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The Fantastic in Children's Literature

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Transcending Logic: Incompleteness, Fantasy, and the Quest for Ultimate Truth

This quest began with a sense of discomfort towards two ideas: 1.) that fantasy and reality exist on opposite ends of a spectrum, and 2.) that reality didn't actually start to happen until reason and logic took over as the method for understanding and defining the world and all its phenomena. After this shift, anything that existed beyond the purview of reason and logic was marginalized into the category of fantasy and no longer considered a valid means of making sense of the world. This didn't sit right with me. And that's when I discovered Gödel's Incompleteness Theorem which, among other things, demonstrates that logic limits itself. This is when the quest really took off. On the one hand, limitations on logic could be taken as a discouraging statement. If logic, as the go to method for understanding everything, is limited, then no kind of Ultimate Truth can be found. But then a spark of intuition (or maybe wishful thinking on my part) suggested that this could be the point fantasy returns from the margins and reclaims sovereignty over reality. Despite the long-lived and coveted idea that science is the only valid path of discovery, perhaps fantasy is the perfect vehicle for carrying us beyond the limits of logic towards Ultimate Truth. Ursula's Le Guin's *Tehanu* was chosen as the literary means of testing this hypothesis, and with that, the quest was under way.

The first challenge of this quest was to locate a working definition of reality, so that I could later work backwards to find out whether the most effective means of arriving at that definition was logic or fantasy. According to the Oxford English Dictionary, "Real existence;

what is real rather than imagined or desired; the aggregate of real things or existences; that which underlies and is the truth of appearances or phenomena” (*OED*.) As in any mathematical logical pursuit, an axiom is needed as a starting point. The *OED* also defines an axiom as “A proposition (whether true or false)” (*OED*). There is an inherent problem to definitions of reality, namely they are based on axioms, and thus it is impossible to know what is absolutely real. So we must settle upon the notion of consensus reality, which Wikipedia, the best source for a definition of consensus reality, identifies it as “that which is generally agreed to be reality, based on a consensus view.” For practical purposes, it is consensual reality rather than any absolute reality that determines the parameters of the quest to transcend the limits of logic.

The next challenge of the quest was to determine how logic as a means of defining reality limits itself and thus our consensual understanding of everything. This is where the mathematics comes into play.

Gödel’s Incompleteness Theorem:

Proposition VI: To every w -consistent recursive class c of formulae there correspond recursive class-signs r , such that neither $\forall \text{Gen } r$ nor $\text{Neg } (\forall \text{Gen } r)$ belongs to $\text{Flg } (c)$ (where v is the free variable of r).

A translation found in *An Incomplete Education*, by Judy Jones and William Wilson says that

...within any given branch of mathematics, there would always be some propositions that couldn't be proven either true or false using the rules and axioms ... of that mathematical branch itself. You might be able to prove every conceivable statement about numbers within a system by going *outside* the system in order to

come up with new rules and axioms, but by doing so you'll only create a larger system with its own unprovable statements. The implication is that *all* logical systems of any complexity are, by definition, incomplete. (509)

The relevant point to extract here is that logic limits itself. Another axiom needs to be added to the quest at this point, and it is that consensus reality is comparable to a complex system of logic and therefore the rules that define consensual reality also limit it.

According to Jones and Wilson, Gödel's Theorem also states that a system of logic contains "more true statements than it can possibly prove according to its own defining set of rules (509)." Another name for these unprovable but true statements, at least in the case of consensual reality, is fantasy. As Ursula Le Guin said in her essay "Why Americans Are Afraid of Dragons" (34), "...fantasy is true, of course. It isn't factual, but it is true..." This brings the quest face-to-face with the next dragon, or challenge.

It is question-shaped dragon: What is fantasy and how is it qualified to travel beyond the limitations of logic? The convenient but unreliable Wizard of Wikipedia is no longer sufficient for answers. Instead, a real scholar, Kathryn Hume, will provide the first definition. "Fantasy is any departure from consensus reality..." (21). And what better way to depart from consensual reality than to challenge notions of what is possible. As Gary Wolfe says, "...whatever we are to call 'fantasy' must first and foremost deal with the impossible" (1).

