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Extending Arda: Mapping beyond the Lord of the Rings and Silmarillion

Stentor Danielson

Slippery Rock University of Pennsylvania, stentor.danielson@sru.edu

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Extending Arda: Mapping beyond the Lord of the Rings and Silmarillion

J.R.R. Tolkien is famous for creating an entire world (known as Arda), but his writings about it leave much of its territory sketched in only the vaguest terms. This has not prevented fans from wondering what lies beyond the edges of our canonical knowledge. In both fiction and cartography, they have sought to flesh out the geography of Arda. In doing so, they have revealed much about the ideas they have about both our primary world and the secondary world of the legendarium. Examination of such maps provides a window into the process of sub-creation: the remixing of elements the sub-creator sees in those worlds (Wolf 2019).

In this paper, I trace the lineage of maps of Arda beyond the regions appearing in Christopher Tolkien's canonical maps of Beleriand and of northwestern Middle-earth in the Third Age. My work sits at the intersection of fandom studies and literary cartography. Fandom studies examines how fans of literature and other media engage with and rework the source material (Pugh 2005, Hellekson and Busse 2014, Walls Thumma 2016). Literary cartography asks how authors of literature make use of maps (literal and metaphorical) as part of their works (Bushell 2012, Engberg-Pedersen 2017, Piatti and Hurni 2011, Rossetto 2013). The intersection is a fruitful one especially for studies of Tolkien, whose maps are iconic and shaped the characteristics of the fantasy genre (Ekman 2013, Jones 2006). Yet to this point, fandom studies has tended to pass over maps as a focus or product of fan activity, and literary cartography has paid comparatively little attention to maps in the fantasy genre (though Tolkien has attracted a few studies, e.g. Campbell 2007, Timpf 2017).

This study requires looking at three sets of source material. First, we have the material created by the Tolkiens themselves. This is a complex canon, as we have numerous geographical concepts or maps from earlier stages of the development of the legendarium that were never updated to be consistent with later evolution of the mythology. Second, we have a series of more-or-less official published maps, from various reference works created over the years. And third, we have a body of fan cartography. Fan cartography consists of maps drawn by fans of Tolkien's works as a way of engaging with, and commenting on, the texts (Danielson 2018). In the last couple of decades, the internet has made it far easier for fan artists to share their works, and for researchers to locate them. For this paper, I conducted searches on Google as well as on the website DeviantArt

(known for hosting fan works) for variations on "middle-earth map" and "Arda map." I selected from the results those maps that maintain fidelity to the canonical northwestern geography, while attempting to show features beyond that region at the scale of the continent or world.

In examining the second and third sets of maps, we can identify two governing impulses: curation and transformation. These impulses are well known to students of fandom (see the entries on "Curative Fandom" and "Transformative Fandom" at fanlore.org), though usually in the context of fan fiction rather than cartography. The curation impulse is the desire to summarize and integrate all geographical knowledge we can derive from Tolkien's works, recording it and clarifying its interrelationships through the cartographical medium. The transformative impulse is the desire to expand Tolkien's world, adding to it places of the map-maker's own invention in order to fill in the missing parts. Some degree of expansion is necessary for even the most dedicated curator if they wish to produce a map without gaps or indefiniteness, but some cartographers wholeheartedly embrace the opportunity to invent for themselves new lands beyond the northwest. These individuals take seriously Tolkien's suggestion that he would "leave scope for other minds and hands, wielding paint and music and drama" to build on his legendarium (Tolkien 2000). Nevertheless, the term "transformation" sits somewhat uneasily in the context of fan cartography. While authors of fan fiction often take advantage of the opportunity to substantially reinterpret canonical information (Walls Thumma 2016), fan cartographers rarely alter or rethink any of the canonical geography in the same way (Danielson 2018). Thus, in this paper I prefer to talk of "expansion" rather than transformation, highlighting the impulse to add to, rather than change, what we know from Christopher's maps.

Tolkien's Canon and its Gaps

The iconic map drawn by Christopher for *The Lord of the Rings* (Tolkien 1954) covers only a subcontinental portion of the northwest of the main landmass (the continent known as Endor), corresponding to a box drawn around the lands traversed within the story. Other maps available at the time of its publication – Thrór's Map and the Wilderland map in *The Hobbit*, and the close-up maps of the Shire and the Gondor/Mordor border area – fill in more detail within the scope of the main map. In the story, a few references gesture to the existence of large

realms from whence come the various Southrons and Easterlings, as well as the Undying Lands, beyond the map's borders, but we get very little detail about the geography of those lands.

