

2023

Medieval Automata and J.R.R. Tolkien's The Fall of Gondolin

Kristine Larsen

Central Connecticut State University, larsen@ccsu.edu

Follow this and additional works at: <https://scholar.valpo.edu/journaloftolkienresearch>



Part of the [Comparative Literature Commons](#)

Recommended Citation

Larsen, Kristine (2023) "Medieval Automata and J.R.R. Tolkien's The Fall of Gondolin," *Journal of Tolkien Research*: Vol. 16: Iss. 1, Article 6.

Available at: <https://scholar.valpo.edu/journaloftolkienresearch/vol16/iss1/6>

This Conference Paper is brought to you for free and open access by ValpoScholar. It has been accepted for inclusion in *Journal of Tolkien Research* by an authorized administrator of ValpoScholar. For more information, please contact a ValpoScholar staff member at scholar@valpo.edu.

Medieval Automata and J.R.R. Tolkien's The Fall of Gondolin

Cover Page Footnote

Thanks to Janet Brennan Croft for valuable comments.

Medieval Automata and J.R.R. Tolkien's *The Fall of Gondolin*

Slightly expanded from a presentation at the International Medieval Congress, University of Leeds, Leeds, UK, July 1, 2019. Thanks to Janet Brennan Croft for valuable comments.

Tolkien famously named *The Fall of Gondolin* as the “first real story of this imaginary world,” begun either in 1916 or 1917 during the war.¹ With much of it written when he was recovering from trench fever, Tolkien described his state of mind as being “out of my head.”² We should therefore perhaps not be surprised by any particularly fanciful elements in this early version of the tale. Maeglin, nephew of King Turgon, betrayed his city and his kin when captured by Melkor. To save his hide he advised Melkor to “devise out of his sorceries a succor for his warriors in their endeavor” to conquer the hidden and well-fortified city. In particular Maeglin urged Melkor that “From the greatness of his wealth of metal and his powers of fire” he should “make beasts like snakes and dragons of irresistible might that should overcreep the Encircling Hills and lap that plain and its fair city in flame and death.” In response, Melkor and his “most cunning smiths and sorcerers” create out of “iron and flame... a host of monsters such as have only at that time been seen and shall not again be till the Great End.”³

Tolkien lays out in graphic detail the otherworldly nature of these beasts: “Some were all iron so cunningly linked that they might flow like slow rivers of metal or coil themselves around and above all obstacles before them, and these were filled in their innermost depths with the grimmest of the Orcs with scimitars and spears,” an interesting take on the legend of the Trojan horse. In addition,

others of bronze and copper were given hearts and spirits of blazing fire, and they blasted all that stood before them with the terror of their snorting or trampled whatso escaped the ardour of their breath; yet others were creatures of pure flame that writhed like ropes of molten metal, and they brought to ruin whatever fabric they came nigh, and iron and stone melted before them and became as water, and upon them rode the Balrogs in hundreds.⁴

¹ J.R.R. Tolkien, *The Fall of Gondolin* (Boston: Houghton Mifflin Harcourt, 2018), 21-2.

² *Ibid.* 21.

³ J.R.R. Tolkien, *The Book of Lost Tales Part Two*, ed. Christopher Tolkien (Boston: Houghton Mifflin, 1984), 169-70.

⁴ *Ibid.* 170.

Unaware of the danger, the citizens of Gondolin gathered at the walls on the shortest night of the year, taking part in their ritual observance of the rising of the sun at the summer solstice; a false reddish dawn is spied in the north (bringing to mind the aurora borealis), the first sign of Melkor's approaching army. As the mountains appear "dyed as it were with blood," the sentries rode back to the city, and "told of the fiery hosts and the shapes like dragons."⁵

