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“All Wound Up”: Pullman’s Marvelous/ Uncanny Clockwork

Shelley King

British novelist Philip Pullman’s *His Dark Materials* trilogy has garnered high praise from young readers and critics alike; its final volume, *The Amber Spyglass*, earned Pullman Britain’s Whitbread Prize for Book of the Year in 2002 (the first children’s book so honored). Pullman’s debt to the British literary tradition, especially the works of William Blake and John Milton, has received extensive comment, as has his interest in Heinrich von Kleist’s “Essay on the Marionette Theatre.”¹ The emphasis on *His Dark Materials*, however, has overshadowed the author’s earlier textually ambitious engagement with German Romanticism in *Clockwork—or All Wound Up* (1996), his brief tale for younger children. Indeed, if the trilogy can be regarded as Pullman’s contemporary dialogue with Western myth and the epic traditions of Blake and Milton, *Clockwork* holds the same relationship to the more contained genres of the fairy tale and the short story. This essay examines Pullman’s blending of the traditional fairy tale with the later novella of the German Romantics to construct a complex literary experience for a wide range of readers. *Clockwork* captures both the wonder and transformative power of the fairy tale and the dark psychological and narrative complexity of post-Enlightenment Romanticism. The resulting narrative combines elements of the fantastic, the marvelous, and the uncanny to produce a darkly optimistic contemporary fairy tale that suggests the potential of compassion, courage, and love to transform human relations in the face of the threat posed by a culture of radical self-interest.

In an interview with Amazon.com, Pullman celebrates the connection between *Clockwork* and the Romantic movement, commenting, “Glad you saw the Hoffmann influence! Yes, I love that whole German romantic thing—love it to death” (“It’s No Fantasy”). If *Clockwork* is anything to judge by, what Pullman loves about Hoffmann is his ability to revise the fairy tale tradition, to combine elements of fantasy and realism, and to offer self-aware narratives filled with references to their own fictionality. Pullman stands out among contemporary

children's authors as a writer committed not only to telling a good story (as he so frequently reminds critics), but also to fostering a textual awareness and facility with narrative that develops only with exposure to books that exemplify the complex set of thematic, stylistic, and structural elements that constitute the literary experience. As Dudley Jones has noted, "Pullman's *Clockwork* . . . familiarize[s] young readers with narrative techniques more usually associated with experimental fiction for adult readers" (87). Jones connects this practice with the metafictional strategies of contemporary postmodernism, but many of these techniques are rooted in the textual practice of German Romantic writers such as E. T. A. Hoffmann.² "Der Sandmann," for example, features a narrator who asks the reader directly to sympathize with his struggle to choose a genre through which to present the protagonist's experiences: "I tormented myself to devise a way to begin Nathanael's story in a manner at once creative and stirring: 'Once upon a time,' the nicest way to begin a story, seemed too prosaic. 'In the small provincial town of S____, there lived'—was somewhat better, at least providing an opportunity for development towards the climax" (Hoffmann 149). Pullman similarly engages the reader in the authorial struggle to produce the fictional construct. In *Clockwork* the narrator comments directly concerning the difficulty of writing a story: "Fritz had had to stop himself from interrupting when Karl spoke about the difficulty of working. Stories are just as hard as clocks to put together, and they can go wrong just as easily—as we shall see with Fritz's own story in a page or two" (11). Even the persona of Pullman's narrator is reminiscent of the teller of "Der Sandmann," described by Kent and Knight as "alternately sensitive and sympathetic, and critical and even sardonic" (*Selected Writings of E. T. A. Hoffmann* 30). This self-conscious narration serves an important function for the reader. Birgit Röder comments,

If we assume that Hoffmann's works are about more than simply highlighting the impossibility of constructing a coherent vision of the world, we are left with the question of how to interpret the multiplicity of often contradictory narrative standpoints in his works. The answer lies, I believe, in his desire to encourage the reader to adopt an active—and critical—attitude to what has been narrated. (20)

The same observation could be made of Pullman: he challenges the reader to recognize the necessity of being actively engaged in the act

of interpretation, and suggests that texts do not offer univocal and transparent meanings.

Pullman does not simply imitate Hoffmann: he adopts and adapts the latter's techniques of narration, and most importantly, shares his creative engagement with the fairy tale as a genre and his exploration of the relationship between the world of mundane reality and the marvelous world of the supernatural. Rewriting traditional fairy tales for contemporary audiences has become something of a growth industry in literature for both children and adults in recent decades. At one extreme, Angela Carter and Tannith Lee offer adult readers feminist retellings of familiar tales with an emphasis on the sexual politics implicit in the patriarchal roots of such stories, while at the other authors such as Robert Munsch construct new tales with a twist on old models to entertain younger readers.³ Such rewriting, however, is hardly a new phenomenon: writers have been revising the folktale with its roots in oral culture for centuries. In seventeenth-century France the literary fairy tale flourished, adding to the marvelous wonders of the folk tradition a more sophisticated psychology of sensibility and a moral didacticism.⁴ And in late eighteenth- and early nineteenth-century Germany, Romantic writers imbued with the Gothic reaction to the relentless rise of realism in fiction reinvented the tradition to reflect their own vision of the relationship between natural and supernatural realms. Janice Patten notes:

The dark side of German romanticism stemmed in part from the fact that the German *Kunstmärchen* (the art fairy tale) is, perhaps especially clearly in Hoffmann, different from alleged folklore—for one thing, often taking place in contemporary cafés or in the busy streets of Dresden, Berlin, Frankfurt, or Paris. The uncanny, the mysterious, the horrible, the grotesque, and the prosaic merge and juxtapose with startling and deceptive ease. It is this merging and juxtaposition which account for much of the horror beneath the surface, because it shocks the reader into the recognition that the world of the fantastic and the supernatural is *not* comfortably removed from everyday existence. The novella . . . also exploited the uncanny and the mysterious. ("E. T. A. Hoffmann")

If, as Horace Walpole argues in his preface to *The Castle of Otranto*, realism had stripped fiction of its access to the marvelous, just as Enlightenment science had contained the supernatural, writers like

Hoffmann used its strategies to recover a world of possibilities within the mundane.

One of Hoffmann's key techniques was an insistence on realistic detail. As Kent and Knight point out,

It should not be overlooked that Hoffmann almost invariably endows his stories with a realism born of specificity and minute detail; further, he is known to have done research to assure the accuracy of his depictions. His detailed and accurate presentation of places and . . . characters, adds to their believability and, of course, enhances the fantastic. It is, in part, the very blending of romanticism and what might almost be called "scientific realism" which is Hoffmannesque. (34 n29)

As *His Dark Materials* demonstrates, Pullman shares this tendency to ground fantasy in the real, to combine history with science and technology in the service of the marvelous. We encounter a similar attention to factual detail in the setting of *Clockwork*, with its descriptions of the mechanisms driving the clocks and the process of apprenticeship.

