that again" (70). Dragonese is only as complex as the human language because it is essentially the same. The silliness of this doubling recalls the Grahame tradition, wherein the eeriness of dragons is retained under the guise of humor. Instead of praising either language, Cowell's informational page compares the stubbornness of both races behind the joke, which reveals that they're speaking the same one. The Vikings do not want to admit that the dragons have a language to speak; neither side wants to recognize that Dragonese is merely another dialect of the human language. Both sides refuse to talk to one another, drawing them into further parallel.

Even Hiccup—as progressive, unusual and creative as he is—is uncomfortable with talking to the dragons. He resists at first and later avoids proficient use of the language. He lists "jokes and riddling talk" as the last item on his list of possible ways to motivate his dragon and adds the note "only if I'm desperate" (92). Jokes and riddling talk are not just speaking Dragonese, but speaking special formulas within it that indicate fluency and clever manipulation of the words. Hiccup is clearly uncomfortable, but only successfully communicates with Toothless through jokes. His discomfort reveals that it is psychologically troubling to him to be getting so close to his dragon through its language.

When the giant sea dragon shows up, Hiccup must graduate from the less complicated realm of jokes and into full-blown riddling talk. He joins the sea dragon in philosophical pondering akin to Sigurd and Fáfnir's wisdom poetry, but about the nature of death. The dragon here verbally accomplishes the feat of putting humans and dragons, regardless of size and status, on the same level: "We are all, in a sense, supper. . . . even a murderous carnivore like myself will be a supper for worms one day" (151). Hiccup doesn't really win the battle of words to dismantle this similarity, but he does successfully avoid becoming consumed by the dragon by tiring him out with words. In his later encounter with the same giant dragon, Hiccup confronts his similarity to dragonkind more profoundly. After landing inside the giant dragon's mouth, he finds the dragon getting inside of him: "The terrible noise of the Dragon's heart beating had entered into Hiccup's chest and forced his own heart to follow the same rhythm" (188-9). Hiccup finds himself blending into the dragon and losing his identity and willpower due to the dragon's digestive powers. This is a literal rendering of the threat to the identity of the Germanic hero during the dragon battle. Just as Tolkien's Smaug invades Bilbo's mind through manipulative language about the dwarves, the sea dragon threatens to invade Hiccup's mind to merge them into one being. Beforehand, the sea dragon and Hiccup were uncanny doubles because they each are thinking, speaking beings. At the moment that Hiccup hangs within the dragon's mouth, the hero and dragon nearly move beyond to become the same creature. The uncanny is the threat of this merge, the warning to stay away. By returning intact as his own person, Hiccup conquers the dragon psychologically before it is physically defeated. He resists the transformation and escapes, having defined himself by the willpower to live as the hero and the human.

The book resolves when the same difference is established on the side of the dragons. Toothless, after his heroism in rescuing Hiccup, is the first dragon to receive a human Viking burial. Hiccup, given his recent conquest over the dragon-assimiliation, does not approve of this complete blending. He has learned that dragons are different from humans in key ways and that bridging the gap is fine, but removing it is not. Because of this insight, Hiccup knows that treating Toothless as dead by human standards is inappropriate for he has not yet met dragon standards of death (a

dragon will sing at and after its own death). Toothless learns to distinguish between bridging and merging too. Toothless tells himself, "Dragons are S-S-SELFISH . . . Dragons are heartless and have no mercy," even as he flies to the rescue of Hiccup and risks his own life (192). Despite this flouting of dragon rules, he does not entirely change. The final page features an illustration wherein Toothless amends his statement "Dragons are never grateful" by scratching out the word "never" and replacing it with "hardly ever" (214). Hiccup and Toothless ultimately both acknowledge the similarity between dragons and humans, as well as its benefits, and come out as heroes because they retain the differences too. In this way the book nearly addresses the uncanny nature of dragons head on by dealing with the troublesome line between them, as is primarily demonstrated through language. The protagonist boy and dragon both learn to define themselves individually rather than purely through antagonism and fear of each other as doubles.

