

‘I never ask advice about growing’: Darwin and Size in Carroll

Candidate Number:

Word Count: 10,994

I. Introduction and Scientific Background

Children—always in the process of changing size—tend to have a preoccupation with physical dimension. Unsurprisingly, size features in “children’s literature which has become the repository for stories about dwarfs and giants, and which has made a classic out of the first two voyages of *Gulliver’s Travels*.”¹ Lewis Carroll’s *Alice in Wonderland* in particular allows children to play out fantasies of size: as Alice becomes larger and smaller, children recognise the social benefits of being a ‘natural’ height. Goldie Morgantaler notes that in *Alice in Wonderland*, “[b]eing grown-up literally and being grown up chronologically are two different things”²: one can add to that list being grown up psychologically and emotionally. Alice must come to the realisation that she can adapt to her environment in myriad ways without having to change her identity. This relatively radical idea borrows concepts from Charles Darwin, whose works developed as a cultural obsession from their first publication. Carroll’s writings display awareness of Darwin’s influences and use his principles to make assertions regarding size and shape. The characters in Carroll’s works, from Alice to Sylvie, prove more functional and mature when they are able to see size as nonessential to being: when they can subscribe to the evolutionary biologist’s views of the adaptive self.

The Victorian obsession with science pervaded all levels: “science in the form of natural history was something of a national hobby among the middle classes. At the professional level, it was a cause to be fought for”³. From ideas about the plant and animal kingdom to changing conceptions of humanity, Darwin’s writings exerted profound impact. His 1859 *On the Origin of Species* almost immediately changed popular views regarding biology, evolution, and descent. In his *Origin of Species*, Darwin asks:

¹ Morgantaler, Goldie. “The Long and the Short of Oliver and Alice: The Changing Size of the Victorian Child.” *Dickens Studies Annual*, ed. Stanley Friedman et al. Vol 29. AMS Press: New York, 2000. Print. 83-98.p. 83.

² 83.

³ Gilmour, Robin. *The Victorian Period: The Intellectual and Cultural Context of English Literature, 1830-1890*. Longman: London, 1993. Print. p. 111.

“how is it that varieties . . . become ultimately converted into good and distinct species?”⁴ The idea of species’ tendency to shift predates Darwin; much of the “Darwinian revolution” began long before Darwin’s birth.⁵ His great innovation was in explicating the means of this change. Even terms now intertwined with Darwinism like “natural selection” and “survival of the fittest” did not originate with him.⁶ Ultimately, his argument held that, because more individuals in any species are born than can survive, only the fittest for the environment will live to spread their genetic material to the succeeding generation. Therefore, species continually adapt for increased fitness. Among the educated, particularly at Oxford, Darwin entered cultural consciousness almost immediately, and “[b]y 1875 the majority of educated people in Europe and America had accepted evolution”⁷. Within a year of the *Origin*’s publication, Darwin and his theory of natural selection were topics of conversation across the country.

Whether Charles Lutwidge Dodgson—Christian name and public persona of Lewis Carroll⁸—was a wholehearted proponent of Darwinism is open for interpretation, but *Alice*’s author would have been acquainted with the theory. Carroll’s Wonderland was a contemporary of Darwin’s ‘tangled bank’: *The Origin of Species* came out six years before Carroll’s novel and only three years before Carroll would write the manuscript *Alice’s Adventures under Ground*. One critic describes Darwinist thought at the time as being “in the air, a pervading bad smell.”⁹ This biased account—Darwinism was not wholly negative—nevertheless captures the omnipresence of Darwin. Another critic says of Carroll’s involvement with Darwinism that he rejected evolutionary theory “undogmatically and treated it as a

⁴ Darwin, Charles. *The Origin of Species by Means of Natural Selection: or, the Preservation of Favoured Races in the Struggle for Life*. Ed. J. W. Burrow. London: Penguin, 1985. Print. p. 115.

⁵ Bowler, Peter J. *Evolution: The History of an Idea*. University of California Press: London, 2003. Print. p. 2.

⁶ “Natural selection” as a term has been around for many years; “survival of the fittest” was a term coined by Herbert Spencer, who never believed fully in Darwin’s theories. Source: Bowler 71, 104.

⁷ Bowler 274.

⁸ Charles Lutwidge Dodgson remained, throughout his life, attentive to the distinction between his identity and his Lewis Carroll persona; he took great pains to ensure that the two were never confused. For the sake of simplicity, however, I will generally use the name Lewis Carroll throughout.

⁹ Empson, William. “*Alice in Wonderland: The Child as Swain*”. *Some Versions of Pastoral*. London: Penguin, 1995. Print. 201-233. p. 204.

source of amusement rather than a doctrine to be opposed at all cost.”¹⁰ Carroll’s writings do not make clear that he rejected evolution, though it did not shake his faith as it did for many. Carroll biographer Morton N. Cohen takes a more moderate stance: “Charles was not entirely repelled by Darwin’s theories, or he would not have been willing to associate his own work with them. He did not swallow Darwin’s speculations whole but believed that the scientist’s work deserved attention.”¹¹ Diaries and letters seem to favour Cohen’s opinion. The Darwin Correspondence Project lists two short letters from Darwin to Carroll, in which Carroll apparently sent Darwin a photograph.¹² The letters make no mention of the content of the photo, but Carroll’s diary does: in an entry dated 1872, Carroll writes of “Mr C. Darwin whose book on *The Expression of the Emotions in Man and Animals* I am reading, and to whom I have given a print of ‘No lessons today’”¹³, ostensibly for publication in another of Darwin’s works, though Darwin never used the photo. *The Expression of the Emotions* had just been published that year, indicating that Carroll valued staying up-to-date with scientific trends.

Critics and biographers agree that Carroll probably attended the famous debate of 1860, held in Oxford between Sam Wilberforce and Thomas Huxley: the first and most major debate over Darwin’s natural selection.¹⁴ At least, Carroll served “on the reception committee for the men of science from foreign countries and distant parts of the UK”¹⁵ and would have been unlikely to miss the important event, which quickly “became part of science’s mythology.”¹⁶ The debate was held at the University’s Honour School of Natural Science—now the University Museum of Natural History—a place Carroll frequented. In the building at the time hung two paintings of dodos, a 1651 piece by Jan Savery and a 1759 one by George Edwards, thought to have influenced the Dodo in *Alice’s Adventures in Wonderland*; in addition,

¹⁰ Lockwood, David. “Pictorial Puzzles from *Alice*”. *The Carrollian* 14 (2004): 43-61. Print. p. 45.

¹¹ Cohen, Morton N. *Lewis Carroll: A Biography*. London: Macmillan, 1995. Print. p. 351.

¹² *Darwin Correspondence Project*. University of Cambridge. 6 June 2011. Web. 8 June 2011.

¹³ Roger Lancelyn Green, ed., *The Diaries of Lewis Carroll*, 2 vols. New York: Oxford University Press, 1954. Print. p. 315-6.

¹⁴ Cohen 350; Empson 204; Lockwood 44.

¹⁵ Lennon, Florence Becker. *The Life of Lewis Carroll*. London: Collier, 1963. Print. p. 44.

¹⁶ Thomson, Keith. “Huxley, Wilberforce and the Oxford Museum.” *American Scientist* September-October 2000. Web. 5 June 2011.

the building housed the only surviving dodo specimen with soft tissues, now dubbed the ‘Alice in Wonderland’ specimen because of its influence on Carroll.¹⁷ Carroll at least owned Darwin’s books: in what Morton N. Cohen describes as Carroll’s “usual measured way,” he “added to his library no fewer than nineteen volumes of works by Darwin and his critics.”¹⁸ Proof of ownership does not, of course, equate to proof of readership; it less represents proof of belief. Ultimately, Dodgson the mathematician read Darwin’s works with an attitude somewhere between cynicism and full acceptance, and Carroll the writer allowed the themes of natural selection to filter into his published material.