Melkor's battle plan is to have his ferocious host of iron serpents overrun the fields outside the walls and afterwards have the "serpents of bronze... with great feet for trampling" climb over the iron serpents and open a "breach where through the Balrogs might ride upon the dragons of flame." However, "this must be done with speed, for the heats of those drakes lasted not for ever, and might only be plished from the wells of fire that Melko[r] had made in the fastness of his own land."⁶ Christopher Tolkien notes in his commentary that while his father's language "suggests that some at least of the 'monsters' were inanimate 'devices', the construction of smiths in the forges of Angband," his father also uses the term "ruthless beasts" and describes them as having "hearts and spirits of blazing fire." One particular "fire-drake" even "screamed and lashed with its tail" when cut by Tuor.⁷

John Garth calls these "surreal hybrids of beast and machine," and "tanklike" and "mechanistic dragons," drawing clear connections between Tolkien's wartime experiences and his descriptions of the battlefield carnage in Gondolin.⁸ It could be true that, as John Garth seems to suggest, Tolkien was simply mythologizing tanks into dragons of flame. But as Tolkien scholarship has shown us time after time, you use "Tolkien" and "simply" in the same sentence only at great personal risk. In addition, since it was the British who introduced the tank at the Battle of the Somme, having Tolkien make it an instrument of the enemy is curious. In addition, in a January 30, 1945, letter to his son Christopher, Tolkien refers to World War II not World War I as "the first War of the Machines."⁹

⁵ Tolkien, *The Book of Lost Tales Part Two*, 172.

⁶ *Ibid.* 180.

⁷ *Ibid.* 213.

⁸ John Garth, "Battle of the Somme: the 'Animal Horror' that inspired J.R.R. Tolkien," *The Telegraph*, 4 Oct. 2013.

⁹ J.R.R. Tolkien, *The Letters of J.R.R. Tolkien*, ed. Humphrey Carpenter, with the assistance of Christopher Tolkien (Boston: Houghton Mifflin, 2000), 111.



British Mark I tank (1916). Public domain, courtesy of Wikimedia Commons.

To be clear, I am certainly not claiming that Tolkien’s graphic account of the destruction of Gondolin wasn’t at least partly motivated by, and reflects in some way, his experiences in the trenches. In a 2002 *Mythlore* paper Janet Brennan Croft applied the analysis of Paul Fussell in *The Great War and Modern Memory* to demonstrate the war-related themes that run through *The Hobbit* and *The Lord of the Rings*. In particular she focuses on the incorporation of the “antipastoral” forces of the enemy, importance of ritual in times of war, and consciousness of “place in history and connections to the past and future through story.”¹⁰ I would argue that we see this even more clearly in the tale of the Fall of Gondolin – the destruction of the fair elf city through the horrors of Melkor’s mechanized army, the summer ritual as well as the attention given to the lineages of the various houses of the guards including their emblems and sigils, and the constant reminders of the prophetic role of Tuor (and his son Eärendil). But I also argue that in this earliest of tales we see the genesis of threads that will bear considerable fruit in later work. Among these themes are the interplay between shadow and flame, the dangers of technology and its connection with magic, and the fundamental differences between the true creative power that belongs to God alone (here Ilúvatar) and the secondary craftsmanship of lesser beings (true

¹⁰ Janet Brennan Croft, “The Great War and Tolkien’s Memory: An Examination of World War I Themes in *The Hobbit* and *The Lord of the Rings*,” *Mythlore* 23, no. 4 (2002): article 2, 9; 12; 16. <https://dc.swosu.edu/mythlore/vol23/iss4/2/>.

creation versus subcreation), themes I have described at length elsewhere and only touch upon briefly here.¹¹

As I have also explored in depth elsewhere, Tolkien's view of science (for its own sake and without thought of domination) is aligned with the medieval viewpoint of organicism that was overthrown by the Scientific Revolution and Newton's mechanized universe.¹² For example, in Melkor's "wealth of metal and his powers of fire"¹³ we see an echo Saruman's "mind of metal and wheels,"¹⁴ code for the ills of the technology that resulted from the Scientific and Industrial Revolutions.