Hush, Little Dragon

In *Hush, Little Dragon,* the dragons' eyes and language infuse a relatively simple picture book with the uncanny. In this book, a mother dragon sings her baby to sleep with a modified version of "Hush, Little Baby." Instead of various gifts or pets, the dragon brings her baby various medieval persons for bedtime snacks. Eyes and language figure into this story subtly through the actual form of the book. The format itself is important because picture books were the specific subjects of Shastri's dissertation and Hanlon's later study, but in this case the function of picture book also facilitates the uncanny due to the dual audience. The format itself implies a parent reading out loud while a pre-literate child listens and observes the pictures. Nodelman does a particularly thorough job of exploring the commonly recognized duality inherent in picture books and "the relationship of an implied adult narrator to an implied nonadult narratee" (444). As Nodelman notes, this relationship implies "an accompanying and paradoxical sense of a double addressee, both an implied child reader and an implied adult reader who chooses or shares the texts with the implied child; a focus on binary opposites like child and adult, home and away, good and evil, in theme and structure" (444). Therefore, for my purposes here, it is significant to note that the parent is performing the language, the pre-literate child the eyes, and picture books already encourage a binary between these two age extremes. This dual performance brings the characteristics of the dragon uncomfortably close to home by doubling not only the people with the dragons but also the parent/child with one another.

Adults and children are doubled and divided by the very practice in which they engage through picture books: literacy. John Morgenstern points out ever since children and adults were separated by the rise of schooling and the Victorian Cult of Childhood, children have been regarded by adults as another type of being that is simultaneously the same and different, innocent and barbaric (21-22). In *Hush, Little Dragon,* the parent and child readers each absorb the mother and child dragon identities, simultaneously taking on the dragon-humanity doubling and this cultural Othering between adults and children over the practice of reading.

As the performers of language, the reading parent becomes the mother dragon. Ashburn writes the book in the voice of the dragon mother. The book begins immediately with the lullaby words: "Hush, little dragon, don't make a sound" (Ashburn 1). The parent reading or singing this lullaby out loud does not read any framing words like "The mother dragon is singing," but rather immediately joins in with the mother dragon. The sing-song rhythm of the text and the well-known tune that it corresponds with encourage the parent to actually sing the words and perform as the mother dragon. The goals of the mother dragon and parents even match, as parents traditionally read picture books to children at bedtime. Not only does this performance make the parent into the mother dragon from the child listener's point of view, but it also transforms the child into a dragon

baby from the parent's point of view. Each is temporarily transformed into a dragon in the other's perspective through the performative language.

Meanwhile the child and parent each see a different book; one focuses on observing the illustrations while the other focuses on reading the words. Of course both will notice the other aspect, but their expertise is distinctly divided. Picture book criticism has shown that children are generally more attentive to the images in books than adult readers and will catch many details while the parents remain focused on the words. In a study in which children were interviewed about how they read books, Arizpe and Styles affirmed that even the older children noticed less than the young (192). They explain this division as a "learning function" on the part of the children, thus "children notice more details than adults do" (193). Children and adults' areas of expertise further divide them into the eyes and language, accordingly.

Hence, adults may read a more lighthearted book than the children, for within the visual details of this book lie the most menacing parts. For instance, one spread portrays the mother dragon facing three musketeers. The words simply sing, "If those musketeers should bolt, / Mama's gonna stop their silly revolt" (Ashburn 15). The words may refer to stopping the musketeers, but without much menace. The use of the word "silly" belittles their need to run away at all. The slightly forced use of the word "revolt" to rhyme with "bolt" implies more of a political maneuver than a dragon fight. In this way, the sing-song, rhyming style and somewhat absurd diction help dampen any potential scariness in the words.