These two definitions of fantasy, 'departure from consensus reality' and 'dealing with the impossible,' become effective means of stepping beyond the limited system of consensual reality towards previously unimagined possibilities.

Before daring to step beyond, however, the question of why should be answered. As Hume points out, "Fantasy challenges us with perspective we do not usually entertain. It takes

some security to give up one's standard assumptions and try out new ones" (167). Most likely it would be easier to remain within the safety and comfort of the known system of consensual reality.

The reason to give up standard assumptions is the same one that started this quest: the search for Ultimate Truth. But here is one of the hidden dangers of this quest, one that doesn't lurk in any dragon's lair, but in our own minds and expectations: in this internet age, it is easy to slip under the spell of Google (the 'magic' of which is actually Boolean logic) and start thinking that because a search engine can come up with an answer to any question thrown at it, one no longer has to struggle to find truth of any kind.

As Rudy Rucker points out in *Infinity and the Mind*, the implications of Gödel's theorem are devastating to such a dependence on logic. "The thinkers of the Industrial Revolution liked to regard the universe as a vast preprogrammed machine. It was optimistically predicted that soon scientists would know all the rules, all the programs. But if Gödel's Theorem tells us anything, it is this: Man will never know the final secret of the universe" (158). One simply needs to Google "Ultimate Truth" to experience firsthand what Rucker is getting at. Needless to say, the results are less than satisfactory.

According to Hume, not just search engines, but all arenas of logical inquiry are limited. Physicists are increasingly aware that our exploration into the nature of the universe via mathematics is really a mathematical projection onto whatever is out there. Psychologists remind us of the degree to which what we see in other people is really a projection of ourselves rather than any objective reality. Philosophers and linguists point to the tautological nature of language and remind us that all we think we know is really only a set of arbitrary

linguistic structures...Upholding realism as a means of giving meaning to experience seems naïve in the face of such deconstruction of its axioms (41).

To make matters worse, it's not just the universe one can never hope to understand. Jones and Wilson add that, "[Gödel's Theorem] has been taken to imply that you'll never entirely understand yourself, since your mind, like any other closed system, can only be sure of what it knows about itself by relying on what it knows" (509). By relying on logic alone, one can neither know one's self nor one's universe. However, there is still hope in the quest for Ultimate Truth. As Benjamin Hofstadter points out in his book *Gödel, Escher, Bach*, in "many real-life situations, deductive reasoning is inappropriate... there are just too many things to take into account simultaneously for reasoning alone to be sufficient" (561). So it follows that there must be other ways of knowing.

According to Le Guin in her essay *Myth and Archetype in Science Fiction*,

We are rational beings, but we are also sensual, emotional, appetitive, ethical beings, driven by needs and reaching out for satisfactions which the intellect alone cannot provide...Where the intellect fails, and must fail, unless we become disembodied bubbles, then one of the other modes must take over (69).

Fantasy is one of the other modes. One of the best outlets or vehicles for fantasy is literature. As Hume explains, fantasy is "an impulsive native to literature" (21) and we have a "need for metaphoric images that will bypass the audience's verbal defences" (20). Once this is accomplished, "...the fiction, if effective...may permanently alter the readers' relationship with the world..."(24). She goes on to point out that rather than diverging from reality in some form of indulgent escapism, fantasy can actually heighten one's sense of it by introducing the unexpected or showing us aspects of ourselves that we don't usually look at. "An author can

stimulate our awareness of reality by manipulating our literary expectations, giving us a different presentation of reality than we expect...Or he may revivify day-to-day material that we normally banish to our subconscious” (83). And finally, Hume tells us that fantasy is particularly equipped to deal with problems in a way that point to point logical thinking is not. “There is an elegant efficiency to fantasies. Like dream images, they can condense several problems or ideas...The very condensation of fantasy images, their ability to resonate with the different emotional needs in the members of the audience, gives fantasy a power and effectiveness that are different from anything achievable by mimesis alone” (191).