Similar to Mary Shelley's *The Modern Prometheus* (to use its secondary title), Tolkien's *The Silmarillion* contains a clear cautionary message against a particular type of technology, the attempt to artificially create life. Tolkien illustrates this point on numerous occasions, most dramatically through his various writings on the role of Melkor, Sauron, and Saruman in the 'unholy' origin of the orcs, Uruk-hai, and trolls.¹⁵ The modern reader cannot help but draw a direct connection between such twisted and 'unnatural' creatures (one might say abominations) and their most famous archetype, Frankenstein's monster. All such attempts to 'play God' are doomed to fail. In Tolkien's case, Aulë, the craftsman of engineer, of the Valar, was given by Ilúvatar "skill and knowledge scarce less than to Melkor."¹⁶ Unlike Melkor, Aulë freely gave the fruits of his skills to others, and delighted in the process and outcome of his labors rather than in possessiveness and hubris. But like Victor Frankenstein, Aulë tried to master the secret of creating life (a secret which Tolkien strongly believes is the province of God alone) and thereby make living beings of his own. Frankenstein and Aulë

¹¹ Kristine Larsen, "Shadow and Flame: Myth, Monsters, and Mother Nature in Middle-earth," in *The Mirror Crack'd: Fear and Horror in J.R.R. Tolkien's The Lord of the Rings and its Sources*, ed. Lynn Forest-Hill (Cambridge: Cambridge Scholars Publishing, 2008), 169-96; Kristine Larsen, "'I am Primarily a Scientific Philologist': J.R.R. Tolkien and the Science/Technology Divide," *Journal of Tolkien Research* 15, no. 2 (2022): article 3, <https://scholar.valpo.edu/journaloftolkienresearch/vol15/iss2/3/>; Kristine Larsen, "Frankenstein's Legacy: The Mad Scientist Remade," in *Vader, Voldemort, and Other Villains: Essays on Evil in Popular Media*, ed. Jamey Heit (Jefferson: McFarland Publishers, 2011), 46-63.

¹² Kristine Larsen, "Medieval Organicism or Modern Feminist Science? Bombadil, Elves, and Mother Nature." In *Tolkien and Alterity*, eds. Christopher Vaccaro and Yvette Kisor (Cham: Palgrave Press, 2017), 95-108.

¹³ Tolkien, *The Book of Lost Tales Part 2*, 169.

¹⁴ J.R.R. Tolkien, *The Two Towers* (Boston: Houghton Mifflin, 1993), 76.

¹⁵ E.g., J.R.R. Tolkien, *Morgoth's Ring* (Boston: Houghton Mifflin, 1993), 405-23.

¹⁶ J.R.R. Tolkien, *The Silmarillion*, ed. Christopher Tolkien (Boston: Houghton Mifflin), 19.

initially believe their motivation justify their actions, but are eventually forced to face the folly of their experiments. Aulë wished to have living beings whom he could teach and share his skills with, and had grown impatient waiting for the promised arrival of the Children of Ilúvatar. Like Frankenstein, Aulë knew that his peers would not understand his motivation, and thus he labored in secret, but was unable to keep his actions hidden from the true Creator. Upon crafting the seven dwarf fathers, Aulë was visited by the Voice of Ilúvatar and faced the failure of what he had attempted to accomplish: “Why does thou attempt a thing which thou knowest is beyond thy power and thy authority? For thou hast from me as a gift thy own being only, and no more.”¹⁷ Demonstrating his infinite love and pity, Ilúvatar adopts the dwarfs and gives them the autonomous spirits (souls) which Aulë does not have the power to bestow. In essence, before Ilúvatar’s intervention, the dwarves are automatons – unnatural simulations of living beings. Melkor’s mechanized fire-drakes appear to be a more nefarious example.