In the picture, meanwhile, the musketeers cower against a wall as the dragon looms across the opposite page. The mother dragon is so large in comparison that she is not contained within the frame of the spread, creating a character menacing in pure size. Additionally, her position reveals an animal threat to the musketeers as she puts forward her head and bares her teeth. In the case of a dragon, this is also a threat of fire. Meanwhile, the baby dragon gleefully reaches for the terrified musketeers. No consumption is shown in the picture, but the next page features a little musketeer hat on the ground between the mother and the baby, with no owner in sight. Several pages later, one lonely musketeer stands on the top of a tower as the mother and son fly away. The book never shows the baby actually eating these people, and it would be easy to assume that they are all getting away if it weren't for these little visual details underscoring their fate. As the child watches the pictures, where the people being threatened appear terrified or angry, the parent reads light, absurd words and rhymes. Only at the end when the mother sings that the baby's "tummy is full you must be done!" (Ashburn 23) do the words affirm that the baby really has been consuming many of the people. Effectively, the child in this situation would experience being cheerfully sung to while several people die but at the same time, the child is being addressed in second person as though he or she was the baby dragon. The dragons become more familiar than the humans, and in the end this familiarity creates a question of alliance and identity. While the eyes of the dragons or even the readers are not being threatened, as in the traditional uncanny, the collective visual and verbal information which the child collects is in its own way threatening to human bodies and identities. The child is given an uncertain doubling between dragon and human that brings up the question of which the child truly is or, perhaps more importantly, wishes to be.

Ashburn's rhyming lyrics and Murphy's illustrations present the dragon as uncanny, but in a delightful fashion. The end result of this is not fear, but rather amusement. *Hush, Little Dragon* follows Grahame's tradition of keeping the menace subtle and beneath a pleasant surface. Even though the pictures imply several murders, the dragons are not terrifying. Their pleasantly rounded and curvy bodies appear cuddly, especially next to the generally angular and uncomfortable looking humans. In the spread with the musketeers, the mother dragon may be threatening them, but her teeth, horns, spikes, and other scary features are curvy in stark contrast to the musketeers' pointy tunics, mustaches, hats, and swords. The disparity comes off as funny, of course, but also creepy as it once again aligns the readers' sympathy with the dragons.

Hush, Little Dragon relies on form to reveal the uncanny in part due to the constraints and strengths of its genre as a picture book. The chapter book *How to Train Your Dragon Book 1* has fewer such format-based codes to manipulate, and so the uncanny occurs in the words. Through different means, the texts mask the uncanny with humor and satire of traditional dragons. The uncanny is present, a lurking dark side to dragons, but they are allowed to be funny and retain their fearsome power simultaneously.

Conclusion

Between the lighthearted dragon-lore attitude attributed to Grahame and the identity-disturbing aspects translated by Tolkien, dragons in literature still have access to their mythic capabilities. Stein, Blount, Shastri and Hanlon put the awe-inspiring aspects of mythical dragons into opposition with the humorous qualities of many children's literature dragons, yet humor and the uncanny need not negate each other. Grahame's style of humor may be just the right protective camouflage for Tolkien-esque fearsome dragons. Using seemingly innocent traits such as eyes and language, some authors sneak in the old power of dragons, whether or not they are even aware of the traditions that they uphold. Dragons in modern children's literature can still inspire the fear of the uncanny double, the uneasy proximity of another being that could eclipse oneself, carried from their ancestral dragon-lore. While not all take advantage of this option, and plenty of empty neighbor-dragons exist in children's literature, it is important to remember that not all of those dragons may be as innocent as appearances would imply. A little riddling talk might bring out an entirely different (but eerily similar) beast.

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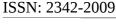
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Fafnir – Nordic Journal of Science Fiction and Fantasy Research

Fantastic Conference Days in Sunny Florida – Report from the 35th International Conference on the Fantastic in the Arts

Päivi Väätänen

The 35th International Conference on the Fantastic in the Arts took place in Orlando, Florida, on March 19−23, 2014. Themed "Fantastic Empires," the conference covered a myriad of fantastic and science-fictional topics from empires to orcs and from literature to television series. Guests of honor at the conference were science fiction writers Nnedi Okorafor and Ian McDonald; guest scholar was Istvan Csicsery-Ronay, Jr., and special guest emeritus was Brian Aldiss, who probably does not need any kind of introductions.

Not even jet-lag could spoil the joyous feeling of summer for the Nordic participants as it was warm and sunny in Orlando when the conference began on Wednesday. Luckily there was time to relax by the poolside at the Orlando Airport Marriott for a while before the opening of the conference in the afternoon.