An example of the transformative power of literary fantasy is Le Guin’s *Tehanu*. In “Earthsea Revisioned”, Le Guin explains how the first books of the series reflected an outdated mode of thinking. “A world in which men are seen as independently real and women are seen only as non-men is not a fantasy kingdom...It’s the world I lived in when I wrote the first three books of Earthsea...The myth of man alone...at the center, on the top, is a very old, very powerful myth. It rules us still” (17). In her essay, “When We Dead Awaken: Writing as Revision” Adrienne Rich describes revision, or re-vision, as “the act of looking back, of seeing with fresh eyes, of entering an old text from a new critical direction...an act of survival” (18). She goes on to say that “For writers, and at this moment for women writers in particular, there is the challenge and promise of a whole new psychic geography to be explored” (19). Le Guin seems to have taken this to heart in *Tehanu*, where two of the main themes are change and the power of women. Just before he dies Ogion says, “Over...All changed!—Changed, Tenar! Wait—wait here, for...”(25-26). And Moss describes women in a new light, surrounded by a potent but as yet unknown power.

Oh, well, dearie, a womna's a different thing entirely. Who knows where a woman begins and ends? Listen Mistress, I have roots, I have roots deeper than this island. Deeper than the sea, older than the raising of the lands. I go back into the dark...no one can say what I am, what a woman is, a woman of power, a woman's power, deeper than the roots of trees...older than the Making, older than the moon. Who dares ask questions of the dark? Who'll ask the dark its name?
(57)

This mysterious power is contrasted with the magic of men. "Wizardry was a man's work, a man's skill; magic was made by men" (36). But there is a new attention to and respect for women's power which culminates in *Therru*, a young girl badly scarred by the abuses of men, summoning the dragon *Kalessin* at the end of the book. Le Guin was able to use the transcendent nature of fantasy to re-vision, or step beyond, the original male-dominated parameters of *Earthsea*, as well as those of the culture she was actually living in, and present a new model or idea of feminine power. "...thanks to the revisioning of gender called feminism, we can see the myth as a myth: a construct, which may be changed; an idea which may be rethought, made more true, more honest ("Earthsea Revisioned" 17)." Rich says "The charisma of Man seems to come purely from his power over her and his control of the world by force, not from anything fertile or life-giving in him" ("We Dead" 19). Le Guin chose to alter the myth of Man's charisma or 'man alone' by creating a character, *Tenar*, whose "...definition of action, decision, and power is not heroic in the masculine sense. Her acts and choices do not involve ascendance, domination, power over others..."("Earthsea Revisioned" 13). The resulting fictional and social transformation is a demonstration of how fantasy can prompt one to give up old assumptions and seek out a new version of truth.

If giving up old assumptions can expand the parameters of fiction and society, why shouldn't it be able to do the same in science? It seems as though there is no place for fantasy in an arena where logic is king, but in a 1929 interview in the *Saturday Evening Post*, one of the greatest scientific minds of all time, Albert Einstein, admitted to the importance of imagination in the scientific process. "I'm enough of an artist to draw freely on my imagination, which I think is more important than knowledge. Knowledge is limited. Imagination encircles the world (117)." In fact, Hofstadter reveals that Gödel himself had to rely on a non-logical spark to get him to the Impermanence Theorem. "Once Gödel had the intuition...he was over the major hurdle. The actual creation of the statement was the working out of this one beautiful spark of intuition (17)." What Einstein and Hofstadter indicate is that the imagination, or fantasy, does play a key role in science. And this is where the quest takes an interesting turn, in that it begins to look as though utilizing fantasy in the pursuit of Ultimate Truth may not require leaving logic behind.

Hume presents the possibility of a more synergistic relationship between fantasy and reason. She goes so far as to say that in order to achieve meaning in literature, the two must both be present and work together. "Fantasy and mimesis seem more usefully viewed as the twin impulses behind the creation of literature...Their powers overlap, but are also often complementary and sometimes synergistic, rather than competitive. Insofar as literature gives its readers a sense of meaning, both are almost always involved (195)." Le Guin seems to agree when she says, "The way of art, after all, is neither to cut adrift from the emotions, the senses, the body, etc., and sail off into the void of pure meaning, nor to blind the mind's eye and wallow in irrational, amoral meaninglessness--but to keep open the tenuous, difficult, essential connections between the two extremes (73)." It appears as though one of the axioms of

successful fantasy is a grounding in logic. It can be assumed that the success of Le Guin's Earthsea series, as well as the paradigm shifting power of *Tehanu*, relied upon such a synergy. Otherwise, according to Hume and Le Guin's statements, the story would not have held up. If the story hadn't held up, the paradigm couldn't have been shifted.