Pullman also pays homage to Hoffmann in his use of the clockwork figures, as he draws thematically on "Der Sandmann," linking Hoffmann's uncanny tale of love and the automaton to the trope of magical transformation so familiar in fairy tales. Perhaps most importantly, he shows how Nathanael's narcissistic and destructive love for the doll Olimpia might be rewritten as Gretl's generous and marvelously transformative love for the clockwork boy, Prince Florian. Thus *Clockwork* offers more than a simple imitation of Romantic refinements to the fairy tale: it also engages with the form of the fairy tale itself to reinscribe its potential for wonder and optimism in the face of Gothic pessimism. Blending the optimism of the marvelous fairy tale with the historical detail and tormented psychological realism of Hoffmann, Pullman offers a cautionary tale of the danger both to the self and to the community of unregulated self-interest, and the healing power of sympathy and love. In the remaining pages, I will explore the interplay of three key genres that converge in this combination of Romantic and fairy tale intertexts—the fantastic, the uncanny, and the marvelous—to demonstrate the challenging interpretive experience Pullman offers to his readers.

Clockwork and the Fantastic

I want to begin by examining the complex textual strategy Pullman enacts at the outset by looking at two elements: the Gothic realism established in "A Note About Clocks" (the narrator's prefatory remarks that set the context for the tale to come) and the generic game played in the opening phrases of the story itself. Ostensibly designed to provide factual background for the tale, "A Note" serves primarily to set the tone for what follows by establishing a distinctive narrative persona. We quickly learn that our narrator is deeply sensitive to the darker aspects of existence, able to spot physical danger or derive melancholy from the most mundane sources. "The mainspring of an alarm clock," he tells us, is "made of tempered steel, with an edge that's sharp enough to draw blood. If you play about with it carelessly it'll spring up and strike at you like a snake, and put out your eye" (xii). Similarly, the great weights that drive pendulums pose a potential risk: "If your head were under that weight, and if the weight fell, it would dash out your brains on the floor" (xii). Even the hands of the clock tick us not into some desirable future, but rather "steadily on toward the grave" (xiii). The tone is ominous and pessimistic, and not a little macabre. At the same time, however, the information is rooted in realism, in the systematic account of the history of timekeeping and in the technical information concerning the functioning of clocks.

The opening of the story proper in *Clockwork*—"Once upon a time (when time ran by clockwork)" (3)—announces the complicated generic blend that the story will offer, as the phrase paradoxically yokes the "timeless" world of the traditional folktale⁵ to the "historical" world of realist narratives. In *The European Folktale: Form and Nature*, Max Lüthi argues that among the defining features of the folktale as a literary form are what he terms its one-dimensionality and its depthlessness:

Not only does the folktale lack a sense of any gap separating the everyday world from the world of the supernatural. In its essence and in every sense, it lacks the dimension of depth. Its characters are figures without substance, without inner life, without an environment; they lack any relation to past and future, to time altogether. (11)

Because of this depthlessness, characters in folktales experience no shock when faced with apparently supernatural beings like talking

animals or fairy godmothers, nor do they learn from past experience. The traditional folktale opening, "Once upon a time," conveys this abstract temporal setting, as do its variants and the qualifying phrases often appended to it: "In the old times, when it was still of some use to wish for the thing one wanted" (Grimm and Grimm, "The Frog Prince" 32), for example, or "A long time ago, perhaps as much as two thousand years" ("The Almond Tree" 185), where the number is less a real marker of known chronology than a symbolic value designed to suggest a distant past outside of memory. Even the elegant and literarily self-conscious fairy tales of the seventeenth-century French court make their gesture; Madame D'Aulnoy speaks of "Once upon a time—in the days when the fairies lived" ("The Wonderful Sheep" 214), gracefully acknowledging the timeless past of the folktale where natural and supernatural worlds intersected.

Pullman, however, complicates matters by tying his opening to the real, historical world of past technology. Time runs "by clockwork" for a very fixed period of human history, as his "Note About Clocks" points out:

In the old days, when this story took place, time used to run by clockwork. Real clockwork, I mean, with springs and cogwheels and gears and pendulums and so on. When you took it apart you could see how it worked, and how to put it together. Nowadays time runs by electricity and vibrating crystals of quartz and goodness knows what else. . . . Clocks and watches like that might as well work by witchcraft for all the sense I can make of them. (xi-xii)

Thus his story, though invoking the timeless world of the traditional European folktale, is rooted in a specific technological moment—essentially, between the emergence of mechanical time registered by the pendulum-driven clocks of the fourteenth century and what we might call scientific time, kept by the vibration of quartz crystals developed in the 1920s and by atomic frequency developed in the 1940s, the kind of time the anxious narrator dismisses as magical and beyond human understanding.⁶ One suspects, of course, that most readers, including children, are already well-versed in the narrative contract to provide a fairy tale offered in the phrase "Once upon a time"; most will read on without bothering overmuch about Pullman's qualifying phrase "when the world ran by clockwork." Such an opening, however, prepared for by the prefatory discussion of the history of

clocks in the narrator's "Note," asks the careful reader to hesitate between the marvelous, timeless world of the folktale, which cues the reader to accept talking animals and enchanted castles without question, and the real temporal world of recorded history where all apparent deviations from natural law must be scrutinized and explained.

Pullman's paradoxical juxtaposing of the marvelous and the real announces effectively the liminal space his narrative will explore. The apparent contradiction prompts the reader to hesitate between the worlds represented, and in so doing evokes a highly specific generic category: the fantastic. Structuralist critic Tzvetan Todorov offers perhaps the clearest definition of the fantastic as a genre:

In a world which is indeed our world, the one we know, a world without devils, sylphides, or vampires, there occurs an event which cannot be explained by the laws of this same familiar world. The person who experiences the event must opt for one of two possible solutions: either he is the victim of an illusion of the senses, of a product of the imagination—and the laws of the world then remain what they are; or else the event has indeed taken place, it is an integral part of reality—but then this reality is controlled by laws unknown to us. . . . The fantastic occupies the duration of this uncertainty. Once we choose one answer or the other, we leave the fantastic for a neighboring genre, the uncanny or the marvelous. The fantastic is that hesitation experienced by a person who knows only the laws of nature, confronting an apparently supernatural event. (25)

The uncanny falls on the realist side of the fantastic, its apparent supernatural elements ultimately explained away as tricks of the mind; the marvelous belongs to the world of the genuinely supernatural, impossible in terms of the world as we know it.

Given Pullman's opening, we ask if the tale that follows will belong unequivocally to the marvelous world of "once upon a time," or if its events instead will be governed by the historical and the real, their apparent unnaturalness explained away by coincidence, psychosis, and imagination, the territory of the uncanny. Or will it instead occupy the unstable textual ground of the fantastic? As Rosemary Jackson explains,

Fantastic narratives confound elements of both the marvelous and the mimetic. They assert that what they are telling is real—relying upon all the conventions of realistic fiction to do

so—and then they proceed to break that assumption of realism by introducing what—within those terms—is manifestly unreal. They pull the reader from the apparent familiarity and security of the known and everyday world into something more strange, into a world whose improbabilities are closer to the realm normally associated with the marvellous. The narrator is no clearer than the protagonist about what is going on, nor about interpretation; the status of what is being seen and recorded as "real" is constantly in question. This instability of narrative is at the centre of the fantastic as a mode. (34)

Pullman prepares the reader for the possibility, indeed the probability of the marvelous with the fairy tale opening, but immediately balances it by invoking the real presence of historical time, though the "real" world of medieval technology may seem to many children as remote and as marvelous as any wonder tale. For the experienced reader, however, this collision of genres promises a hint of the fantastic. As Todorov indicates, the experience of the fantastic is usually of brief duration, and very few narratives offer a sustained and unresolved hesitation between genres, but *Clockwork* asks the reader throughout to respond to this type of generic uncertainty. Such an opening invites readers to entertain the dual possibilities offered by the dominant literary influences on this text and prepares them for the generic choices they will be asked to entertain in the subsequent pages.