The term automaton comes from the Greek *automatos*, ‘self-acting.’ In Greek mythology they were generally metallic statues of animals, humans, and even inanimate objects crafted by Hephaestus the craftsman of the gods, the Olympian analog of Tolkien’s Aulë, or the Athenian Daedalus, who, it occurs to me, has some parallels to Saruman. They were said to have the ability to move and in some cases even think. Examples include the gold and silver dogs that guarded the palace of Alcinous, king of the Phaeacians, in Homer’s *Odyssey*, and the golden-wheeled tripods of Olympus described in the *Iliad*.

An important example is Talos, the bronze colossus built by Hephaestus. It protected Crete from invading forces, patrolling its shores and tossing boulders at enemy ships. The connection between the flame dragons – who Tolkien notes could not travel too far from the source of their internal heat – and Talos becomes clearer when you realize that Talos was fed by a tube running from one of his feet to his head carrying his lifeforce, or ichor. In the *Argonautica* by Apollonius of Rhodes, Medea is able to defeat Talos by removing a bolt in his ankle and allowing his ichor to flow out. Likewise the lifeforce of the fire-drakes was limited, as they were not creatures of Ilúvatar and hence were removed from the true lifeforce of the universe, the Flame Imperishable.

¹⁷ Tolkien, *The Silmarillion*, 43.



Talos armed with a stone. Phaistos, Crete, c. 300 BCE. Public domain, courtesy of Wikimedia Commons.

While some automatons of classical literature were clearly fanciful, in the first century CE Hero of Alexandria wrote *On Automaton-Making* and other treatises on practical machines that used pneumatics, mirrors, pulleys, and other mechanical principles.¹⁸ Scott Lightsey describes how by the 13th and 14th centuries “Lifelike mechanical imitations of birds and trees, marvelous human forms, and even automatic fountains and boat were powered . . . by simple hidden machines, hydraulic engines, and complicated clockworks.”¹⁹

¹⁸ E.R. Truitt, *Medieval Robots* (Philadelphia: University of Pennsylvania Press, 2015), 4.

¹⁹ Scott Lightsey, *Manmade Marvels in Medieval Culture and Literature* (New York: Palgrave Macmillan, 2007), 4.



A design by Hero of Alexandria included in *Pneumatics* (1851). Public domain, courtesy of Google Books.

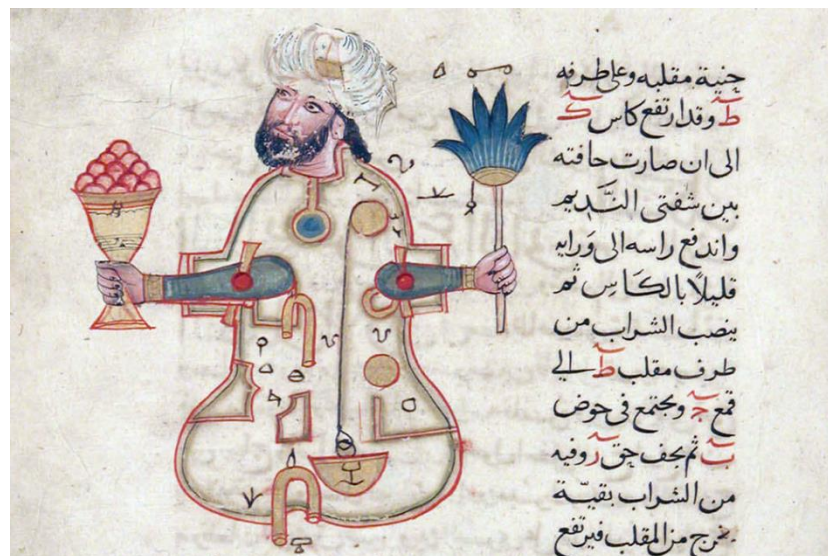
Many of these originated in the Islamic world, and as a result, as E.R. Truitt argues, Latin Christians considered them “with a mixture of envy and suspicion” due to their association with “un- or anti-Christian beliefs.”²⁰ The creators of automata were likewise viewed as “scholars and magicians, rather than artisans,” leading to automata often being connected with sorcery and the demonic in medieval texts.²¹ For example, the castle Douloureuse Garde in the French prose *Lancelot du lac* (c. 1220 CE), is described as guarded by copper knights created through enchantment.²² In a contemporary prose continuation of Chrétien de Troyes’s *Perceval* a cursed castle houses a “copper bull with a demonic oracle trapped inside;” Perceval forces the fifteen hundred occupants of the castle to “run the gauntlet between the copper men that guard the door with hammers.”²³ Only the thirteen individuals who convert to Christianity on the spot are spared. The demon “escapes from the bull with a noise like a thunder clap and the bull melts away.” This connection between automatons and demonic forces finds a parallel in Tolkien’s tale – recall that Melkor’s “most cunning smiths and sorcerers” were both involved in the devising of his war beasts.