Central to an understanding of Darwinism—though this distinction was not always made in the Victorian era—is the notion that natural selection begets neither inherent progress nor regression. Nature, largely through predatory relationships and sexual competition, “selects the best individuals out of each generation to live . . . the individuals composing each successive generation are generally better suited to their surroundings.”¹⁹ The leap from “better suited to their surroundings” to simply “better” is an easy but fallacious one. Lambert Quartelet’s 1835 *Social Physics*, which “exercised a great influence on physiological growth studies in nineteenth-century Britain and France”, espoused the idea of “a perfect form or type of man, and the tendency of the race to attain that type”²⁰. The evolution of humankind, however, does not guarantee “the movement of man to a desirable goal. It is a natural scientific conception compatible either with optimism or with pessimism”²¹. A species that seems to be evolving one way—larger size, sharper eyes, darker colour—and then shifts back to its initial state of being did not first progress and then regress: it simply adapted twice to environmental stimuli. Contemporary scientists write with clarity that “there is no built-in mechanism that drives evolution in one direction; there is no ‘progress.’”²² This ambivalence proved difficult for Victorians, who desired progress. In what

¹⁷ Private materials. Oxford University Museum of Natural History. Parks Road, Oxford. OX1 2PW. 09/06/2011.

¹⁸ 350.

¹⁹ Henkin, Leo Justin. *Darwinism in the English Novel, 1860-1910*. Russell & Russell: New York, 1963. Print. p. 48.

²⁰ Steedman, Carolyn. *Strange Dislocations: Childhood and the Idea of Human Interiority, 1780-1930*. Cambridge, MA: Harvard University Press, 1998. Print. p.49

²¹ Henkin 197.

²² Bonner, John Tyler. *Why Size Matters: from Bacteria to Blue Whales*. Oxford: Princeton University Press, 2006.

evolutionary biologist Stephen Jay Gould calls “Darwin’s greatest failure of resolution”²³, the scientist rarely seemed of one mind regarding the issue of such forward motion. Darwin’s natural selection theory “provides no rationale for progress because the theory speaks only of adaptation to changing local environments.”²⁴ Darwin did acknowledge that his theory runs contrary to the notion of progress: in one of his notebooks, he takes exception to the “tree of life” metaphor, claiming that coral would be a better model²⁵: the “tree” itself reaches toward the heavens, indicating increased greatness, while a coral contains no such value judgement. In a letter dated 1872, Darwin writes, “After long reflection I cannot avoid the conviction that no innate tendency to progressive development exists”²⁶, despite an earlier assertion in *Origin* that “all corporeal and mental endowments will tend to progress towards perfection.”²⁷ Darwin seems to have settled the question in his own mind, admitting his early mistake. However, as Gould writes, “Darwin was not prepared to abandon his culture’s central concern with progress, if only to respect a metaphor that appealed so irresistibly to most of his contemporaries.”²⁸ Darwin knew that his theories, already polarising and controversial, would have to make some concessions to popular Victorian conceptions of the world if they were to gain any ground. Ultimately, the vast cultural reverberation caused by Darwinism and its implications for social and spiritual lives was felt most strongly in academic circles, of which Lewis Carroll was a part.

II. Size Background

Of Jonathan Swift’s *Gulliver’s Travels*, James Boswell concluded: “[w]hen once you have

Print. p. 63.

²³ Gould, Stephen Jay. *The Structure of Evolutionary Theory*. Cambridge, Mass: Harvard University Press, 2002. Print. p. 467.

²⁴ 468.

²⁵ Darwin, Charles. *Notebook B [Transmutation of Species (1837-1838)]*. *The Complete Work of Charles Darwin Online*. Ed. John van Wyhe. Web. 27 May 2011. 09 Jun 11. p. 25.

²⁶ Darwin, Charles. *The Life and Letters of Charles Darwin: Including an Autobiographical Chapter*. Ed. Francis Darwin. London: John Murray, 1888. Vol. 1. p. 344.

²⁷ 459.

²⁸ Gould 468.

thought of big men and little men, it is very easy to do all the rest.”²⁹ The concept of smallness and largeness is, then, itself an innovation of fantasy. As Susan Stewart posits in her *On Longing*, “The miniature has the capacity to make its context remarkable; its fantastic qualities are related to what lies outside it in such a way as to transform the total context.”³⁰ Even a mundane object in miniature becomes fantastic because of its unnaturalness. Stewart reminds her reader that “[t]here are no miniatures in nature; the miniature is a cultural product, the product of an eye performing certain operations, manipulating, and attending in certain ways to, the physical world.”³¹ Miniaturization is inherently self-centred: from the privileged view of what can only be seen as the ‘normal’ gaze, it creates a fantasy out of anything else. Stewart notes that size extremes do not represent opposite-but-equivalent fantasies: while miniaturization evokes “closure, interiority, the domestic, and the overly cultural, the gigantic represents infinity, exteriority, the public, and the overly natural.”³² Though no miniatures exist in nature, gigantism represents nature itself, overgrown and chaotic. The miniature belongs in a dollhouse or china-cabinet, but the only place for the giant is outside: as far away from civilisation as possible.

In *Gulliver’s Travels*, the Lilliputians belong to fantasy because of their size difference, though they “are in all other ways much like contemporary Europeans . . . Some of their concerns seem trivial but . . . European countries have equally trivial concerns, if one contemplates them from the vantage point of a Gulliver.”³³ This recognition corroborates Stewart’s theories on size: *Gulliver*, long considered a children’s book and a fantasy classic, turns to a discussion of what one critic deems the “problem of Gulliver’s size, that is, his greatness.”³⁴ The Lilliputians treat Gulliver as a beast, and Gulliver’s own thoughts mark him as the uncivilised giant: “I was often tempted . . . to seize Forty or Fifty of the first that came in my reach, and dash them against the Ground.” (20). Gulliver is able, from his literal and

²⁹ Boswell, James. *The Life of Samuel Johnson*. Hutchinson & Co: London, 1791. p. 203.

³⁰ Stewart, Susan. *On Longing*. Durham, NC: Duke University Press, 1993. Print. p. 46.

³¹ 55.

³² 70.

³³ Fitzgerald, Robert P. “The Structure of ‘Gulliver’s Travels’”. *Studies in Philology* 71.2 (1974): 247-263. JSTOR 7 June 2011. Web. p. 251.

³⁴ 251.

figurative view from above Lilliputian society, to ridicule their concerns as petty. His view, inherently self-centred in that it assumes its own authority based on nothing more than size, dismisses the Lilliputian government's trivial concerns. Gulliver falls into a fallacy regarding size similar to that of many Darwin contemporaries: he assumes that because he was once small and has grown large, that largeness therefore represents progress in some inherent way.

Stewart's theories on size experience significantly never consider actual size change: they analyse everything from the anthropocentric viewpoint. In Gulliver's case, Stewart's model fits: Gulliver does not change size. Alice has the opposite experience, and she changes size while surrounded by static beings. As Morgentaler notes, however, "size is relative . . . we are really dependent on others for our sense of our own height"³⁵. In that sense, Gulliver and Alice undergo the same trials. Though Alice changes in *Wonderland*—usually with the use of certain objects—because the reader so closely follows her journey both physical and emotional through Wonderland, the end result is that the environment itself seems to change around her. Functionally, the Pool of Tears may as well grow to swallow Alice; the Rabbit's house could just as easily shrink and so trap her. From a personal and psychological perspective, Alice's environment constantly changes, just like Gulliver's.