Clockwork and the Uncanny

As that aspect of the real that resists rational explanation and invites belief in an incursion of the supernatural into the natural world ("the world as we know it" in Todorov's phrase), the uncanny remains a source of fascination for writers and readers, for literary theorists and psychoanalytic critics alike. In attempting to define the fantastic, Todorov describes as uncanny any narrative in which apparently supernatural effects are ultimately revealed to be the product of real forces, whether material or psychological. Similarly, in "Das Unheimlich," Sigmund Freud attempts to document and account for that psychological state known in English as the sense of the uncanny, and resorts to literary texts—specifically, Hoffmann's "Der Sandmann"—as a means of demonstrating his belief that the sense of the uncanny is rooted in repression. While I do not want to offer a

psychoanalytic reading of *Clockwork*, Freud's essay offers a useful account of instances of the uncanny that are pertinent to Pullman's work. Freud identifies two experiences in particular that produce this sensation: the first is uncertainty in differentiating living beings from corpses or mechanical objects; the second is coincidence of thought or speech and event, which may be regarded superstitiously as the power of thought and language to produce reality.

Freud draws heavily in his discussion of the term on the work of early German psychologist Ernst Jentsch, specifically his discussion of narrative strategies in "On the Psychology of the Uncanny":

In telling a story, one of the most successful devices for easily creating uncanny effects is to leave the reader in uncertainty whether a particular figure in the story is a human being or an automaton, and to do it in such a way that his attention is not focused directly upon his uncertainty, so that he may not be led to go into the matter and clear it up immediately. . . . E. T. A. Hoffmann has repeatedly employed this psychological artifice with success in his fantastic narratives. (Freud 935)

In "Der Sandmann," this uncertainty is located primarily in the beautiful doll Olympia, the object of Nathanael's desire, though his dream of having his hands and feet unscrewed by Coppelius may create a momentary hesitation within the reader concerning the protagonist's status as well.

Clockwork offers multiple variations of the animated figure, ranging from the mundane to the marvelous. Falling clearly within the world of the real are the mechanical figures that decorate the town clock. Drawing on the long European tradition of decorating clock towers with elaborate figures—the great automaton clocks of Prague and Bern spring to mind⁷—Pullman opens his story with Karl, the gloomy young apprentice, noting, "It was the custom that when a clockmaker's apprentice finished his period of service, he made a new figure for the great clock of Glockenheim" (5). At the time of the story, the clock already features a collection of such devices:

The hour began to strike. The ancient clock wheezed and whirled as the mechanism came into play. The familiar figures came out first, and bowed or gestured or simply twirled on their toes; there was St. Wolfgang, throwing the Devil over his shoulder; there was the Archangel Michael with his glittering armor; there was the figure Herr Ringelmann had made for the end of

his apprenticeship, many years ago: a little boy who popped out, thumbed his nose at Death, and twiddled his fingers before ducking out of sight again. (102–3)

Although they are marvels of workmanship, such figures possess no hint of the uncanny; their clockwork nature is a matter of common knowledge in the town.⁸ At the other end of the spectrum lies Prince Florian, the clockwork boy, who bears even from the outset many marks of the marvelous: he appears to possess organic growth and development, and he is driven by a human heart. Two other examples, however, come closer to generating the uncertainty cited by Jentsch and Freud as sources of the uncanny: the animated corpse of Prince Otto from Fritz's tale, and Sir Ironsoul, the automaton brought by Dr. Kalmenius to answer Karl's need for a masterpiece to complete his apprenticeship.

The initial dramatic, uncanny moment in the inset story "Clockwork" arises from a description of the dead Prince Otto driving his horses through the gates, which poses to the reader the question of how to interpret the source of his animation. According to Freud, "Many people experience the feeling [of the uncanny] in the highest degree in relation to death and dead bodies, to the return of the dead, and to spirits and ghosts" (944). Fritz, Pullman's storyteller of the tale within the tale, plays on this anxiety in his account of Prince Otto's return. Already well-known in the town for his tales of horror—indeed, the townsfolk appear to be connoisseurs of the genre—Fritz fills his "Clockwork" with details designed to unsettle his listeners. After recounting the panicked flight of the horses drawing the sledge through the palace gates, Fritz describes the driver:

Well, as soon as the sentries came close, they saw who it was. It was none other than Prince Otto himself, stark dead, as cold as ice, with his eyes wide and staring ahead of him, his left hand gripping the reins so tight they had to be cut loose, and (this was the strangest part) his right hand still moving, lashing the whip up and down, up and down, up and down. (18, 20)

This contravention of natural law—corpses are by definition inanimate—prompts alternative explanations which invoke either the supernatural, in the form of religion (demonic possession), or science, in the form of technology (the uncanny cyborg). Freud further notes that "Dismembered limbs, a severed head, a hand cut off at the wrist, as in a fairy tale of Hauff's, feet which dance by themselves . . . all

these have something peculiarly uncanny about them, especially when, as in the last instance, they prove capable of independent activity in addition" (946). Although it remains attached to the corpse, Prince Otto's arm continues to lash his whip with the unceasing regularity that renders its motion independent of the body to which it belongs. When the Royal physician conducts his autopsy, he first observes "a gash across [Prince Otto's] breast just over the heart" and "when he opened the wound, there was no heart there. Instead there was a little piece of clockwork: just a few cogs and springs and a balance wheel, attached in subtle ways to the Prince's veins and tick-tick-ticking away merrily, in perfect time with the lashing of his arm" (21). In one sense, the explanation for Otto's continued whipping is practical and mechanical, as the arm is ostensibly driven by a simple clockwork device. Yet Fritz leaves the source of Prince Otto's animation open to uncanny questioning in his description of Dr. Kalmenius, the scientist responsible for the operation: "He would spend hours sitting in graveyards, contemplating the mysteries of life and death. Some said he experimented on dead bodies. Others said he was in league with the powers of darkness. No one knew for certain" (24). Such a description leaves the audience to weigh the option of possible demonic possession against unholy science.