The power of fiction or fantasy to alter the fabric of reality seems very powerful, but where does this leave the quest for Ultimate Truth? It's been established that logic alone can't get there, nor is fantasy a sole vehicle for arriving there. The indication seems to be that fantasy and logic, working in tandem, is the most successful means of arriving at some kind of truth. But is it Ultimate Truth?

In *Tehanu*, Ged, the hero of the first three books of the Earthsea series, is described by Tenar thus: "he had been compact, vigorous; now he was this as if worn down to the bone, worn away, fragile" (49). Even his scars seem "lessened" (49). In *Tehanu*, which is about this shift towards the mysterious power of women, Ged is significantly diminished. And it's not only Ged. The villains of this book are all men who practice various forms of domination over women. Hake and Handy, who raped and burned Therru and left her for dead continue to pursue the girl as well as Tenar for taking care of her. Early in the book the young wizard Aspen says to Tenar, (who is "a woman dragons would talk to" (68)) "Be careful, woman, how you speak to men of power. Later Aspen is revealed to be the servant of a master already defeated and tries to claim some of his power. This power could be interpreted as the masculine power that has dominated Earthsea until now. Aspen says:

You did not conquer him. His power lives! I might keep you alive here awhile, to see that power—my power...to see your meddling king make a fool of

himself..looking for a woman! A woman to rule us! But the rule is here...I've been gathering others to me, men who know the true power (240).

A few pages later, Therru summons the dragon that incinerates Aspen, leaving nothing but charred bones. There is a new power on the move, far greater than the old. But it isn't just the bad guys who suffer for it. Men in general are denigrated. "What's wrong with men" (56), Moss asks. "It's all him and nothing else inside..Full of grand man-meat, manself...When his power goes, he's gone. Empty" (56). This is a hardly a flattering view and later Moss displays "a gleam of vengeance" (59) at the idea of the castration of innocent boys. All of the men in Earthsea are paying the price. Even Ogion, who is supremely disempowered by his death in the third chapter. Ged, once the hero, is seen by Tenar as powerless and self-centered. "Why do you think only of yourself? always of yourself?" she asks (81). Tenar, who gave up the selfish power of men in favor of the life giving power of a wife and mother, describes him thus:

"He...had an ashy, shadowy look to him. It was not the gray hair only, but some quality of skin and bone, and there was nothing much to him but that. There was no light in his eyes. Yet this shadow, this ashen man, was the same whose face she had seen first in the radiance of his own power, the strong face with hawk nose and fine mouth, a handsome man."

He is a once powerful man, greatly diminished. In fact, it is implied that the sacrificing of Ged's power is the catalyst for the shift towards women's power that Ogion predicts before his death. In his review of *Tehanu*, Robert A. Collins says that "Ged, the central figure of the trilogy, who was developed as a complex but reverently cherished savior/hero...is now...reduced to more 'human' proportions; indeed he is seen by the female protagonist as a weak, deluded, self-centered victim of the male power games that propelled his heroism" (22). The masculine

has been sacrificed in order to build up the feminine, and this would be one interpretation of the rules of the new system of logic created in *Tehanu*. The paradox here is that while Le Guin was able to transcend the rules of the first system she created in the original books, she had to create new rules in order to do so. As Jones and Wilson showed us earlier, “You might be able to prove every conceivable statement about numbers within a system by going *outside* the system...but by doing so you'll only create a larger system with its own unprovable statements” (509). With the new rules in *Tehanu* come new limits—specifically on the empowerment of male characters. If this is true, than hopefully there can be no mistaking this new paradigm for any kind of Ultimate Truth. It is simply another paradigm. This is not bad news. Nor is it bad news that the quest now appears to have been a bust.

Logic does not lead to Ultimate Truth. Fantasy does not lead to Ultimate Truth. And the combination of the two doesn't lead to Ultimate Truth. Any attempt to transcend a system, regardless of the vehicle and regardless of whether it is a mathematical system, a fictional system, or a system of consensual reality, simply leads to the creation of another system.

So where does the quest end?

With M.C. Escher and Beauty.