Within the family, size bears a close connection to age and power. In twelfth-century artwork, "children are depicted . . . indicated only by their size."³⁶ Otherwise, children look identical to adults: they wear the same clothing; their proportions are identical. Childhood had, therefore, no distinct qualities. This convention persisted until the seventeenth century, when "the child . . . ceased to be dressed like the grown-up."³⁷ Increasingly, the child had "a place of honour" in the family portrait as well as in the family³⁸. Such changes in conception of childhood as a stage of life had an impact on views of size. Size represents age; an increase in size signifies an increase in the maturity and responsibility that characterise

³⁵ Morgentaler 84.

³⁶ Ariés, Philippe. *Centuries of Childhood*. London: Pimlico, 1996. p. 31.

³⁷ 48.

³⁸ 45.

adulthood. Still, until the nineteenth century people “had little regard for the distinctions among children, adolescents, and young adults.”³⁹ Once this distinction entered cultural significance, children and adults found themselves increasingly aware of childhood development. By the time of Carroll’s writing, children had recently attained their own cultural niche. This emerging and unsettled view of childhood lends itself to a story in which a child must grow and shrink at the whims of herself and her companions, trying—as Victorian children as a group—to find her place within a confusing world. This attempt to fit within a cultural niche mirrors the biological system of niches specified by Darwin; when a new niche opens up, organisms must adapt quickly to fill it.

III. Prior Critical Responses

Critics have noted the apparent Darwinism in Carroll’s works, connecting the prevailing scientific milieu to key moments in *Alice*. William Empson’s 1995 “*Alice in Wonderland: The Child as Swain*” makes the first—and the only fully-formed—argument for any parallel between Darwin’s theories and Carroll’s writings. Empson argues that “it is made clear (for instance about watering-places) that the salt water is the sea from which life arose; as a bodily product it is also the amniotic fluid”.⁴⁰ Others, like David Lockwood, have highlighted the implausibility of this claim.⁴¹ Lockwood nevertheless feels that the Dodo and the *Looking-Glass* drawing of the “Jabberwock – which has the leathery wings of a pterodactyl and the elongated neck and tail of a sauropod – remind us of the inexorable march of evolution.”⁴² While ‘inexorable march’ may introduce dubious meanings into evolution by implying a certain linear, even fated, progress, Lockwood nevertheless captures the primeval feel of *Wonderland*. Rose Lovell-Smith notes that Alice herself evinces a Darwinist view, claiming that Alice—“apparently

³⁹ Knoepfelmacher, U. C. “The Balancing of Child and Adult: An Approach to Victorian Fantasies for Children.” *Nineteenth-Century Fiction* 37.4 (1983): 497-530. *JSTOR*. Web. 15 April 2011. Print. p. 498.

⁴⁰ 204.

⁴¹ Lovell-Smith, Rose. “The Animals of Wonderland: Tenniel as Carroll’s Reader”. *Criticism* 45.4 (2003): 383-415. Print. p. 45.

⁴² 45.

unconsciously, as if she really cannot help it—repeatedly reminds us that in life one must either eat or be eaten.”⁴³ Lovell-Smith, however, overemphasises what she deems “[t]he cruelty of the Darwinian world”⁴⁴ : such a phrase presents fallacy of assuming that natural selection has some agenda. Darwin’s world is not cruel: it is inherently neutral, and any given organism’s survival or demise depends not upon some deliberate property of the world, but should be seen as a natural and impartial consequence of existence. Such a misunderstanding of Darwin, when applied to Wonderland, results in a misconstruction of Alice’s world: if Darwin’s world of chaos and struggle is cruel, then Wonderland must also be cruel. However, Darwin never characterised the world of natural selection as such: while an individual organism or even a generation may find life frightening and unpredictable, the environment itself proves nothing more than a backdrop from which to assess species’ fitness.

Critics have also discussed Alice’s size changes, though rarely in any depth. Lovell-Smith uses her Darwin-based arguments for a tired Carroll cliché: paedophilia. She asserts that Alice’s size changes represent Carroll himself being never the right size for the girls he loves, and therefore doomed, like Alice, to continually reassess his own worth as it relates to size.⁴⁵ The issue of Carroll’s paedophilia is divisive: some make the standard claim that Carroll loved little girls—these scholars either condemning, excusing, or justifying his alleged child-love—while a new school of thought alleges these claims to be overblown and false.⁴⁶ Regardless, Lovell-Smith’s conclusion that Carroll’s size references come to no more significance than some further proof of his apparent paedophilia ultimately invalidates her former and already problematic assertions regarding Darwinism. Some critics have misread the work itself: Denis Crutch claims that all of *Wonderland*’s animals are of their natural size,⁴⁷ which cannot possibly be true. As Selwyn Goodacre notes in his simple but factual account of Alice’s size changes, the book contains

⁴³ 386.

⁴⁴ 408.

⁴⁵ 410.

⁴⁶ For the most pre-eminent of these ‘Carroll Myth’ scholars, see Leach, Karoline. *In the Shadow of the Dreamchild*. London: Peter Owen, 1999.

⁴⁷ Crutch, Denis. "Familiar Chat with Bird and Beast," *Jabberwocky: The Journal of the Lewis Carroll Society* 6, no. 1 (1977): 18-19. p. 18

discrepancies both within itself and as related to species' real-world sizes: Alice is only three inches high in the Caucus race, so she should only come up to the Dodo's leg; the Hatter should be far taller than anyone else at the trial; the Dormouse must be at least eighteen inches tall.⁴⁸ Scholarship related to Carroll's issues of size frequently comes to problematic conclusions, like the claim that "the talking animals here . . . are always friendly though childishly frank to Alice while she is small, and when she is big (suggesting grown-up) always opposed to her, or by her, or both."⁴⁹ In his quest to find an overarching principle, Empson ignores much of the second half of the book, in which Alice changes sizes at will without any negative effects.

Many critics ignore these last few size changes. Existing size criticism fails to see Alice's changes as different from one another, as representative of personal evolution. Critical viewpoints tend to see the twelve size changes that occur throughout *Wonderland* as monolithic: they represent a single type of event, and so should be regarded as having one meaning. Empson claims that the animals who meet Alice during her travels, particularly in the Caucus-race, "do not fail to recognize that she is superior" to them; this superiority arises "because she is Man"⁵⁰. These animals have a strange way of expressing inferiority: they demand gifts from Alice; they treat her alternately as harmless moron and dangerous-but-stupid being to be feared. They show no recognition of Alice's supposed species superiority. Lovell-Smith's differing view of Carroll and Tenniel's world is that it "concurs with the evolutionist view of creation by showing animals and humans as a continuum within which the stronger or larger prey upon the smaller or weaker."⁵¹ Such an observation holds true for Alice's early changes, but Lovell-Smith ignores times when Alice ceases to connect physical impressiveness with fear, as when she grows before entering the March Hare's house but still feels the same timidity (70). Ultimately, much of the criticism surrounding Alice's size applies in only a selection of instances. While Alice initially evinces a bigger-is-better argument, her

⁴⁸ Goodacre, Selwyn H. "On Alice's Changes of Size in Wonderland." *Jabberwocky* 6.1 (1977): 20-24. Print.

⁴⁹ 212.