If Prince Otto's story plays on the uncanniness associated with human death and an ongoing life of the body in the absence of an animating soul, the second clockwork device in Pullman's story extends that anxiety to the machine itself. Karl the apprentice finds a solution to his inability to create a suitable ornament for the town clock in the extraordinary mechanical knight brought by Dr. Kalmenius:

In the sledge was the most perfect piece of metal sculpture he had ever seen. It was the figure of a knight in armor, made of gleaming, silvery metal, holding a sharp sword. Karl gasped at the detail, and walked around looking at it from all angles. Every piece of armor plating was polished and shiny and tightly riveted to the next, and as for the sword. . . . "It's like a razor," he said. (36, 38)

While the name "Sir Ironsoul" might suggest the possession of an animating spirit, it more ironically and accurately reflects the cold and soulless nature of this clockwork device that springs into motion at the sound of the word "devil" and stops only after killing the person who uttered the word or on hearing a specific melody, "The Flow-

ers of Lapland." When he first examines the knight, Karl hesitates between an uncanny and a marvelous explanation of the figure's capabilities: "What a piece of work. . . . And how does he move? What does he do? He *does* work by clockwork, I suppose? Or is there some kind of goblin in there? A spirit or a devil of some kind?" (38). Although Kalmenius provides a (mainly) mechanical explanation for Sir Ironsoul's behavior—"He likes that [song], bless him. He stands still to listen to it, and that tips his balance wheel the other way, and then he stops" (41)—Fritz remains uneasy, his comments reflecting Jentsch's sense that the inability to distinguish merely mechanical from living figures is a source of anxiety⁹: "It's uncanny. It's not like a machine at all. I don't like it" (41). More importantly, however, the ruthless efficiency with which Sir Ironsoul responds mechanically to aural stimulus engenders a sense of horror: possessed of human characteristics such as a fondness for a certain tune, the knight nevertheless lacks both the ability to discriminate among the circumstances of utterance and the humanity to show mercy to the speaker.

If the animation of the corpse and the machine produces uncanny anxiety because the mind cannot interpret phenomena external to itself, the possibility that the mind might itself control events external to it is equally unsettling. The second category of the uncanny Pullman exploits in his narrative is what Freud designates as "the omnipotence of thoughts" (944): "we appear to attribute an 'uncanny' quality to impressions that seek to confirm the omnipotence of thoughts and the animistic mode of thinking in general, after we have reached a stage at which, in our *judgement*, we have abandoned such beliefs" (944 n7). For example, if one wishes an ill fate on another and the events imagined subsequently transpire, one is tempted to interpret such wishing as actual cause and effect rather than mere coincidence. In *Clockwork* Pullman explores this element of the uncanny in the plot of Fritz, the storyteller. One of the most satisfactory uncanny moments in the text comes as Fritz reaches the final lines of his unfinished story announcing the arrival of Dr. Kalmenius, when right on cue the door of the tavern opens, interrupting the framed narrative and admitting Dr. Kalmenius himself. The patrons of the White Horse are sufficiently unsettled by this coincidence to disperse almost immediately, while Fritz himself flees to his rooming house, where he packs his bags, ready to depart for Vienna, Berlin, or Prague. I count this moment as especially satisfying because the listener within the text and reader external to it share a simultaneous surprise and frisson as Fritz's words appear to have produced the arrival of the Doctor.

In his discussion of *Clockwork in Darkness Visible: Inside the World of Philip Pullman*, Nicholas Tucker presents the identity of Dr. Kalmenius as clearly resolved, and clearly belonging to the marvelous: "because Karl enters into a pact with the devil, represented here by the sinister Dr Kalmenius, he eventually dies a horrible death himself" (67). I would argue that Pullman does not resolve this instance of the uncanny quite so categorically. Throughout the story, although Kalmenius possesses extraordinary technological abilities, his power is not infinite: Prince Otto is not animated by attendant demons, but rather by "a simple piece of clockwork"; Prince Florian inevitably "runs down" because of the mechanical limitations of his construction. Fritz, however, appears to believe that supernatural agency is at work, whether through the power of his story—"I can't control it anymore. I wound it up and set it going, and it'll just have to work itself out" (90)—or through demonic intrusion; after all, as Gretl learns, the final words of his manuscript read, "If I come up with something good, the Devil can have my soul!" (80). She herself describes the arrival of Kalmenius as almost supernatural: "It was as if Fritz conjured him up out of nothing. Like Dr. Faust, conjuring up the Devil" (46).¹⁰ Three possibilities are at work here: Tucker may be right, and Kalmenius may in fact be the Devil incarnate, a figure from the world of marvels; certainly the foreknowledge of Karl's need for a figure for the clock suggests supernatural powers. Alternatively, the appearance of the doctor at that precise moment may be nothing more than a coincidence, since many strangers come to the town for the unveiling of the new clock figure, as Kalmenius himself points out to Karl: "Do you know, I tried to find a bed in five different inns before I came here, and they were all full up. Visitors from all over Germany—gentlemen and ladies—craftsmen, clockmakers, experts in all kinds of machinery—all come to see your new figure, your masterpiece!" (33). Finally, there is the uncanny possibility that both Fritz and Gretl entertain, that Kalmenius's appearance is the result of Fritz's words, brought about by the omnipotence of thought. This, too, has its analog in Hoffmann's story. Maria Tatar argues that "while Freud was at pains to show that the uncanny effects in 'Der Sandmann' arise from repressed infantile complexes, he never once considered that they might stem from one type of complex that he himself saw as a powerful source of the uncanny: belief in the omnipotence of thoughts" ("Reflection and Romantic Irony" 602). Karl's fate need not be read as moral retribution for dealing with the Devil (indeed, Fritz's language as writer brings him closer than Karl

to making a Faustian bargain), but rather as the natural consequence of very human duplicity and greed coupled with guilty anxiety about such conduct. Initially under extreme pressure to attain professional success through crowning his apprenticeship with a masterpiece, Karl succumbs to the self-interested allure of both reputation and economic gain in accepting Sir Ironsoul.

In drawing the reader's attention to the omnipotence of thoughts in Fritz's narrative, Pullman directs us to a broader exploration of the powers and limits of thought elsewhere in *Clockwork*. The uncanny attribution of the power of language to bring events into being has its modern counterpart in self-help movements like "the power of positive thinking" and the visualization exercises of sports psychologists who encourage their athletes to imagine in vivid detail their own success. Throughout *Clockwork* Pullman links ideas of wish-fulfillment familiar from the fairy tale tradition with notions of both performative language and the omnipotence of thoughts. Dr. Kalmenius, for example, describes the future as the product of thought: "We can control the future, my boy, just as we wind up the mechanism in a clock. Say to yourself: I will win that race—I will come first—and you wind up the future like clockwork. The world has no choice but to obey" (35). Karl doubts this notion, but Kalmenius exhorts him to "Wind up the future . . . Say what you want, and it will be yours." When the apprentice wishes for a figure for the clock, the doctor replies, "Nothing could be easier . . . You spoke—and there is what you wished for" (35–6).