If Middle-earth is an earlier stage of our world, it is presumably the same size, at roughly 196.9 million square miles. Judging by the scale provided, Christopher's map covers some 3.8 million square miles, or 1.9% of the globe¹. Alternately, we could say that Christopher's map shows 2.7 million square miles of land, or 4.8% of Earth's land area.

It is likely that fans of *LotR* made speculative maps of Arda beyond the boundaries of Christopher's maps, and wrote fanfiction occurring in those areas, in the first few decades following the books' publication. However, in a pre-internet era, those works remained private or circulated only among friends, and have not been preserved in an archive accessible to researchers.

A major step forward in our understanding of the wider scope of Arda came with the 1977 publication of *The Silmarillion* (Tolkien 1977). This book contained another map, covering an additional (somewhat smaller) subcontinental region beyond the edges of the *LotR* map. Moreover, the story contained descriptions of farther parts of the world and its overall geographical structure. We learn of Cuivienen and Hildórien in the far east, Utumno and Angband in the north, and Aman, Tol Eressëa, and Númenor in the West. We also get general descriptions of the shape of the world, both before and after it is made round. This new information provided grist for cartographers to create speculative maps of the entire world.

David Day and the "Lungs Map"

The first map of all of Arda that was published was drawn by David Day for the 1978 guidebook *A Tolkien Bestiary* (Day 1978) (Fig. 1a). This map is curious in its efforts to combine all of the locations mentioned in all of Tolkien's

1 These calculations are based on the map from the first edition hardcover, which is the most geographically extensive of several versions that have been published, showing the Cape of Forochel and a more substantial portion of Harad. They also assume that the provided scale can be used to measure and calculate the map's area, though as Fonstad (1991) points out, that is actually impossible for any flat map of a round world.

published texts into a single map, despite the vast geographical changes that occurred over the ages. We thus see the Lamps, Beleriand (awkwardly shoved to