⁵⁰ 205.

⁵¹ 405.

real character growth comes with the recognition that she—like Empson and Lovell-Smith, like many *Alice* readers and critics—has only seen part of the truth.

IV. Darwin in Carroll

Lewis Carroll published scores of mathematics puzzles, short essays, and similar ephemera. He invented word doublets—small puzzles in which the reader must form one word from another by changing one letter at a time. One critic points out how doublets model evolution “by making small random changes in the genes that are intervals along the helical DNA molecule. Carroll himself . . . evolved MAN from APE in six steps.”⁵² Each step is like a step in the evolutionary process: with each successive ‘generation’ of word, most of the word remains, with only one letter being changed. Over time, all three letters—or more, depending upon the particular puzzle—will be different from their initial places. Each step, therefore, represents a similar word in structure, but each step is its own legitimate word. The use of APE and MAN as reference to Darwin’s theory again neither affirms nor denies it; it merely acknowledges the theory’s power. Darwinist thought had profound impact on even those outside the world of academia: Henry Holiday, the illustrator of *The Hunting of the Snark*, initially sketched his version of Carroll’s Boojum; the poet then rejected the drawing, claiming that he wanted the creature to remain fantastical. Holiday’s response demonstrates knowledge of evolution: “I hope that some future Darwin, in a new *Beagle*, will find the beast, or its remains: if he does, I know he will confirm my drawing.”⁵³ Holiday’s tongue-in-cheek assurance of his own success as an illustrator becomes funny when viewed in light of a fabricated creature, but his remark about Darwin speaks to the vague idea that Darwin somehow invented species: if a new Darwin in a new ship could validate the impossible, then the implication holds that the first must have, in outlining the process by which a Boojum or any other

⁵² Gardner, Martin. “Word Ladders: Lewis Carroll’s Doublets.” *The Mathematical Gazette* 80.487 (1996): 195-98. JSTOR. Web. 22 May 2011. p. 196.

⁵³ *Diaries* 335 n.

creature may come into being, done something similarly remarkable.

Carroll's fiction contains one explicit reference to Darwin. In *Sylvie and Bruno*, Lady Muriel and the narrator sit together on a train. The lady postulates regarding the supposed 'evolution' of literature: "'If Steam has done nothing else, it has at least added a whole new Species to English Literature . . . the booklets—the little thrilling romances, where the Murder comes at page fifteen, and the Wedding at page forty'" (57). Her companion responds with a continuation of her metaphor: "'And when we travel by Electricity . . . we shall have leaflets instead of booklets, and the Murder and the Wedding will come on the same page.'" (58) The travellers' speculation on the future of literature—and the future of transportation—takes an evolutionist turn. The narrator and his companion assume a symbiotic, parallel-evolution quality to the two variables: as one changes, the other changes to match, since travellers on ever-faster vehicles must require ever-shorter reading material. The narrator's companion approves of the idea: "'A development worthy of Darwin!', the lady exclaimed enthusiastically. 'Only *you* reverse his theory. Instead of developing a mouse into an elephant, you would develop an elephant into a mouse!'" (58). The lady here exhibits the common Victorian fallacy of assuming that evolution leads, path-like, to some ideal. The eventual transformation from an elephant to a mouse is no less Darwinian than the converse; many species evolved from larger and fiercer counterparts. This misappropriation of Darwin's theory is one that plagued Darwin's contemporaries and more modern scholars alike; further, it is a fallacy into which Alice herself initially falls.

While Carroll does include references to Darwinism in some of his writings, his *Alice* books contain the most subtle and extended parallels to Darwinist theory. Elements of the text point to Darwin's theories: Lovell-Smith notes that the crocodile poem "establishes his book's reference to a newer, more scientific view of nature",⁵⁴ a view of nature characterised by strife. As per Darwin's *Origin*, "there must in every case be a struggle for existence,"⁵⁵ and a poem about a crocodile—amoral, fight-focused,

⁵⁴ 386.

⁵⁵ 63.

predatory—emphasises the Darwinist struggle more than a bee, perceived as hardworking, social, driven by cooperation. Carroll also includes a Dodo in a text which mostly includes only real animals. This reminder of the most famous animal to have ever gone extinct points the reader's mind to a world of competition and struggle, a world where some species fail. At one stage, a high-speed evolution takes place: the Duchess' baby, whom she has given to Alice to hold, turns into a pig in Alice's arms (66). The Cheshire-Cat notes that he thought this transformation might take place, but later asks Alice, "Did you say 'pig', or 'fig'?" (69), indicating either as a possibility. Through these chaotic, naturalistic references, Carroll draws the reader's mind into a world where organisms can mutate without warning, species at any point in the physical spectrum of complexity can be at a different point in their reasoning and speaking skills, and a sense of wild chaos permeates every event. It is in this Wonderland, more wilderness than dream-world, that Alice must come to terms with her own size-identity.

Alice enters Wonderland holding the 'bigger is better' preconception that often plagues young children. After her first change, tiny Alice remarks, "Why, there's hardly enough left of me to make *one* respectable person." (18). Somehow, respectability derives directly from size: Alice, at less than a foot high, has nearly reached the lower boundary of respectable personhood. A few moments later, after holding the Rabbit's fan shrinks her considerably, she moans, "things are worse than ever . . . for I never was so small as this before, never!" (24). In both of these hallway episodes, Alice evinces a dichotomous attitude regarding size and growth. If Alice at ten inches high was hardly enough to be respectable, then Alice at three inches high has probably achieved this prospect. Not just her views on herself have changed: Alice laments "*things* [being] worse than ever". Alice could list any number of problems—being lost, alone, far from home—but she cites only her size. Dichotomous thinking causes her to reject herself when small and her entire world when even smaller. Morgentaler notes that "considerations of size are seldom value-free . . . we attribute aesthetic, erotic, and moral qualities to size.

This value-system is encoded into our language, where, as a general rule, bigger is better.”⁵⁶ Like any dichotomy, a consideration of size can lead to the arbitrary ruling that one end of the spectrum bests the other. This value system is embedded in our language, in the “numerous expressions that define smallness negatively. To be big-hearted is good, small-minded is bad. To be petty—from the French word for small—is to be niggardly.”⁵⁷ The list could continue: largeness and height are consistently valued over their small counterparts.

Of course, Alice does not stay small forever. When she grows initially, she maintains her “bigger-is-better” attitude. Upon growing to monstrous proportions in the White Rabbit’s home, Alice fears the Rabbit’s reaction; she trembles so hard that the house shakes. She ceases to worry, however, when she remembers that she is “about a thousand times” its size, and therefore has “no reason to be afraid of it” (41): size has some relationship to fear and power. The text exaggerates: given both Carroll’s narrative and Tenniel’s drawings—corroborated by Carroll’s own sketches in *Alice’s Adventures under Ground*—Alice is not nearly a thousand times the Rabbit’s size (one hundred would be a liberal estimate). Her sudden growth in power has given her delusions of immensity; the larger she feels, the less she fears smaller beings. Alice takes this sense of inflated self too far: she grows violent, snatching at the Rabbit, breaking glass, and kicking Bill the Lizard out of the house through the chimney (43). One critic describes her new state as a depiction of “female domestic power as potentially monstrous, the obverse side of the angel in the house.”⁵⁸ Alice not only appears monstrous—the Tenniel illustration gives her an angry scowl—but she also behaves monstrously. Her aggressive reactions befit her lack of fear: if a smaller being should fear a larger, Alice’s fear of the Rabbit converts into the feeling that it should fear her. One critic reads that Alice “finds herself, through a series of size changes, continually being repositioned in the food chain”⁵⁹; if so, this instance in the Rabbit’s home represents a high point: the Rabbit, Bill the

⁵⁶ 89.