At this point North American readers of the text in the widely available Scholastic edition are denied the complexity of Pullman's initial presentation of this story. In the Doubleday edition of *Clockwork* illustrated by Peter Bailey, a second narrative voice, based prosaically in the mundane world, counters the advice offered by Kalmenius in a dialogue box: "you don't win races by wishing, you win them by running faster than everyone else. And to do that you have to train hard and strive your utmost, and sometimes even that isn't enough, because another runner just might be more talented than you are" (36). Tucker is concerned, however, by what appears to be a contradictory idea in the follow-up comment in the box: "if you want something, you *can* have it, but only if you want everything that goes with it, including all the hard work and the despair, and only if you're willing to risk failure." He argues, "This does not quite add up, since if the end result may still be failure, it's hard to reconcile this with the idea that

we can still always get what we want as long as we try hard enough" (69). While the statements appear to be contradictory, they need not be. In the world as we know it, wishing alone can never produce the desired effect except coincidentally, but wishing combined with effort, intelligence, and courage will often, though not inevitably, do the trick. The point is that without all those elements—the wishing, the hard work, the capacity to risk everything for the wish—desire will never be fulfilled: wishing is the necessary first step, and the whole-hearted pursuit of desire may be as important as the attaining of it. In making this direct address from the margins of the text, Pullman's external narrator challenges the reader to move beyond both the simple wish-fulfillment of the marvelous and the uncanny omnipotence of thought to seek a strategy that acknowledges the importance of imagination and desire while emphasizing the equally important role of effort and initiative.

Clockwork and the Marvelous

If many of the cogs in Pullman's clockwork are drawn from Romantic literature of the uncanny, the gears they mesh with derive from the folk- and fairy tale tradition of the frankly marvelous. In introducing the world of the marvelous, Pullman counters the anxiety and unease associated with the uncanny in order to explore the more optimistic aspects of transformation and wish-fulfillment found in fairy tales. Drawing primarily on elements associated with marriage plots in the literary tales of the French court, Pullman introduces three themes that complement his use of the uncanny: the couple who long for a child, the character test proving fitness to succeed, and the wonderful transformation of the nonhuman object of desire through love.

When the narrator tells us Prince Otto and Princess Mariposa wish for a child, as readers of fairy tales we are unsurprised, for we have observed this longing many times before:¹¹

But time went by, and more time, and no child came to Prince Otto and Princess Mariposa. They sought the opinions of the finest doctors, but still no child came. They made a pilgrimage to Rome to seek the blessing of the Pope, but still no child came. Finally, as Princess Mariposa stood at the palace window, she heard the chiming of the cathedral clock and said, "I wish I had a child as sound as a bell and as true as a clock"; and when she had said those words, she felt her heart lift. (51–2)

Pullman gestures toward real-world solutions to infertility, but neither science nor religion can facilitate conception, and it is left to the omnipotence of thoughts, or wish-fulfillment as it is often described in fairy tale criticism, to provide a child, with the wish elegantly linked to the recurrent clock motif of his story. What does surprise the reader, however, is the immediate violation of the expected norms of this familiar narrative with the death of the child at birth and the motivations ascribed to the parents. Longing for a child is often read, rightly or wrongly, as a universal human desire arising from familial love in the fairy tale, where we find the wish expressed by prince and peasant alike. In *Clockwork*, however, such fantasies of unity are dispelled by the purely dynastic and political nature of Prince Otto's desire. Unlike most fairy tales, Pullman's story does not offer a healthy child, and "when the baby had taken one breath in this world, he could take no more, and he died in the arms of the nurse" (52). Mad not with grief for their loss but with "fury," Prince Otto seeks the aid of Dr. Kalmenius, exclaiming, "I will have an heir, come what may!" Otto longs not for a child to love and cherish but for a dynastic heir to render his kingdom politically stable. Princess Mariposa is no less self-absorbed. If the joy she feels at seeing her own child apparently alive "brought her back from the brink of the grave" (56), our sympathies are soon tempered by her vanity: "Besides, she looked so pretty with a child in her arms; she had always known she would" (56). The wishes brought to fulfillment in *Clockwork* are not those of loving parents who long to take joy in the life of another, but rather are those of narcissists who see their child solely as an extension of their own self-interested desires.

Pullman offers an alternative to this narcissism in his characterization of Gretl, the one character capable of selfless love. He defines her identity through two fairy tale motifs: first, she participates in the character test found in many tales which determines the romantic success of an individual; second, she offers her love to a nonhuman object and in so doing transforms him to human form. Pullman invokes the character test through the tavern cat, Putzi. Although the cat initially seems no more than a realistic detail added for local color, he plays a key role in suggesting the essential qualities of the human characters. Character tests often rely on an interaction with some type of animal helper, who will in turn aid the character in some later task. As Maria Tatar explains,

The hero of "The White Snake," like the simpleton of "The Queen Bee," hardly lifts a finger to win his bride. Once he displays compassion for wildlife by coming to the rescue of three fish, a colony of ants, and three ravens, he joins the ranks of the "chosen" heroes who receive assistance from helpers as soon as they are charged with carrying out tasks. Although male fairy tale figures have customarily been celebrated for their heroic exploits and feats, their greatest achievement actually rests on the successful passing of a character test. ("Born Yesterday" 350)

Similarly, in "The Golden Bird," the youngest son's courtesy to a talking fox gives him the advantage over his elder brothers. Such kindness to animals constitutes a test of character, demonstrating which figures merit reward in the moral economy of the fairy tale. In *Clockwork*, Karl the apprentice demonstrates his rough nature in his treatment of the creature, but more importantly, he fails the fairy tale character test: "Putzi the cat, waking from his snooze on the hearth, came and rubbed his back against Karl's legs. Karl kicked him savagely away" (12). Later, he ignores the cat, who has been shut out in the cold, not once but twice. The narrator draws specific attention to this failure of character: "Once again he took no notice of Putzi. . . . There's no need to be superstitious about cats, but they are our fellow creatures and we shouldn't ignore them. It would have been polite of Karl to offer his knuckles for the old cat to rub his head against, but Karl was wound up too tightly for politeness" (91–2). As a result, he fails to notice Putzi following him inside, and when surprised by his presence, exclaims "What the devil—" starting Sir Ironsoul into motion and precipitating his own death. According to the pattern of the fairy tale, Karl's failure of the character test of kindness seals his lack of success just as surely as his bargain with the devilish Kalmenius. Conversely, Gretl's consistent awareness of the cat, demonstrated through both word and gesture—"What a strange story that was going to be!" she said to Putzi, stroking his ears" (45)—proves her fitness to prosper.

Gretl's kind nature, revealed in her treatment of the cat, is central to her key role in *Clockwork*, her transformation of Prince Florian from automaton to human being. The fairy tale motif of marvelous transformation is perhaps most clearly rendered in tales featuring animal grooms who must be restored to their true human forms. Such tales have a long history and feature a variety of transformation processes. Many early versions of stories from the folktale tradition include a female protagonist who, when faced with an animal bridegroom, en-

acts a transformation based on an act of violence; as Maria Tatar phrases it, "Acts of passion as much as acts of compassion have the power to disenchant" (*Classic Fairy Tales* 29). In early versions of "The Frog Prince," for example, the princess loses her temper with her amphibious suitor:

Then she felt beside herself with rage, and picking him up, she threw him with all her strength against the wall, crying, "Now will you be quiet you horrid frog!"