At the opening ceremony, conference participants were warmly welcomed but sad to hear that the resident alligator in the pond behind the hotel had passed away during the year (but as it turned out, another alligator had found its way into the pond and replaced the deceased reptile). When the conference program continued with the opening panel titled "Imagining Empire," the audience got to follow a lively discussion on empires both in fiction and in the real world, the risk of cultural appropriation, as well as the responsibilities of critics and academics.

After the panel, there was still time for one session, or rather several parallel sessions on fantastic topics from the human/animal boundary in children's literature to international empires. As always in large conferences, in ICFA as well the biggest challenge a conference participant faces is having to choose from several interesting but simultaneous panels, as for every session attended there were up to nine sessions missed – though one definitely has to give credit for the ICFA organizing team, as the program is built in such a way that very seldom do sessions with similar topics overlap, and it is possible to follow most of the sessions on, say, postcolonial science fiction —and there were quite a few of them, due to the theme of the conference.

On Thursday morning, the panel on science fiction and postcolonialism approached the topic from various angles. The panelists discussed the relationship between science fiction and postcolonial theory and in the end, the panel seemed to agree that postcolonial questions are definitely good for the genre: they are pushing the envelope of what sf is–it could even be said that

sf has been given a new life through postcolonial issues. The panelists also pondered whether there is a risk of commodifying the postcolonial in science fiction, even though writer Nisi Shawl reassured the other panelist and the audience that commodification would require that someone could control how the postcolonial voices are coming through, and "that's not going to happen."

Postcolonial themes continued in a session on disrupting the colonial gaze, where there were interesting and entertaining papers from ethical cannibalism in *The Sparrow* to Vandana Singh's postcolonial science fiction; and in another panel on race and colonialism in sf there were papers on Asiatic racialization, *Heart of Darkness* read as sf, and a paper by yours truly on how Octavia Butler, Nalo Hopkinson, and Nnedi Okorafor have diversified sf in and with their fiction.
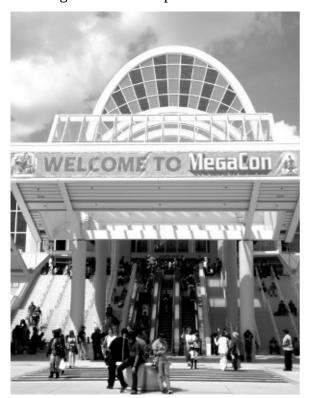
One of the points in my paper was that Okorafor's characters are outspoken, and that proved to be the case with the author herself as well. In her guest of honor speech, Nnedi Okorafor memorized the evening she heard about her novel *Who Fears Death* winning the World Fantasy Award. She talked touchingly about "Writing Rage, Truth and Consequence," social inequities, guns, and the meaning of education in today's society – and about writing and weird things. Okorafor continued with the same themes later on in an interview with Andy Duncan. When asked about controversial and painful issues like female circumcision in her novels, she described the need to write about those things as well, because "change comes from people talking about something, learning and being passionate about it."

The potential of writers and academics to act as agents of change was one of the themes in Istvan Csicsery-Ronay's guest of honor speech "Science Fiction and the Imperial Audience," which was equally moving, inspiring, and loaded with insights on how empires and imperialism have affected us all. After the guest of honor luncheon, members of the *Fafnir* crew advertised the brand new, fresh from the Internet, first ever issue of *Fafnir* to the conference goers with the help of Finnish chocolate and licorice toffee. A big thank you to everyone who stopped by and took our leaflet!

The amount of Nordic participants in ICFA has usually been quite good, and wherever Finns and Swedes are together, the situation tends to grow into a friendly competition. For several years now, there has been a rivalry between the Finns and the Swedes attending the conference on which country is more numerously represented that year. This year, there were five Finns, and four of us presented a paper at the conference. The other Finnish presenters at ICFA 2014 were Merja Polvinen, Jari Käkelä, and Mika Loponen - all from the University of Helsinki. Polvinen presented a paper on "Scholarly Empires," building on the ideas she presented in the previous *Fafnir*, that sf and mainstream literary theory could and should learn from each other. Käkelä gave a paper titled "Enlightened Empires: Asimov's Future History," and Loponen introduced the concept of orc semiotics in his paper "The Rise of Orcs: The Evolution of and Redemption of Orcs and Orcish Societies."