⁵⁷ 89.

⁵⁸ 90.

⁵⁹ Lovell-Smith 387.

Lizard, and their similarly-sized cohorts are far enough beneath her that she need not consider them. At this point, Alice is aware of her own personal evolution: she has the sense that her identity has developed from the bored girl on the bank. However, in this early stage of the tale, Alice makes the mistake of *Sylvie and Bruno*'s narrator and his travelling companion: she assumes that she already knows the form progress will take. Alice treats her own evolution as predictable, even linear: like the assertion in *Sylvie and Bruno* that an elephant turning into a mouse would be somehow anti-Darwinian, Alice seems convinced that largeness—even when largeness is inconvenient and gets her in trouble—equates with personal progress.

Such 'progress' comes with growing pains. In her first two size changes—the first in the hallway and the second in the Rabbit's house—Alice dissociates her own identity. If tiny Alice has hardly enough to make one respectable person, then she could potentially comprise two or more people when large. After her first size change, she begins speaking to parts of her body: ““Oh, my poor little feet, I wonder who will put on your shoes and stockings for you now, dears?”” (20). In this address, Alice not only gives them a different identity, but she assumes an emotional attitude: she calls them “dears” and describes them as poor and little. Her sympathy with parts of her own body indicates her physical dissociation. The same thing happens in the Rabbit's house, when a Alice argues with herself about her situation, “taking first one side and then the other, and making quite a conversation of it altogether” (41). This more severe dissociation sees Alice, instead of handling another part of herself as a parent would treat a child, emotionally separating herself from her psychological other part. She makes and refutes rational arguments against herself. Whether or not Alice is physically larger here than in the hallway, she seems so: the hallway, a larger room, almost accommodates the overgrown Alice, while the Rabbit's home proves far too small to contain her. Regardless of absolute size, Alice's relative size is larger in this second instance; her dissociation from her own body grows more acute.

More significant experiences with size change—those accompanied by changes in shape—cause Alice to rethink her views. Arguably three out of Alice's twelve size changes accompany a change in

shape.⁶⁰ Before the first, Alice declares of the ‘EAT ME’ cake: “‘if it makes me grow larger, I can reach the key; and if it makes me grow smaller, I can creep under the door . . . I don’t care which happens!’”

(18). As soon as she changes—growing larger—she incongruously regrets the mutation. Tenniel’s and Carroll’s illustrations depict an Alice stretched in the legs and neck; perhaps Alice laments the change in shape rather than size. Immediately thereafter, Alice questions her own identity for the first time: she thinks through other young girls of her acquaintance, attempting to determine if she could be any of them (23). Susan Stewart posits that “[t]he toy world presents a projection of the world of everyday life; this real world is miniaturized or giganticized in such a way as to test the relationship between materiality and meaning”⁶¹; Alice’s elasticity so tests her tenuous relationship with the material world. An Alice in danger of drowning in her own tears and an Alice whose overgrown limbs protrude grotesquely from the Rabbit’s windows are projections of some ‘real’ Alice whose identity must be located and defined. In her later episode with the Caterpillar, Alice likens her experiences to metamorphosis, saying to it: “‘when you have to turn into a chrysalis . . . and then after that into a butterfly, I should think you’ll feel it a little queer’” (49). Quite soon, she experiences two terrifying alterations right in a row, caused by the Caterpillar’s mushroom: in the first, her chin strikes her foot in a “violent blow” by which she is “a good deal frightened” (55). Shortly thereafter, her “tone of delight” at being free changes “into alarm in another moment, when she found that her shoulders were nowhere to be found” (56). She now suffers her greatest identity crisis yet: “‘I—I’m a little girl,’ said Alice, rather doubtfully”, to the Pigeon (57), who does not believe her. Alice secretly doubts her own little-girlhood—perhaps even her own personhood. Such uncertainty points to an emerging Darwinist perspective: at what point in early apes’ evolutionary history do we begin to call some of them humans? Alice demonstrates the role of some “missing link”—she is not a serpent, like the Pigeon accuses her of being, but nor is she truly a *little* girl anymore. Just as Gulliver’s

⁶⁰ Selwyn Goodacre denies that Alice’s first growth consists of a shape change; he cites the illustrations as ‘in-progress’ drawings rather than drawings of her final shape. In Carroll’s illustration, however, Alice does not have a look of surprise on her face, and the image does not appear transitional.

⁶¹ 57.

size difference in Brobdingnag leads to “a failure of communication, a mutual incomprehension”⁶², Alice’s various sizes render her incapable of understanding those around her. At first, she fails to connect in small ways: she does not understand the Caucus-race; she cannot listen to the Mouse’s tale. As her size changes number ever more, Alice cannot communicate her own identity. By the end of *Wonderland*, Alice admits: ““it’s no use going back to yesterday, because I was a different person then.”” (109)

Soon, Alice begins to note the potential utility in being a size other than her own. Throughout the text of *Alice in Wonderland*, Carroll describes Alice fifteen times as “poor”; in eleven of these instances, “poor Alice” is such because she is the wrong size. Of the first three—which all occur in the first ten pages of *Wonderland* as standalone exclamations—she is once her natural size but too big for the door, once the right size for the door but too small to get the key, and once so far above her normal height that “to get through was more hopeless than ever.” (21) These three exclamations immediately precede each of the first three size changes: in each case, Alice gets what she thinks she wants and discovers that something is wrong with her new state. As her adventure progresses, however, she changes size not out of some pessimistic poverty of spirit, but rather out of convenience. Alice approaches her last three self-inflicted size changes with a new attitude: she nibbles her saved pieces of mushroom to be a more well-suited height, first to get to the Duchess’ home, then to the March Hare’s, then to get into garden (58, 70,81). In all three instances, Alice suffers no ill effects of her size change. She does not have to grow or shrink in most of these situations; she does it for the benefit of herself and others, observing of the inhabitants of the Duchess’ house, ““why, I should frighten them out of their wits!”” if she does not alter her appearance (58). If the Darwinian model of natural selection represents not distinct progress but rather increased environmental fitness, then Alice must learn that bigger is not better. If she were to enter the Duchess’ house at her normal size, she would suffer disutility: the Duchess would react negatively to her presence. Alice’s evolution is to a form that she would have considered a regression, yet this apparent

⁶² Barry, Kevin. “Exclusion and Inclusion in Swift’s ‘Gulliver’s Travels’”. *The Irish Review* 30 (2003): 36-47. JSTOR. Web. 7 June 2011. p. 41.

disability is actually what gives her increased fitness for her surroundings.

By the story's end, Alice has developed in her attitude toward growing into that of a Darwinist thinker. In her final size change—an unsolicited growth spurt during the trial scene—Alice engages in the following dialogue with her seat-mate when he commands her to stop sitting so closely:

'I ca'n't help it,' said Alice very meekly: 'I'm growing.'

'You've no right to grow *here*,' said the Dormouse.

'Don't talk nonsense,' said Alice more boldly: 'you know you're growing too.' (118).