But as he fell, he ceased to be a frog, and became all at once a prince with beautiful kind eyes. And it came to pass that, with her father's consent, they became bride and bridegroom. (Grimm and Grimm 35)

Only in later versions does the princess kiss her frog prince to transform him. In characterizing Gretl's transformative power, Pullman seems to be drawing on the writers of the eighteenth-century French court, who emphasized feminine kindness and virtue as the necessary source of transformation.¹² In "Beauty and the Beast," for example, the female protagonist's recognition of the Beast's goodness leads her to overcome her misgivings concerning his appearance. It should be remembered, however, that in addition to her sensitivity, Beauty also possesses considerable courage in agreeing to go to the Beast to discharge her father's debt. Even more pointed in its insistence on the responsibility of the female protagonist to express sympathy and selflessness is Madame d'Aulnoy's "The Wonderful Sheep." In this less familiar tale, the narcissism of its heroine precludes the transformation of the sheep back into a prince, and results instead in his death. Thus, in establishing Gretl as a figure capable of courage, sympathy, and self-sacrifice, Pullman casts her in the later tradition of the fairy tale heroine whose love produces a marvelous transformation in the object of her affection.

Like the younger sons of the fairy tale tradition who initially seem unlikely candidates for heroic status, Gretl moves from marginal to central character. She enters the story as an apparently minor detail of the setting for Karl and Fritz's narratives. Her most immediate concern is whether or not to serve the inebriated Karl: "Gretl, the young barmaid, looked anxiously at Fritz because she was only a child, and wasn't sure whether she should be serving someone in Karl's condition" (12). Like the reader, however, she is later the recipient of Fritz's tale, and her uniquely sympathetic response establishes her fitness

for fairy tale success. Although uncanny elements have rendered Fritz popular among the townsfolk as a teller of horror stories, Gretl is affected instead by the human tragedy of "Clockwork." Developing the character traits established in her treatment of Putzi, Gretl extends her sympathies to the little prince as well:

There was one thing she couldn't get out of her mind. It wasn't the clockwork in the dead Prince's breast; it wasn't the horses foaming with terror or the dead driver behind them; it was the young Prince Florian.

She thought: poor little boy, to travel home in that frightful way! She tried to imagine what terrors he must have faced, alone in the sledge with his dead father, and she shivered under her blankets, and wished she could comfort him. (44-5)

Gretl's imaginative engagement with the human suffering of Prince Florian marks the first moment in the text when he is perceived as being significant for his own sake and not simply as the fulfillment of the desires of others, whether as an accessory to maternal beauty or as a dynastic extension of his father's power. Pullman subsequently endows his heroine with both cleverness and courage in her rescue of Prince Florian. When she returns from seeking Fritz's assistance to find Karl dead, she "nearly fainted, but she was a brave girl, and she had seen what lay in Karl's hand. It was the heavy iron key of the clock tower. With her mind in a whirl, she was still able to guess part of what had happened, if not all of it, and she realized what Karl must have done with the prince" (95). Resolutely refusing to abandon the clockwork boy to his fate, she climbs the tower, dodging bats and clambering over the skull-face of Death, until she reaches Prince Florian, where she sacrifices her own comfort to warm his metal frame: "I think you need warming up. You're too cold, but that's hardly surprising, seeing what they've done with you. Never mind! If I can't get you down, I'll stay up here with you. I can wrap my cloak around us both, you'll see" (99). In the morning, the townsfolk expecting Karl's masterpiece at first mistake them both for clockwork figures—"A work of genius," cried the Burgomaster, and another voice said, "The best figures ever made!" (103)—but in the marvelous fairy tale world of empowering human sympathy, Gretl's love has transformed the mechanical prince into a living child: "She had lost her heart to the prince, and kept it, too, which was how he came to be turned from clockwork into boy. So they both lived happily ever after; and that was how they all wound up" (107).

In electing to make his heroine's love transform a machine rather than the animal groom or suitor more usually found in fairy tales, Pullman brings together the dual threads of the marvelous and the uncanny that have run throughout the story. The significance of Prince Florian's transformation is perhaps best understood with recourse to the text underlying Pullman's use of the uncanny, Hoffmann's "Der Sandmann." Both stories feature the love a human being experiences for an automaton: Nathanael becomes infatuated with Olimpia, the clockwork society beauty, and Gretl cares for the mechanical prince. The nature of their experiences, however, is diametrically opposed. Hoffmann's treatment is part social satire, part revelation of the depths of the solipsistic mind. His protagonist fails to recognize that he has entered a relationship with an automaton for two reasons: first, Hoffmann suggests, the women of his social circle are already such artificial creatures, patterned into mechanical behavior, that it really is quite difficult to tell who is human and who isn't. The situation is exacerbated by Nathanael's narcissistic character: when a man requires no more conversation from his partner than "Ah" and "Oh" in order to demonstrate her breadth of understanding, it is not surprising that clockwork will suffice. Self-absorbed in the extreme, Nathanael has no interest in observing Olimpia as autonomous other, seeing her only as the reflection of his own desire. Although when Gretl meets the little prince he is hardly capable of more spoken response than Olimpia (he can only sing a few notes of his song), she responds imaginatively to his needs and circumstances rather than her own. And since he belongs to the world of marvelous automata,¹³ and is not simply clever clockwork like Olimpia, his responses indicate actual exchange, rather than simply mechanical programming: "Gretl touched the prince's cheek gently and found it cold, but her touch awoke something in his machinery for an instant, and he turned his eyes to hers and smiled" (78). Unselfish love of the type Gretl offers provides alchemy capable of transforming inorganic metal to living flesh. Hoffmann's world of the uncanny does not allow for such real transformations, and Pullman turns to the fairy tale world of the marvelous to explore the possibility of transformative love.

Clockwork and the Allegorical

The transformation of Prince Florian from clockwork machine to fully human boy takes place within the other-world parameters of the won-

der tale and stands in direct contrast to the repeated failure of uncanny mechanical solutions to the instability of his heart. This juxtaposing of the uncanny and the marvelous, however, must be set against a third interpretive possibility that readers are encouraged to pursue within the text. Both uncanny and marvelous texts must meet one key condition for their effect: the reader must experience the text as representing literally the conditions of the world it describes. The uncanny obeys the laws of this world, and depends upon a real explanation of all supernatural events. The marvelous does not obey the laws of this world, but the supernatural events that take place must literally be true according to laws of the fictional world the author creates. However, if a text is understood as allegorical or metaphorical—if it invites interpretation on both a literal and figurative level—then it is removed from the fantastic, the uncanny, and the marvelous. As Todorov argues, reading a text allegorically removes it from the realm of the literally possible, thus also removing it from the fantastic:

Fontanier . . . writes: “allegory consists in a proposition with two meanings, a literal meaning and a spiritual meaning both together . . .” Let us recapitulate: first of all, allegory implies the existence of at least two meanings for the same words; according to some critics, the first meaning must disappear, while others require that the two be present together. Secondly, this double meaning is indicated in the work in an *explicit* fashion: it does not proceed from the reader’s interpretation (whether arbitrary or not). . . .