²⁰ Truitt 5.

²¹ *Ibid.* 41.

²² *Ibid.* 59.

²³ *Ibid.* 60.



“Figure for Use at Drinking Parties.” Folio from al-Jazari, *Book of the Knowledge of Ingenious Mechanical Devices* (1271 CE). Public domain, courtesy of the Metropolitan Museum of Art.

A similar artificial war beast is found in the Persian epic poem *Shahnama* (c. 977 CE), in a description of Alexander’s battle against King Porus of India. Similar to Melkor, he presses over a thousand ironsmiths into service in the creation of an equal number of life-sized hollow statues of horse-mounted soldiers, set to move upon wheels. The imitations are given a realistic paint job and outfitted with armor, but filled with naphtha, which is set on fire before the statues are rolled towards the easily terrified elephants of the rival army.²⁴ Alison Harthill notes that, as Alexander clearly understood, the “psychology of the battlefield is as significant as the technology of the weaponry. Means of terrifying the enemy were highly desirable whether through audible, visual or even olfactory effect;” for this reason, fire-breathing dragons are the “dream war machine.”²⁵

²⁴ Adrienne Mayor, *Gods and Robots: Myths, Machines, and Ancient Dreams of Technology* (Princeton: Princeton University Press, 2018), 67.

²⁵ Alison Harthill, “Dreams of War, Dreams of Dragons’ Fire: Conrad Kyeser’s *Bellifortis*,” in *Medieval Science Fiction*, ed. Carl Kears and James Paz (London: King’s College, 2016), 187.



Alexander's fiery statues. Illustration from the *Shahnama*. c. 1335 CE. Public domain, courtesy of Wikimedia Commons.

Take, for example, *Bellifortis* (Strong in War), a fanciful work in Latin by German Konrad Kyeser circa 1405. Accompanied by nearly 180 images, the work describes all manner of war technologies, including trebuchets, cannons, and instruments of torture (including chastity belts). The eighth chapter focuses on fireworks, specifically how to use gunpowder and fire to “ruin, destroy, kill and annihilate everything.”²⁶ One design is for a flying dragon that spits fire thanks to pipework, petroleum, and sulfur. A later example of a war dragon is in the 1472 *Dere militari* of Roberto Valturio, “who designed a siege engine in the form of a mechanical dragon which could not simply breathe fire, but fire rockets.”²⁷ Again, the analogies with the fire-drakes of Gondolin are clear. Here we see Tolkien drawing upon real world myth and legend, masterfully transforming it and making it his own.

²⁶ *Ibid.* 185.