Escher's work is described by Hofstadter as a visual representation of the fantasy-to-reality spectrum. They do not exist opposite each other but rather in a never ending loop. “...one level in a drawing might clearly be recognizable as representing fantasy or imagination; another level...reality...for any one level, there is always another level above of greater ‘reality,’ and likewise there is always a level below, ‘more imaginary’...(15).” Escher's work depicts what Hofstadter refers to as Strange Loops. “What else is a loop but a way of representing an endless process in a finite way (15).” It turns out that there is no vehicle for arriving at Ultimate Truth

because there is no Ultimate Truth, at least not in terms of how humans measure and express in words, images, and numbers. Returning to the original definition of reality as “what is real rather than imagined or desired” (*OED*), we are reminded that hand in hand with this goes the fact that “human beings do not...fully understand or agree upon the nature of knowledge or knowing, and therefore it is not possible to be certain beyond doubt what is real” (Wikipedia). Here is yet another paradox. Fortunately, as Rucker says, “...to understand the essentially labyrinthine nature of *the castle* is, somehow, to be free of it” (165). However, freedom doesn’t mean the cessation of all striving. The quest can continue. As Hume says, “Writers of the future may find themselves engaged in a search for a kind of Grand Unified Theory—not to reconcile the various types of physics, but to integrate the various kinds of truth that give man and his universe their sense of meaning (50).” There may be no way out of this labyrinth, at least not using the tools currently available to us, but we can refine our understanding of the fantasy-logic continuum as we travel it. Thus, we might as well relax and enjoy the exploration. There may not be an Ultimate Truth at the end of it, but there is Beauty in the journey.

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Its literature for children goes back at least to the late 19th century and by 1928 was established in its own right. Japan's "discovery" of the child seems to have been made directly after World War II. In Iwaya Sazanami, Japan has its Grimm; in Ogawa Minei, perhaps its Andersen; in the contemporary Ishii Momoko, a critic and creative writer of quality; in Takeyama Michio's Harp of Burma (available in English), a high-quality postwar controversial novel. Besides, there is the mysterious factor of climate: it could be true that children in Latin countries mature faster and are sooner ready for adult literature. In France a special intellectual tradition, that of Cartesian logic, tends to discourage a children's literature. Folklore and Fantastic Literature - Free download as PDF File (.pdf), Text File (.txt) or read online for free. Some part of the creative process through which the mimetic and the fantastic elements are combined-or reconciled-into a logically-cohesive Secondary World must also include a strategy or strategies by which the reader will be able to connect with, be able to understand, and be able to decode any meaning inherent in the story set in that Secondary World and. It is to these uses of folklore that I wish to turn now. 282 C. W.SULLIVAN III. Fantasy or science fiction readers, having been exposed to these structures or patterns from their childhood readings and Books & Literature. Cartoons & Comics & Graphic Novels. Celebrities & Real People. 3 Works in Fantastic Children. Navigation and Actions. Works. Bookmarks. Listing Works. Fantastic Children by Sato_ha. Fandoms: Fantastic Children. Not Rated. Volume 13 Issue 3. Incompleteness via paradox and completeness. English Français. The Review of Symbolic Logic. Article contents. Abstract. A relative consistency proof. The Journal of Symbolic Logic, 19, 21-28.CrossRef Google Scholar. Sieg, W. & Ravaglia, M. (2005). David Hilbert and Paul Bernays, Grundlagen der Mathematik, (1934, 1939). Undecidable Theories. Studies in Logic and the Foundations of Mathematics. Amsterdam: North-Holland.Google Scholar. van Heijenoort, J. (editor) (1967). Sullivan presents an This study provides a fascinating look at the various ways in which 20th-century fantasy writers have used Welsh Celtic mythology and folklore in their work. Following the theories formulated by such scholars as John Vickery and Joseph Campbell, the use of Celtic materials by each of the authors is discussed from a mythology-in-literature perspective. Sullivan presents an extensive accounting of the Celtic material used and explores the primary ways in which the authors incorporate it into their fiction, both structurally and thematically. Illuminating reading for students and scholars of mythology, modern fantasy, and children's literature, this book sheds new light on the Welsh influence in literature and opens paths for further research. ...more. Get A Copy.