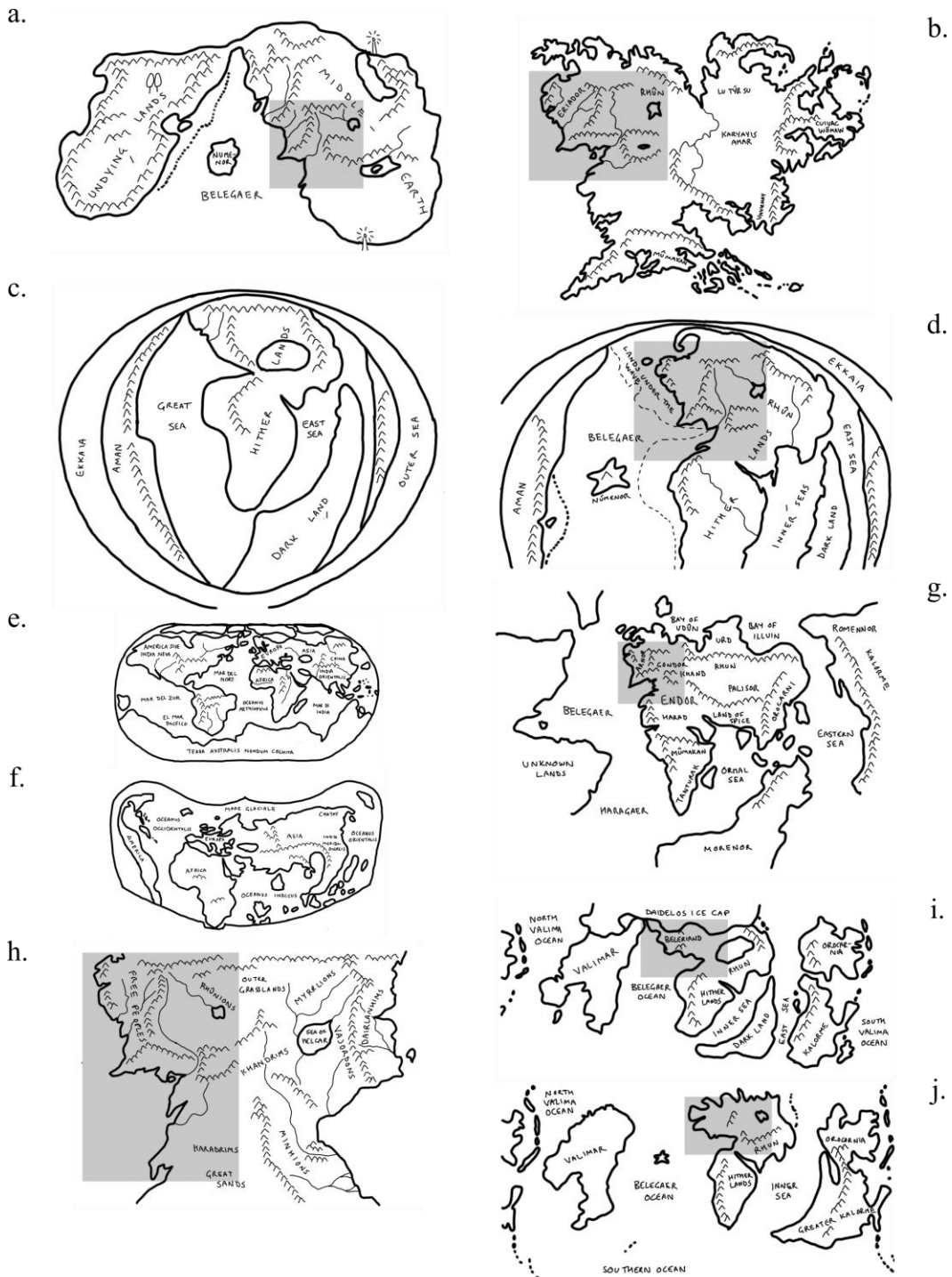


Figure 1: Maps of Arda. Gray rectangles indicate the approximate area covered by the map of Northwestern Middle-earth from *The Lord of the Rings*. a: David Day ("lungs map") (Day 1978).

b: Map from Middle Earth Role Playing (Fenlon 1982). c: Map from the Ambarkanta (Tolkien 1986). d: Second Age map by Karen Wynn Fonstad (Fonstad 1991). e: Typus Orbis Terrarum by Abraham Ortelius, primary world, 1595. f: Universalis Cosmographia by Martin Waldseemüller, primary world, 1507. Note shape of Asia drawn from Ptolemy. g: Lindëfirion map (Rydman n.d.). h: Map from *I've Seen Hell* (CeffylGwyn 2017). i: First Age map from the Evolution and Ecology project. j: Second Age map from the Evolution and Ecology project.

the north of the regions known from *LotR*), Valinor, and Númenor all on a single map. Day acknowledged the anachronism of his map by subtitling it "A Composite Study of the Lands of Arda Throughout the Ages." Lacking any detailed information about the shape of coastlines, Day drew the two continents of Aman and Endor as bean-shaped blobs, joined together in the north by the Helcaraxë. Some fans have dubbed this map the "lungs map," from its resemblance to that organ.

As a map of Arda, Day's map has many flaws. But because it was the first published attempt to encompass the geography of the whole world, and because it is beautifully illustrated, it has remained a popular representation of Arda. Versions of it continue to circulate online, sometimes to the consternation of fans more focused on the details of canon in the legendarium (see e.g. Soarel2 2015). Day's map attempted to do as much curation, and as little expansion, as possible – but in trying to compress all of the ages into one map, he left the curators unsatisfied.

Day's map has been an inspiration for some fan cartographers. I was able to locate several recent examples of fan maps that drew clear inspiration from Day's map, as they incorporated his choices of how to represent features not established in canon (e.g. Bruzzone 2018, Fanta 2014, Ginthoriel n.d.). For example, these fan maps reproduce a hooked peninsula on the northwest coast of Aman, which Day invented simply to make the coastline of the continent look more realistic. They also maintain Day's choice to have the Sea of Helcar connect to the northeastern ocean by a tiny strait. Thus these maps are artistic re-renderings of Day's cartography, rather than independent attempts to envision the broader outlines of Arda.

Pete Fenlon and Middle-Earth Role Playing

The next major published attempt to map beyond the boundaries of the *LotR* map was done by Pete Fenlon in 1982 (Fenlon 1982) (Fig 1b). Fenlon created a

map of the continent of Endor for use with the *Middle-Earth Role Playing* game (MERP). Some sources suggest that this map played a role in convincing the Tolkien Estate to give the roleplaying license to Iron Crown Enterprises (publisher of MERP) over its competitors (Taylor 2014).