If what we read describes a supernatural event, yet we take the words not in their literal meaning but in another sense which refers to nothing supernatural, there is no longer any space in which the fantastic can exist. (63–4)

Thus, if a text draws attention to its own figurative language, it encourages the reader to look beyond literal interpretation to engage with a second level of meaning. In the Doubleday edition of *Clockwork*, the author prepares us explicitly for this type of reading by drawing attention to the prevalence of metaphors of the heart in English through narratorial commentary in a dialogue box: “Gretl was kind-hearted, you see. Her heart was in the right place. Her heart was warm, her heart was tender, she had a heart of gold. You know these expressions?” (44). None of these phrases is meant for literal interpretation, of course—all stand as metaphors signifying the psychological traits

of kindness and sympathy that the character exhibits. By directly challenging to reader to acknowledge the metaphorical rather than the literal status of such phrases, Pullman prompts an interpretation of the whole that argues for a spiritual rather than a literal meaning.

Pullman further encourages such interpretive strategies by placing a metaphorical paradox at the center of his tale in Dr. Kalmenius's cryptic advice to Prince Otto concerning saving his son's life: "He is failing because he has no heart. Find him a heart, and he will live. But I don't know where you'll find a heart in good condition that its owner is willing to part with. Besides . . . the heart that is given must also be kept" (59–60). Prince Otto hears only the first part of the advice and interprets the prescription literally and mechanically, seeking first to obtain a heart from a loyal family friend, and ultimately sacrificing his own, not from a selfless love but from a self-interested concern with his own status:

And there was only one solution. Prince Otto realized that he had to sacrifice himself, and he was ready. The dynasty was more important than anything else: more important than happiness, than love, than truth, than peace, than honor; far more important than his own life. Prince Otto would give up his heart, cold, fanatical, and proud as it was, for the sake of the future glory of the royal house. (65)

The self-interested heart of a political dynast proves a spiritually limited mechanism, however, providing only a short-term mechanical solution; five years later, the clockwork prince once more begins to run down. In immediately sacrificing his heart, Prince Otto fails to absorb the whole import of Kalmenius's prescription, which ends with the proviso, "the heart that is given must also be kept" (60). Only the sympathetic understanding expressed by Gretl, and her eventual love for the clockwork boy, can truly enact the marvelous transformation: only the heart given metaphorically by one who loves can fulfill the conditions of Prince Florian's cure.

In effect, Pullman uses figurative language to evoke a separate category that we might think of as the marvelous capacity of the real. Gretl's status as a courageous and kind heroine, who in terms of the text inhabits literally the fairy tale world of the marvelous but who metaphorically demonstrates the extraordinary capacity of the world as we know it, is consistent with Pullman's vision in the *Dark Materials* trilogy. Like Gretl, Lyra belongs to a fantasy world in which the mate-

rial laws of this world do not apply—human beings are born with daemons, subtle knives can cut the material fabric of the universe—but ultimately it is the human qualities she shares with the world as we know it that enable her to transform her alternate universe: courage, kindness, loyalty, and love. Pullman's fantasies function to remind us of the marvelous potential possessed by the human spirit, and lead us back from the fictional worlds he creates with an understanding of the marvelous but very real power we possess to transform our own.

"Everything means something": Reading Philip Pullman

In *Lyra's Oxford*, Pantalaimon and Lyra puzzle over the meaning of a series of events, but conclude that "everything means something. . . . We just have to find out how to read it" (5–6). Critics of Pullman's work take these words to heart. *Clockwork* presents an opportunity to explore in a single slim volume the textual complexity and sophistication that mark Pullman's work as a whole. The production of meaning through the juxtaposing of genres and complex literary structures that I have traced with reference to *Clockwork* is by no means unique in Pullman's oeuvre. Alert readers of his books encounter it everywhere. Perhaps the closest analogue is *I Was a Rat*, with its satiric blend of fairy tale and tabloid journalism, but *Spring-Heeled Jack*, based on Victorian penny-dreadfuls and snippets of Dickens, works in a similar fashion. By interweaving allusions to other texts and by posing questions whose answers lie outside the boundaries of the original stories he adapts, Pullman encourages his readers to think of texts as generative of meaning beyond their initial reading. Indeed, he teaches his readers to understand his stories *as* texts, as linguistic structures that explore the delight to be found in language, whether at the level of the word in the scatological pun of translating "la vache entière en croûte" as "cow pie" in *Spring-Heeled Jack* (49) or on the larger scale of literary genres and their systems.

Current criticism in children's literature has increasingly focused on the idea of the dual audience in the text, especially in the wake of the special issue of *Children's Literature* (Vol. 25, 1997) devoted to "cross-writing," edited by U. C. Knoepfelmacher and Mitzi Myers, which addresses the presence of both adult and child implied readers in children's books.¹⁴ Here, however, I would like to extend that idea beyond the binary of the terms "adult" and "child," which may carry connotations of hierarchy, to suggest that Pullman writes to develop

an audience that occupies a continuum of interpretive ability and experience. More importantly, Pullman does not valorize one segment of the audience over another: his particular skill lies in bringing readers occupying differing interpretive experience to similar conclusions by alternate means. In *Clockwork*, for example, readers with experience limited to fairy tales will nevertheless recognize in the marvelous transformation of Prince Florian the human love that produces the change. More resistant readers, reluctant to suspend their disbelief in the unreal transformations offered in such tales, may elect to focus instead on the marvelous transformative capacity inherent in real human love implied in a metaphorical reading of the text. In *Some Thoughts Concerning Education*, John Locke recommends that the child be given Aesop's fables to encourage literacy skills, so that as an adult the reader may not be embarrassed by memories of childhood reading experiences. Pullman's texts might fit the same category: although themes may be understood more deeply, and textual virtuosity appreciated more fully, as the reader develops literary sophistication, his audience, regardless of age, may delight, unashamed, in the individual pleasure of their textual experience.

Notes

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¹*Alternative Worlds in Fantasy Fiction* features an extensive discussion of Pullman's literary sources by Millicent Lenz, and many interviewers have engaged Pullman in discussion of his use of Milton and Blake, as well as other Romantic writers. Kliest's essay "On the Marionette Theatre," for example, offers an essential background to the trilogy; in March 2004 Pullman introduced a staged version of the essay at the National Theatre in London as well as answering questions concerning the piece after the performance.

²Bergit Röder has noted the connection between complex narratives of the nineteenth century and postmodernism:

The difficulty of establishing an objective view of events is a common feature of many works of Romantic German fiction. In emphasizing the subjective character of perception, and thereby breaking with the Enlightenment's faith in the theoretical possibility of establishing an objective view of the external world, the German Romantics embarked on an epistemological project that, in its extreme form, anticipates the solipsistic tendencies of some theories of postmodernism. (18)

³See Angela Carter, *The Bloody Chamber and Other Stories*; Tanith Lee, *Red as Blood, or, Tales from the Sisters Grimm*, and Robert Munsch, *The Paper Bag Princess*.

⁴See Zipes, "Spells of Enchantment" 378–83 for an account of the rise of the fairy tale in France in this period, especially of the sociohistorical context of this shift in emphasis.

⁵Throughout this paper I have in mind the distinctions described by Jack Zipes in "Breaking the Disney Spell":

What we today consider fairy tales were actually just one type of the folk-tale tradition, namely the *Zaubermärchen* or the magic tale, which has many sub-genres. The French writers of the late seventeenth century called these tales *contes de fées* (fairy tales), to distinguish them from other kinds of *contes populaires* (popular tales), and what really distinguished a *conte de fée*, based on the oral *Zubermärchen*, was its transformation into a literary tale that addressed the concerns, tastes, and functions of court society. (334)

When discussing structures based on the oral tradition, I use "folktale," but otherwise use "fairy tale" to designate the later, more literary uses of such ideas, and the form in which they are most familiar to readers.