²⁷ *Ibid.* 187

Finally, Harthill notes that “In its portrayal of mechanical dragons, of fierce, perhaps futuristic, weapons... *Bellifortis* can also be read as an early example of science fiction.”²⁸ Similarly, John Garth argues that “there is a whiff of science fiction about the army attacking Gondolin.”²⁹ However, Garth claims that here Tolkien was “anticipating the dictum of Arthur C. Clarke that ‘Any sufficiently advanced technology is indistinguishable from magic’,” and that “the ‘heart and spirits of blazing fire’ of its brazen dragons reminds us of the internal combustion engine;” this interpretation leads him to an apparent quandary, noting that the mechanistic dragons of Melkor “violate the boundary between mythical monster and machine, between magic and technology.”³⁰

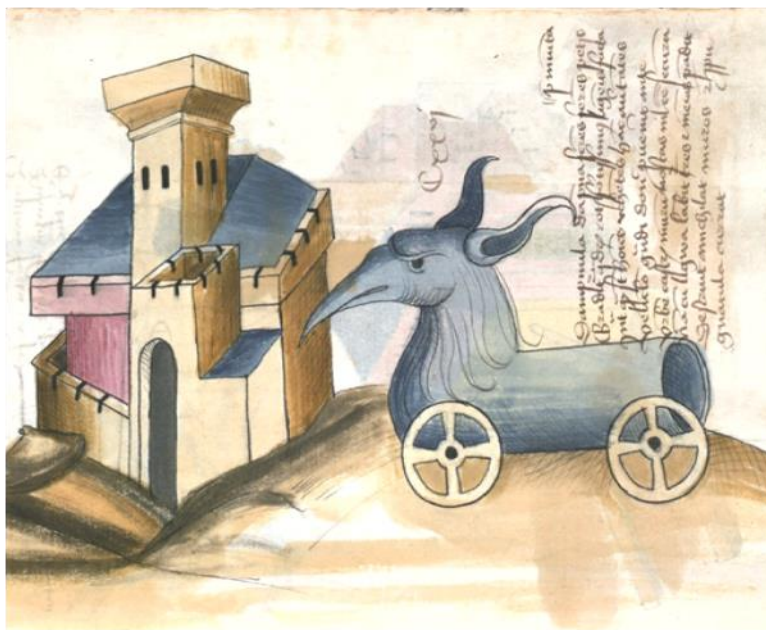


Illustration from 1430 copy of Kyeser’s *Bellifortis*. Public domain.

I suggest that Tolkien very much intended to breach this wall. In a 1951 letter to Milton Waldman he describes magic as “all use of external plans or devices (apparatus) instead of developments of the inherent inner powers or talents – or even the use of these talents with the corrupted motive of dominating.... The Machine is our more obvious modern form though more

²⁸ *Ibid.* 190

²⁹ John Garth, *Tolkien and the Great War* (Boston: Houghton Mifflin, 2003), 221.

³⁰ *Ibid.* 221; 220.

loosely related to Magi than is usually recognized.”³¹ In a 1954 letter to Naomi Mitchison he further explains

The Enemy, or those who have become like him, go in for ‘machinery’ – with destructive and evil effects – because ‘magicians’, who have become chiefly concerned to use *magia* for their own power, would do so (do do so). The basic motive for *magia* – quite apart from any philosophic consideration of how it would work – is immediacy: speed, reduction of labour, and reduction also to a minimum (or vanishing point) of the gap between the idea or desire and the result or effect,

which is essentially the modern use of most technology (think one-click shopping on your cellphone, for example).³²

Adrienne Mayor reminds us that the

common denominator of mythic automata that took the forms of animals or androids... is that they were ‘made, not born.’ In antiquity, the great heroes, monsters, and even the immortal Olympian gods of myth were the opposite: they were all, like ordinary mortals, ‘born, not made.’ ... Since archaic times, the difference between biological birth and manufactured origin marks the border between human and nonhuman, natural and unnatural.³³

In Middle-earth only Ilúvatar has the ability to truly give rise to life, to create in an artistic rather than technological sense. E.R. Truitt notes that

Automata stood at the intersection of natural knowledge (including magic) and technology, and they embodied many themes central to medieval learned culture. Indeed, automata were troubling links between art and nature. They illuminated and interrogated paired ideas about life and death, nature and manufacture, foreign and familiar.³⁴

This is precisely why they are a perfect fit for Tolkien’s legendarium. In the mechanized dragons of *The Fall of Gondolin* we see echoes of Tolkien the student of the medieval as well as Tolkien the modern soldier, as well as Tolkien the skeptic of technology. Tolkien certainly meant for us to be unsettled, perhaps even horrified, by Melkor’s mechanical dragons. They are an abomination on

³¹ Tolkien, *The Letters of J.R.R. Tolkien*, 146.