As MERP is set in the mid-Third Age, Fenlon does not incorporate locations from earlier periods such as Beleriand or Númenor, and Aman is absent as well. Fenlon's map depicts a continent comparable in size to the Eurasian landmass. In contrast to Day's rounded "lungs," Fenlon's coastline is characterized by jagged twisting peninsulas, deep fjords, and long island arcs, which give the appearance of having been created by some sort of fractal generation process. Where Day drew little that was not attested in the legendarium's canon or necessitated by cartographic completeness, Fenlon filled the further reaches of the continent with a profusion of invented place-names and geographical details. Fenlon stated in an interview that the Tolkien Estate had no objection to geographical invention, either beyond the borders of Christopher's map or in adding detail within it (Seeman 1996). These differences reflect a major difference in the agenda behind the maps. Day drew his map for an encyclopedia meant to compile what we know about Tolkien's world from the author's own writings. Fenlon drew his map with the goal of expanding the world of Middle-earth for players of the game who wanted to range beyond the lands visited in Tolkien's stories. That is, the goal of MERP is for players to create new stories within Tolkien's world, and one important way to enable that is to give them new lands to explore. (Though it is worth noting that the published materials for *The One Ring* roleplaying game, which took over the license in the 2000s, do not expand the geography of Middle-earth beyond what is shown in Christopher's maps.)

While at first glance the outlines of Fenlon's continent bear only modestly more resemblance to the geography of our primary world than do Day's, a closer inspection reveals Fenlon to have been drawing on a variety of ideas from primary world geography to shape his inventions, in a way not matched by Day. We can see a realistic distribution of biomes, for example, with Harad becoming a large subtropical desert bordered to the south by equatorial rain forest, and a broad interior steppe region giving way to temperate forests on the east coast. Moreover, descriptions of the invented lands in various MERP materials clearly draw on facts and stereotypes about cultures of similarly-located parts of the primary world. For example, the people of Tumag, located in the humid region south of Harad, speak a language derived from Swahili, spoken in the analogous

part of the primary world (Iron Crown 1998). The peoples of the south and east are consistently described as "tribes," and Fenlon states that these regions are characterized by small, isolated groups who have rarely been united into any larger entities able to have influence on the history of the world, due to the lack of civilizing influence by Elves and Edain (Fenlon 1982). This conception of Middle-earth has parallels in the widespread (though false) view of non-Europeans in the primary world as "people without history" (Wolf 1982).

Fenlon's use of real-world geographical concepts to flesh out Arda contrasts with the lack of such work by Day. The center of Day's map lies on a line through Rhovanion and Eriador. Were that the equator of Arda, we would expect Mirkwood and the Old Forest to be tropical rain forests, which they clearly are not. So either climate systems work differently in Day's vision of Arda, or his Aman and Endor are located almost entirely in the northern hemisphere. But rather than seeing Day's map as a failure of climatology, what makes more sense is to say that Day was unconcerned with climatology. He did not reach for climatological principles in order to make further inferences about what rationally must exist in Arda.

During the two decades that ICE held the license to publish MERP, a variety of official supplementary materials were produced about this expanded world. Moreover, a great deal of fan activity expanded the MERP version of Arda. For the most part, the MERP community has stayed faithful to Fenlon's original map (so as to be able to make use of lore developed for that geography), though a number of variants have been produced (see examples at the New Notion Club Archives wiki, <https://notionclubarchives.fandom.com/wiki/Middle-Earth>).

In addition to fan works tied directly to MERP, other fan artists have taken inspiration from Fenlon's map, which was widely available as a poster. Searches for fan cartography turn up several instances of maps reflecting Fenlon's distinctive outline of the continent (e.g. Loridan n.d., Ives 2004, mairon666 2019).

One especially elaborate example of this family of fan maps is the Middle-earth DEM Project. This project was an effort to create an extremely detailed Digital Elevation Model (DEM) of Middle-earth, which could then be rendered into a 3-D landscape and explored within the Outerra rendering engine (Middle-earth DEM 2014). Though the Middle-earth DEM did not expand to cover all of Arda, it did make use of Fenlon's maps to expand beyond Christopher Tolkien's coverage, particularly in the Forodwaith and Forochel areas to the north.

These Fenlon-family fan maps can be roughly divided into three groups, though we often lack information to make a definite determination of where a specific map belongs. First are those made by MERP players, who are faithfully representing the canonical geography of the world they play in, which may be in some sense more "real" for them than Tolkien's version of Arda. Second are those who have encountered Fenlon's map and, because it was published as a glossy poster, mistakenly took it to represent Tolkien's canon. And third are those who simply think that Fenlon's vision of Arda looks cool, and were inspired to base their own work on it.