There were also five participants from Sweden, all of whom presented a paper or took part in panel discussions. Stefan Ekman from Lund University, fantasy literature division head of the conference at the time, was acting as a session moderator and taking part in a panel discussing academic job markets. Jerry Määttä from Uppsala University talked about "Elegies for an Empire: Imperial Melancholy in the Disaster Fiction of John Wyndham, John Christopher, and J. G. Ballard," and Per Israelson of Stockholm University gave a paper titled "On the Names of Blue Wizards: the Tolkien Archive and Empire." There were also Maria Lindgren Leavenworth from Umeå University, who presented a paper on "Finding Maps of Meaning: Collaborative World Building in Justin Cronin's *The Passage* and *The Twelve*," and Fredrik Tydal from Södertörn University with a paper titled "Bringing Out Henry James's Little Monsters: Two Film Approaches to 'The Turn of the Screw.'" Therefore, even if it was a draw in 2014 judging by the number of participants, the number of presenters admittedly clinched a victory for the Swedes. Finland hopes
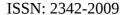
to gets its revenge next year, but it would be nice to have other Nordic and European countries join in the light-hearted competition in the future.

After the four full conference days, many tired but happy academics went on a trip to the Kennedy Space Center in Cape Canaveral. Looking for something completely different, I was probably not the only one to visit the huge local media convention, Megacon, which happened to be held in Orlando the same weekend. After all, for a science fiction scholar it is also important to widen one's scope by getting to know the less academic side of sf, too. Megacon lived up to its megalomaniac name with tens of thousands of people crowding the hallways in spectacular costumes.

All in all, ICFA35 was full of thought-provoking papers and interesting people, and much was learned and many ideas gathered during the four days in March. In addition to the strictly academic program, there were entertaining author readings, film screenings, and of course, late night drinks by the pool. There is always a warm and welcoming atmosphere at ICFA and it is a student friendly conference where one gets feedback in a constructive and encouraging spirit. In the "brief history" of ICFA conferences included in the conference program booklet, ICFA is commended as "one of the most diverse, energetic, provocative, and addictive interdisciplinary gatherings in the world." It might sound like self-praise or hot air, but having been there now three times in five years, I can confidently say that the description is certainly true. Thank you again, ICFA!

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Call for Papers: *Fafnir* 4/2014

Fafnir – Nordic Journal of Science Fiction and Fantasy Research invites authors to submit papers for the upcoming edition 4/2014. *Fafnir – Nordic Journal of Science Fiction and Fantasy Research* is a new, peer-reviewed academic journal which is published in electronic format four times a year. *Fafnir* is published by Finnish Society of Science Fiction and Fantasy Researchers (Suomen science fiction- ja fantasiatutkimuksen seura ry).

Now *Fafnir* invites authors to submit papers for its edition 4/2014. *Fafnir* publishes various texts ranging from peer-reviewed research articles to short overviews and book reviews in the field of science fiction and fantasy research.

The submissions must be original work, and written in English (or in Finnish or in Scandinavian languages). Manuscripts of research articles should be between 20,000 and 40,000 characters in length. The journal uses the most recent edition of the MLA Style Manual. The manuscripts of research articles will be peer-reviewed.

Please note that as *Fafnir* is designed to be of interest to readers with varying backgrounds, essays and other texts should be as accessibly written as possible. Also, if English is not your first language, please have your article reviewed or edited by an English language editor.

The deadline for submissions is 31st August 2014.

In addition to research articles, *Fafnir* constantly welcomes text proposals such as essays, interviews, overviews and book reviews on any subject suited for the journal. Please send your electronic submission (saved as RTF-file) to the following address: submissions(at)finfar.org. For further information, please contact the editors: jyrki.korpua(at)oulu.fi, hanna.roine(at)uta.fi and paivi.vaatanen(at)helsinki.fi. More detailed information on our journal is available at: journal.finfar.org.

This edition is scheduled for December 2014.

Best regards,
Jyrki Korpua, Hanna-Riikka Roine and Päivi Väätänen
Editors, *Fafnir – Nordic Journal of Science Fiction and Fantasy Research*