The Dormouse responds predictably: of course he is growing, but he is doing so at a reasonable rate. We see his natural, gradual growth as fundamentally different from Alice's supernatural and rapid physical change, and indeed Alice from the beginning of the story would not have been likely to equate the two. In these final pages of *Wonderland*, Alice describes the Dormouse's attempt to chastise her growth as "nonsense": a word inextricably associated with Carrollian literature, particularly with *Alice*. Within the first seven out of twelve chapters, Alice uses the word once, and it is to describe herself. Increasingly, Alice describes the foolishness of others as nonsense. In this last size change, she displays the inner workings of a Darwinian: her rapid expansion is no different, no more foolish, than the slow growth of the Dormouse. Like her body, her mind has adapted to her surroundings. Alice sees her own position within the natural world: "her size changes have made her increasingly aware of who she, herself, is from the point of view of a Caterpillar, a Mouse, a Pigeon, and, especially, a Cheshire Cat."⁶³ Until she masters her changes in size, Alice cannot see her own niche until she sees it from another. Charles Darwin notes in his *Origin of Species* that "when a plant or animal is placed in a new country amongst new competitors, though the climate may be exactly the same as in its former home, yet the conditions of its life will generally be changed in an essential manner"⁶⁴. Much of the climate is the same in Wonderland as in Alice's home: creatures may talk, but they tend to be real creatures. Wonderland characters' frequent insistence upon logic, even when strange, mirrors argumentation that could almost take place in the

⁶³ Auerbach, Nina. "Alice in Wonderland: A Curious Child." *Victorian Studies* 17.1 (1973): 31-47. Print. p. 38.

⁶⁴ 128.

above-ground world of Oxford meadows. The settings themselves do not strike Alice as alien: homes, gardens, hallways. Yet still her environment proves completely different. Goldie Morgantaler argues that “Alice’s shape-changing has no real consequences for her health—nor, more importantly, for her maturity”⁶⁵, but her conclusion rings false when one considers all of the size changes: as, indeed, Morgantaler does not. Alice’s changing has real consequences for both. Her shifts in mass affect her health first negatively and then positively, since her mental stability suffers and then re-stabilises. Her maturity also sees positive growth: by the story’s end, Alice no longer needs to fixate on her own body. Alice is the same girl that she was in the beginning of the tale, except as in Darwin’s example of displacing an organism or species, the conditions of Alice’s life are “changed in an essential manner”: Wonderland requires new skills to survive, especially a mastery of her own size and shape.

If Alice had not adapted to mastery over her size, she may never have survived Wonderland. References to death abound, as in the narrator’s dark parenthetical statement that Alice would “very likely” not say anything—ever again—if she fell off the roof (13), or the idea that Alice could ““ [go] out altogether, like a candle.”” (17) Survival itself could be unfulfilling: if Alice had not mastered the use of the Caterpillar’s mushroom to change her size at will, her interactions—not entirely positive, but at least relatively successful—could be hindered. Carroll’s references to death remind us of an alternate future for Alice, one in which she does not survive. One evolutionary historian, in describing the Victorian attraction to Darwin’s theories, postulates that “[s]truggle was important not just because it weeded out the unfit but because it encouraged all organisms (including human beings) to become fitter in order to escape the suffering that was the consequence of failure.”⁶⁶ The consequences of Alice’s failure are not made specific: Carroll did not wish to frighten his readers. However, for Alice to mature and become fitter to her surroundings, she needs to know that those consequences are severe. Because she prevails,

⁶⁵ 93.

⁶⁶ Bowler, Peter J. *Charles Darwin: The Man and His Influence*. Cambridge University Press: Cambridge, 1996. Print. p. 170.

she fulfils the aim that Darwin elaborates in the conclusion to his *Origin of Species*: “from the war of nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows.”⁶⁷ Alice gains the only thing a species, in Darwin’s view, can gain: she survives, even thrives. Carroll’s final paragraph depicts Alice as “a grown woman . . . keep[ing], through all her riper years, the simple and loving heart of her childhood . . . gather[ing] about her other little children” (132). This Alice has succeeded in reaching maturity, in procreating. She ostensibly does not change size once out of the Wonderland-dream, but she takes with her the ability to adapt, without sacrifice of identity, to better fit into her own environment: a skill that every child must somehow learn to master.

The illustrations of both Carroll and Tenniel make clear which of the changes they emphasize. Carroll viewed images as part of the text itself: in one letter, he complains that “Mr. Tenniel has introduced a false ‘reading’ in his picture of the quarrel of Tweedledum and Tweedledee” by depicting the wrong sort of rattle⁶⁸; on more than one occasion, particularly in his *Nursery ‘Alice’* but also in *Wonderland*, the text specifically references the picture on the same page. Illustrations are significant, and both Carroll and Tenniel spend most of their ink on the early and most frightening size changes. Tenniel does not attempt to depict the middle two shape changes caused by the mushroom. Carroll makes three sketches of these two instances, which appear on three consecutive pages: he emphasizes these moments as much visually as verbally. Perhaps to make the tale more palatable for young readers, especially those who may be looking only at the pictures, Tenniel “tends to alleviate the anguish of the story where Carroll’s drawings would clearly seem to exacerbate it”⁶⁹: Carroll even seems to relish the terrifying parts of the story. Even though Alice sometimes looks and acts like a monster, “Tenniel is loath to show Alice

⁶⁷ 490.

⁶⁸ *The Annotated Alice* p. 200n.

⁶⁹ Nières, Isabelle. “Tenniel: The Logic behind His Interpretation of the Alice Books,” in *Semiotics and Linguistics in Alice’s Worlds*, ed. Rachel Fordyce and Carla Marcello (Berlin: Walter de Gruyter, 1994), 194-98. p. 197.

monstrous”⁷⁰. In stark contrast to the first and most important size changes, the final five—most of them meriting the slightest mention in the text—do not earn Carroll illustrations. In the two versions of *Alice*, just Tenniel draws one of these changes: the final, gradual change that takes place in the courtroom. The well-depicted size changes are more formative: an Alice who can grow or shrink at will and at her own convenience is more functional but less interesting than an Alice who questions her identity the first time she grows. Ultimately, Alice must learn to do consciously and in a single afternoon what species do passively and over several consecutive generations. She must adapt quickly to a strange new environment, reevaluating her childish size-dreams as she does.

Carroll’s full-page drawing of the animals emerging from the Pool of Tears includes mostly birds, along with a few woodland creatures (a mouse is the only non-bird mentioned by name). Two creatures grab a viewer’s eye for different reasons: a Dodo stands out of the sketch in a visual sense, appearing to lead the pack of creatures, while an ape in the middle seems both overly dark and out of place. Each of these creatures serves as a nod to Darwinism in some form: the Dodo having gone extinct, and the ape as the usual symbol of Darwinism. The ape has no textual equivalent and no apparent associated symbolism, though representative characterisation was on Carroll’s mind while writing the Pool of Tears and Caucus-race episodes. Of the five named creatures, one is the mouse—who must tell his long and winding tale—and the other four have direct parallels to actual people: “The Dodo is Dodgson himself, its name comprising the first two letters of his name doubled; the Duck is Robinson Duckworth; and the lory and eaglet are Lorina and Edith Liddell respectively.”⁷¹ Upon publication of the manuscript facsimile edition of *Alice’s Adventures under Ground*, Carroll sent the Reverend Duckworth a copy inscribed to “The Duck from the Dodo”.⁷² These four of the five who floated down the Thames together, hearing the first incarnation of the *Alice* story, are joined by Alice herself for a full party. Thus, Carroll intended aspects of

⁷⁰ 197.

⁷¹ Lockwood 44.