⁶For a brief history of timekeeping see NIST Physics Laboratory, "A Revolution in Timekeeping."

⁷Mechanical clocks featuring automatons were found throughout Europe from the Middle Ages on. Strassbourg, Prague, and Bern possess especially fine examples of this art.

⁸H. A. Lloyd comments:

whilst the movements of these figures with their symbolical references to the adoration of the Virgin, and the presentation of Life and Death etc., may have been impressive to the simple and ignorant populace of the sixteenth century, their design and construction was relatively straightforward and simple. (41)

It should perhaps be acknowledged that initially such clocks could incite considerable anxiety. The astronomical clock at Prague is a case in point: "The astronomical clock was so amazing that people thought it was a magical device. After it was built, the burghers decided to reward the clockmaker by putting-out his eyes. The townspeople were so proud of their magic clock that they made sure that the clockmaker would never build another one like it" (Farseth, "What is an Automaton?"). The blinding in this well-known legend about mechanical clocks forms another subtle link with Pullman's narrator's comment concerning the mainspring of an alarm clock: "It's made of tempered steel, with an edge that's sharp enough to draw blood. If you play about with it carelessly it'll put out your eye" (xii)—and also with Nathanael's anxiety about losing his eyes in "Der Sandmann."

⁹According to Freud,

Jentsch has taken as a very good instance [of the uncanny] "doubts whether an apparently animate being is really alive; or conversely, whether a lifeless object might not be in fact animate"; and he refers in this connection to the impression made by waxwork figures, ingeniously constructed dolls and automata. To these he adds the uncanny effect of epileptic fits, and of manifestations of insanity, because these excite in the spectator the impression of automatic, mechanical processes at work behind the ordinary appearance of mental activity. (946)

¹⁰It is perhaps worth noting that Pullman provides an epigraph from Marlowe's *Dr. Faustus*, an English Renaissance version of the German Faust legend, and as is often the case with Pullman's writing, the epigraph sets the keynote for the work as a whole: "The stars move still, time runs, the clock will strike, / The devil will come, and Faustus must be damn'd. . . ." Marlowe's lines sum up not only his protagonist's sense of the inevitability of consequences for actions taken (in this case, a pact with the Devil), but also the sense that Faustus's narrative plays out in the fullness of a time measured both cosmi-

cally in the movement of the stars, and mechanically in the striking of the clock. Marlowe also plays with the idea of omnipotence of thoughts early in the play, as Faustus believes that it is his own words that produce the arrival of Lucifer's henchman, commenting, "How pliant is this Mephostophiles, / Full of obedience and humility. / Such is the force of magic and my spells," to which the demon replies that his "conjuring speeches" were "the cause, but yet *per accidens*" (269–71, 285–6), indicating that Faustus's words possessed no power other than to reveal the precarious state of his soul.

¹¹The desire for children in folk tales, and the bargains made to obtain them, extend to all classes. In "Tom Thumb," the poor country couple wish for a child—"How dull it is without children about us . . ." 'Yes,' answered his wife, and sighed, 'if we could only have one, and that one ever so little, no bigger than my thumb, how happy I should be! It would, indeed, be having our heart's desire'" (Grimm and Grimm 160); in "The Almond Tree," we learn that "there was a rich man, and he had a beautiful and pious wife, and they loved each other very much, and they had no children, though they wished greatly for some, and the wife prayed for one day and night . . . 'Ah,' said the woman sighing deeply and looking down at the blood, 'if only I could have a child as red as blood, and as white as snow!'" (186).

¹²As Maria Tatar notes,

"Beauty and the Beast," unlike most fairy tales, accommodates two developmental trajectories. It not only charts the challenges facing Beauty but also registers the transformation sustained by Beast, showing how these two antithetical allegorical figures resolve their differences to be joined in wedlock. What makes this story especially attractive is the way in which it is deeply entrenched in the myth of romantic love even as its representational energy is channeled into the tense moral, economic, and emotional negotiations that complicate courtship rituals (*Classic Fairy Tales* 25).

For a full discussion of the development and meanings of the tale, see Griswold and Hearne.

¹³In Prince Florian, Kalmenius creates what should be the most uncanny of automations, one that appears to possess organic life, that cannot be distinguished from a living being:

He smelted the ore and refined the silver, and beat it into a subtle thinness; he spun gold into filaments finer than spiders' silk, and attached each one separately to the little head; he cast and filed and tempered, he soldered and riveted and bolted, he timed and adjusted and regulated, until the little mainspring was tight and the little escapement on its jeweled bearings was ticking back and forth with perfect accuracy; and when the clockwork child was ready, Dr. Kalmenius gave him to Prince Otto, who scrutinized him carefully. The baby was breathing and moving and smiling and even, by some secret art, warm. In every way he looked exactly like the child who had died. (54, 56).

However, though this description of the prince's construction emphasizes the inorganic mechanism, stressing the mechanical processes of smelting, casting, tempering, filing, etc., the result nevertheless approaches the category of the marvelous rather than the uncanny. The clockwork child grows, and develops and learns by some process that defies his inorganic structure. The ultimate transformation of the clockwork prince into a living boy confirms his marvelous status. Although Dr. Kalmenius is capable of producing astonishing mechanical effects to counterfeit life, even he concedes that something more is required to produce the real thing.

¹⁴The editors devised the term to address what they saw as "a dialogic mix of older and younger voices . . . in texts too often read as univocal" (vii). Such voices are most often imagined as belonging to "child" and "adult" readers, but while such a division is helpful in isolating textual elements that appeal to differing levels of interpretive ability,

it poses other difficulties, not least in its construction of a binary opposition that implicitly suggests a hierarchy of superior and inferior readers. Such a classification leads some to find an appeal to this dual audience "problematic," as if in addressing parts of the text to the adult reader, an author necessarily condescends to or excludes the child reader from some part of the textual experience. As Peter Hollindale has pointed out, discussion becomes framed in terms of "child" people and "book" people, polarizing the debate concerning which voice carries greater interpretive authority (20–1). Pullman's texts, however, suggest that the idea of the dual audience, whether understood as child versus adult reader, or child-centered versus book-centered critic, is too limited. Elsewhere I have attempted to sidestep the adult/child split by speaking in terms of naive and sophisticated readers, where age may be a factor, but where sensitivity to textual experience ultimately determines the response to Pullman's works. "Adult," for example, is a category embracing readers of a wide range of interpretive experience, ranging from literary scholars who act as professional interpreters of texts to those whose mode of engagement with the text is as uninflected as any child's. Similarly, some young readers possess an intuitive grasp of language and literary structures that surpasses what one might expect from the designation "child reader." In a recent discussion of the politics of reading, Pullman comments that understanding the complexity of his critique of the misuse of religious authority "requires the sort of sophistication that you find in bright eleven-year-olds; it may be beyond the reach of some adults" ("Chris Weitz").

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