³² *Ibid.* 200.

³³ Mayor 2.

³⁴ Truitt 1.

many levels. Tolkien may have claimed to have been out of his head when he wrote this tale, but as with Tolkien's tales in general, there is often profound truth hidden in plain sight even within the most wildly fantastical.

Works Cited

- Croft, Janet Brennan. "The Great War and Tolkien's Memory: An Examination of World War I Themes in *The Hobbit* and *The Lord of the Rings*." *Mythlore* 23, no. 4 (2002): article 2. <https://dc.swosu.edu/mythlore/vol23/iss4/2/>.
- Garth, John. *Tolkien and the Great War*. Boston: Houghton Mifflin, 2003.
- Garth, John. "Battle of the Somme: the 'Animal Horror' that inspired J.R.R. Tolkien." *The Telegraph*, 4 Oct. 2013.
- Harthill, Alison. "Dreams of War, Dreams of Dragons' Fire: Conrad Kyeser's *Bellifortis*." In *Medieval Science Fiction*, edited by Carl Kears and James Paz, 177-98. London: King's College, 2016.
- Larsen, Kristine. "Shadow and Flame: Myth, Monsters, and Mother Nature in Middle-earth." In *The Mirror Crack'd: Fear and Horror in J.R.R. Tolkien's The Lord of the Rings and its Sources*, edited by Lynn Forest-Hill, 169-96. Cambridge: Cambridge Scholars Publishing, 2008.
- Larsen, Kristine. "Frankenstein's Legacy: The Mad Scientist Remade." In *Vader, Voldemort, and Other Villains: Essays on Evil in Popular Media*, edited by Jamey Heit, 46-63. Jefferson: McFarland Publishers, 2011.
- Larsen, Kristine. "Medieval Organicism or Modern Feminist Science? Bombadil, Elves, and Mother Nature." In *Tolkien and Alterity*, edited by Christopher Vaccaro and Yvette Kisor, 95-108. Cham: Palgrave Macmillan, 2017.
- Larsen, Kristine. "'I am Primarily a Scientific Philologist': J.R.R. Tolkien and the Science/Technology Divide." *Journal of Tolkien Research* 15, no. 2 (2022): article 3. <https://scholar.valpo.edu/journaloftolkienresearch/vol15/iss2/3/>.
- Lightsey, Scott. *Manmade Marvels in Medieval Culture and Literature*. New York: Palgrave Macmillan, 2007.
- Mayor, Adrienne. *Gods and Robots: Myths, Machines, and Ancient Dreams of Technology*. Princeton: Princeton University Press, 2018.
- Shippey, Tom. *J.R.R. Tolkien: Author of the Century*. Boston: Houghton Mifflin, 2002.
- Tolkien, J.R.R. *The Book of Lost Tales Part Two*. Edited by Christopher Tolkien. Boston: Houghton Mifflin, 1984.
- Tolkien, J.R.R. *Morgoth's Ring*. Edited by Christopher Tolkien. Boston: Houghton Mifflin, 1993.

- Tolkien, J.R.R. *The Two Towers*. Boston: Houghton Mifflin, 1993.
- Tolkien, J.R.R. *The Letters of J.R.R. Tolkien*. Edited by Humphrey Carpenter, with the assistance of Christopher Tolkien. Boston: Houghton Mifflin, 2000.
- Tolkien, J.R.R. *The Fall of Gondolin*. Edited by Christopher Tolkien. Boston: Houghton Mifflin Harcourt, 2018.
- Truitt, E.R. *Medieval Robots*. Philadelphia: University of Pennsylvania Press, 2015.