⁷² Gardner, Martin. *The Annotated Alice*. p. 29n.

his text—and, by extension, his illustrations—to represent extra-textual elements. The ape in his drawing stands out more starkly: in an authorial paradigm in which every significant creature has a specific real-world parallel, an unexpected ape becomes, as Alice might say, ever *curiouser*. Some critics hold that the ape represents Darwin himself or some facet of his work⁷³, though Cohen asserts that the author intends nothing too meaningful: “Charles is only having fun, making a topical joke in his drawing, knowing that the Liddell girls would appreciate the humor.”⁷⁴ Either way, the presence of a sole large mammal among the birds serves as a common allusion to a debate prevalent particularly among the academic elite.

More generally, critics write that Carroll “forces” our minds back into the history of species using a primordial pool, a lone human, an extinct bird, and a confused reading of history from William the Conqueror.⁷⁵ Inevitably, some critics’ search for Darwinian references leads to far-fetched conclusions, as when Rose Lovell-Smith points out in the Tenniel illustrations “a fancy pigeon, perhaps a fantail or a pouter, which should . . . be taken as a direct reference to Darwin’s argument from the selective breeding of fancy pigeon varieties in chapter 1 of *The Origin of Species*.”⁷⁶ No evidence from the Carroll or Tenniel writings indicates any such intentionality, rendering a “direct reference” improbable. Perhaps the presence of fancy pigeon varieties in both works presents a less calculated reference: Carroll and Darwin, contemporaries in their respective fields, would know one another’s lives and works, and such familiarity may have filtered into details.

The Alice of *Through the Looking-Glass*—six months older and embarking on a new adventure—carries with her the wisdom of *Wonderland*. Humpty Dumpty criticises Alice’s name: ““With a name like yours, you might be any shape, almost.”” (219). Alice has been many shapes; six months ago in her time and six years ago in Carroll’s, Alice’s shape proved at the whim of external factors. Alice no

⁷³ Empson 204, Lockwood 45.

⁷⁴ 352.

⁷⁵ Empson 204.

⁷⁶ 405.

longer attempts to make the point, as with the Pigeon, that she is a little girl: she allows Humpty Dumpty's criticism to go unanswered in her more mature attempt to steer the conversation another direction. In the only explicit reference to physical growth in all of *Through the Looking-Glass*, Humpty Dumpty alleges seven and a half to be six months too old to be a comfortable age:

“I never ask advice about growing,” Alice said indignantly.
“Too proud?” the other enquired.
Alice felt even more indignant at this suggestion. “I mean,” she said, “that one ca’n’t help growing older.” (222)

The six-months-younger Alice does ask advice about growing: of the Rabbit, of the Caterpillar, and mostly of herself. Her final *Wonderland* size change in the jury-box may carry with it this vow never to ask growing advice. Perhaps significantly, Alice asserts that one cannot help growing *older*; she says nothing of growing larger: she may master size, but she never bests age. Carroll includes in this second volume—darker, less playful—a few references to Alice being too old. Humpty Dumpty responds that one may not be able to help growing older, ““but *two* can. With proper assistance, you might have left off at seven.”” (222) In what Martin Gardner describes as “the subtlest, grimmest, easiest-to-miss quip in the *Alice* books”⁷⁷, Humpty Dumpty suggests that an Alice unnaturally halted at the age of seven would be preferable to a too-old Alice. In the garden, the Tiger-lily accuses Alice of being ““tumbled about””, to which the Rose adds, ““You’re beginning to fade, you know—and then one ca’n’t help one’s petals getting a little untidy.”” (169) If Alice begins to fade at a the young age of seven and a half, the reader must wonder: when did she bloom?⁷⁸ Alice may be already past her prime, but she does not dwell on a situation that she cannot reverse. The language mirrors Alice’s later declaration to Humpty Dumpty: growing untidy, growing older, are two things that “one ca’n’t help”. Alice seems to have carried her final

⁷⁷ *The Annotated Alice* p. 222n.

⁷⁸ The question of Lewis Carroll’s alleged paedophilia—particularly his potential love for Alice Liddell—has been discussed among critics for years. For the best concise summary of critical voices on the subject, see Gardner, Martin. “Introduction to *More Annotated Alice*”. London: Penguin, 2001. xxviii-xxx. Ultimately, the question of Carroll’s child-love needs not enter into any argument of his discussion of size except that he may have had personal reasons for regretting Alice’s aging.

Wonderland revelations with her through the Looking-Glass: she also reports that she “ca’n’t help” growing when next to the Dormouse in the courtroom. Alice at seven and a half may have much growing to do before attaining adulthood, but she maintains her confidence in her own identity, no matter her size.

Ideas of size change depending upon the audience; Carroll’s 1889 *The Nursery “Alice”* retells that story for younger readers. In it, Carroll had the “ambition *now* . . . to be read by Children aged from Nought to Five” (Preface, xi) instead of just older children. This new *Alice*—one as likely to be read aloud as silently—comes with a different set of ideas about size. The work has tended to be ignored by readers and scholars alike: *The Nursery “Alice”* is not included in most collected works of Lewis Carroll, even those that claim to be complete.⁷⁹ Further, Morton N. Cohen and Anita Gandolfo, in a list of Carroll’s works, name five as “his masterpieces,” three books of poetry, and a further ten miscellaneous works; *Nursery “Alice”* merits mention in none of these.⁸⁰ Perhaps because Carroll had to invent neither characters nor plot, this adapted work signifies less than the original. Regardless, the work’s professed difference to its predecessor is in the intended readership, and therefore any changes in characterisation can be attributed to this change in audience, which requires different messages of size.

Like Tenniel’s removal of the frightening size changes from his illustrations, Carroll leaves them out of *Nursery “Alice”*. The first four changes occur as in *Wonderland*, though Carroll emphasises their non-threatening elements. Alice’s first size-changing experience reads, “She got smaller, and smaller, till at last she was just the size of a little doll!” (7). This Alice suffers no ill effects, undergoes no identity crisis: in all her changes she expresses surprise and wonder but does not allow them to define her. Even when she suffers, as when she cries the Pool of Tears, she does not dissociate her identity as in the original. She remarks once, to the caterpillar, “how *very* confusing it was, being first one size and then another.” (28) The middle size changes—the ones in which Alice changes shape as well as

⁷⁹ Carroll, Lewis. *The Complete Works of Lewis Carroll*. London: Nonesuch Press, 1939. Print.

⁸⁰ Cohen, Morton N. and Anita Gandolfo, eds. *Lewis Carroll and the House of Macmillan*. Cambridge University Press: Cambridge, 1987. Print. p. 9.

size—disappear from the text entirely; perhaps Carroll found them too frightening for young children. He minimises some of the later changes, describing them after the fact: “[t]his is a little bit of the beautiful garden I told you about. You see Alice had managed at last to get quite small, so that she could go through the little door.” (41) Similar to both Carroll and Tenniel’s decision to illustrate only the early size changes, Carroll tends either to skip these later changes altogether or to describe them retroactively. Though this Alice struggles less with her identity as a result of size changes, they still present the most frightening part. As *Nursery “Alice”* goes on, the narrator gains confidence that his reader will not need to see the changes, which become less significant. This Alice designed for younger readers still gains the Darwinist understanding, but she does so with less impact, since she does not have to suffer as much in the process.

Darwinism reminds us “how easily, with only the smallest of changes further back in history, the nature of the present movement could have been radically different”⁸¹, and so does Carroll. In Wonderland, like the real world in many ways but still a foreign place, the Dodo still lives. *Wonderland* is riddled with could-have-beens: the narrative itself is rarely linear and never inevitable. When Alice goes to drink the potion in the White Rabbit’s home, the narrator remarks, “if she *hadn’t* drunk any, all this wonderful adventure that I’m about to tell you about, wouldn’t have happened at all. And wouldn’t *that* have been a pity?” (19). In the next chapter, Alice grows small again; the narrator reminds his reader to rejoice in the change, for Alice “never would have dreamed all the other curious things that we’re going to read about.” (21). These reminders of what could have been—an end to the dream, a premature ending—conjure to mind the chaotic nature of the Darwinian world: Alice travels with no set endpoint. Some small change, like the absence of a single bottle, could drastically change the tale itself.

The 1889 *Sylvie and Bruno* connects size with the natural sciences as well. Characters express their views on evolution, which correlate to prevailing Victorian attitudes regarding progress: Arthur

⁸¹ O’Gorman, Francis. “‘A long deep sob of that mysterious wonderous happiness that is one with pain’: Emotion in the Victorian Novel.” *A Concise Companion to the Victorian Novel*. Ed. Francis O’Gorman. Blackwell Publishing: Oxford, 2005. pp. 253-270. Print. p. 262.

asserts that

the human race has one kind of shape—bipeds. Another set, ranging from the lion to the mouse, are quadrupeds. Go down a step or two further, and you come to insects with six legs . . . the creature becomes more—I won't say "ugly" of any of God's creatures—more uncouth. And, when we take the microscope, and go a few steps lower still, we come upon animalculae, terribly uncouth, and with a terrible number of legs! (199)

Here, Arthur's view is of a set of discrete stages: humans represent one sort of being, quadrupeds another, insects another, with amoebae at the bottom. In a natural balanced environment, writes one biologist, "each size level will have certain advantages . . . their own right-sized niche that they can inhabit."⁸² The world of scientific scholarship contains none of the value judgments that Arthur makes: a niche for an elephant and a niche for a mouse are not disparate in importance though they prove different in scope. None of Arthur's companions questions the hierarchical system in which largeness and complexity—represented simply by shapes—necessitate greater inherent worth. Even as Arthur claims that he will call none of nature's population "ugly", he, from his position of human privilege, introduces the associated negative connotations into the conversation.

The friends postulate a new ideal system: other races of men could exist, smaller than current humans, with equivalently smaller crops and farm animals. This race, one-half yard high, "would have *one* source of exquisite enjoyment, not possessed by ordinary men . . . the grandeur of scenery! Surely the grandeur of a mountain, to *me*, depends on its *size*, relative to me?" (199). Arthur's exuberance at this benefit to a smaller race of men rests upon an inherent view of the beauty and excellence of largeness: being less makes what is more seem greater. Arthur continues his explanation: "Double the height of the mountain, and of course it's twice as grand. Halve *my* height, and you produce the same effect." (200) If humanity can appreciate the 'grandeur of scenery' only because of its insignificance, then Arthur's advantage to being tiny is predicated on the stricter insignificance of those beings. The group continues the discussion of size as Lady Muriel gushes, "Only fancy being a hundred yards high! One could use an

⁸² Bonner 65.

elephant as a paper-weight, and a crocodile as a pair of scissors!” (200). If tininess gives a creature a vaster respect for creation, then an unnaturally large being should dominate the natural world. Lady Muriel does not suggest using boulders or redwood trees for paper-weights; instead, these giants control fellow animals. A power structure similar to Alice’s early views emerges, where smaller beings should submit to larger creatures.

The Earl attempts to counteract this natural imbalance: ““anything, involving a collision of *minds* only, would be possible in our ideal world—for of course we must allow *mental* powers to all, irrespective of size. Perhaps the fairest rule would be that, the *smaller* the race, the *greater* should be its intellectual development!” (200). This patronising acknowledgement of mental worth gives concessions to this hypothetical race of tiny men because of their disadvantage. Lady Muriel will not indulge them, crying, ““I would *not* argue with any man less than six inches high! . . . I’d make him *work!*” (201). Six inches represents some limit of tolerance: below a certain size, a person is unworthy of intellectual engagement, as when Alice defines herself as less than a “respectable person”. Arthur agrees: one could not sacrifice one’s dignity to argue with a one-inch-high man ““[a]ny more than one could argue with a potato.” (201) Like Alice, who ceases to fear the White Rabbit the moment she grows large, Lady Muriel and Arthur do not respect those beneath them. Unlike Alice, they experience nothing to alter their opinions.

The narrator, conversely, remains unconvinced by their assertions, though he cannot say why (201). He is the only one of the group who has any personal experience with size alteration, and perhaps his proximity to the Sylvie and Bruno—who can change size at will like Alice—renders him less willing to engage in the others’ misreading of evolutionary biology. Unlike Alice, the two fairies do not struggle with their identity in the process. Sylvie says to the narrator in response to an invitation, ““we’d better not come *this* size, you know.” (158) Her adult companion had considered this difficulty, and he “had felt that perhaps there *would* be a slight awkwardness in introducing two such tiny friends into Society.” (158)

Here, humans and fairies alike can already see what Alice learned as a result of her time in *Wonderland*: a too-small or too-large individual can be problematic for social and practical reasons. Sylvie continues: “‘We’d better come as—common *children*,’ Sylvie thoughtfully replied. ‘That’s the easiest size to manage.’” (158) Sylvie’s words indicate that she could come in any shape: she chooses a common child for the benefit of her acquaintances. Neither Sylvie nor Bruno falls into the *Alice* trap of assuming that identity somehow involves physical size; however, these two fairies have ostensibly been changing size and shape throughout their lives. When the narrator sees them again—in the form, as Sylvie promised, of common children—he exclaims: “‘You’re larger than when I saw you last! . . . Really I think we ought to be introduced again! There’s so much of you that I never met before, you know.’” (190) This jest derives its humour from the childish precept abandoned by Alice that size and identity are inextricably intertwined. Sylvie plays along, giving her name and Bruno’s. The text is clear, however, that she does not subscribe to the idea that identity comes from size, as she gives the same names by which she and her brother have long been known. Sylvie and Bruno can adapt to their changing environments without the loss of self that Alice fears.

V. Conclusion

Alice’s journey proves worth following not because she goes anywhere in a physical sense: her great triumph consists of ending where she started. In addition, none of *Wonderland*’s other creatures avail themselves of the form-altering resources—mushrooms, bottles of liquid—available to them; the Rabbit’s fan that causes Alice to shrink does not have any apparent affect on the Rabbit himself. These details lend credence to the idea that Alice’s adventures may represent nothing more than a personal journey for herself, the end goal of which is a certain maturity. Alice must gain what Sylvie already possesses and Lady Muriel may never acquire: the understanding of size and shape as factors that do not determine worth or significance.

The Victorian era emphasised progress: physical growth, like industrial, economic, and spiritual growth, was desirable. Perhaps Darwin, who seems to have known even from his early research that his theories do not lend themselves to the idea of inherent progress, made too many concessions to the idea of some relentless improvement. Regardless, an understanding of the idea of natural selection includes recognition that the idea of linear progress is an oversimplification of the complicated reality, in which Alice can be large but childish, small but grown-up. Carroll's characters change, then, not from 'worse' people into 'better' people; rather, the characters increase in fitness to their environments. By relying on the prevailing scientific milieu of Darwinism—and inserting enough textual and illustrative references to serve as clues—Carroll is able to draw on common cultural texts. Carroll's fiction is itself an evolution, from works telling children that they would be of greater value, culturally and personally, once they grew older into works reminding readers that sometimes children are the wisest and grown-ups the most foolish. Armed with this less rigid view of their own bodies and selves, readers of Carroll can grow into and through adulthood with a healthy readiness to adapt.