The arrival of the Ambarkanta

The project of mapping Arda received a boost with the publication of the History of Middle-earth series, which contained fascinating clues about how Tolkien envisioned the wider world of his legendarium. The first volume, *The Book of Lost Tales I* (Tolkien 1983), contained Tolkien's earliest rough sketches of Arda as a whole. The first is a fascinating cosmological diagram of Arda in the form of a ship, titled "I Vene Kemen." This kind of metaphorical cosmology was common in the Medieval period (Harley and Woodward 1987), but was not attempted again by either of the Tolkiens. Moreover, I found no fan maps pursuing a similar approach – instead, fan maps of Arda, much like those of the northwest, work within the modern paradigm of spatial accuracy (Danielson 2018). A second early map by Tolkien is done in a more standard geographical approach, showing the coastlines of Beleriand and Aman in rough form. However, the vagueness of this sketch, and its ties to the earliest and superseded version of the mythology, meant it had little impact on other maps of Arda. In my searches I was unable to locate any other maps with unmistakable direct influence from this early map.

Much more influential were the maps included with the Ambarkanta,² an essay published in the fourth volume, *The Shaping of Middle-earth* (Tolkien

2 Pete Fenlon reports having access to a photocopy of the Ambarkanta map while designing his world map, which he describes as "important" but also only a "rough outline" to be altered based on his own ideas (Seeman 1996). The specific influence of the Ambarkanta map on Fenlon's work is difficult to discern.

1986) (Fig. 1c). The Ambarkanta maps, while highly generalized, give a picture of the overall organization of land and water in Arda. Most striking about the Ambarkanta geography is the resemblance to the shape of our primary world's Eastern Hemisphere continents. To the south of Beleriand (an obvious pseudo-Europe), we have a region that bulges to the west just north of the equator then tapers off to the south, strongly resembling in shape and general position the continent of Africa. The northern part of Endor exhibits peninsulas recalling the shapes of Arabia and India, and a rounded east coast much like that of China.

To the south of these pseudo-Eurasia and -Africa regions, a continent labeled "Dark Lands" reaches up from the south pole, nearly touching the southern tip of pseudo-Africa, veering away to allow for an inland ocean, then rising to a point near pseudo-China. This landmass resembles nothing in our primary world, but does bear a striking similarity to the way that early modern European cartographers drew Terra Australis Incognita, the hypothesized southern continent that always lay just beyond the southernmost European sailors' voyages (Scott et al. 2012). In particular, the shapes of Terra Australis in Abraham Ortelius's famous *Typus Orbis Terrarum* of 1595 (Fig. 1e) or Gerardus Mercator's *Nova et Aucta Orbis Terrae Descriptio ad Usum Navigantium Emendate Accommodata* of 1569 closely match Tolkien's Dark Lands. The parallel with early modern maps of Terra Australis is intriguing because, as Stefan Ekman (2013) points out, Tolkien's maps are stylistically much more indebted to the cartography of the 1500s and 1600s than to medieval maps. Tolkien's side-view mountains and trees match those on early modern European maps, and his evident concern for geometric accuracy as opposed to simply conceptual topology reflects changing cartographic concerns of the early modern era (Harley and Woodward 1987).

As exciting as the Ambarkanta maps were for fans interested in the whole spread of Arda, they could not be straightforwardly taken as canonical. The Ambarkanta was written in the 1930s, well before the *Lord of the Rings*, and its geography, were invented. Reconciling the two requires somehow squeezing all of the *LotR* lands in between Beleriand and the rest of Endor. Further, the Ambarkanta represents a world of what became, in the later legendarium, the First Age. Between that point and the time of the *Lord of the Rings* in the late Third Age, Arda suffered two major catastrophes likely to drastically alter the world's geography: the War of Wrath (including the sinking of Beleriand), and the downfall of Númenor. Of the latter, Tolkien states: "And all the coasts and seaward regions of the western world suffered great change and ruin in that time;

for the seas invaded the lands, and shores foundered, and ancient isles were drowned, and new isles were uplifted; and hills crumbled and rivers were turned into strange courses" (Tolkien 1977).

Moreover, the Ambarkanta depicts a flat earth, whereas by the time of *LotR* the world is a sphere. A sphere has four times the surface area of a circle with the same radius, so much would have to change to turn the flat Ambarkanta world into a round one. Note that the pseudo-Eurasian portion of Endor fits within the circular world, with room to spare for Aman, Belegaer, and the far eastern ocean and continent. But in the primary world, Eurasia occupies about 140 degrees of latitude – nearly a whole hemisphere on its own – not counting the projecting areas of Siberia and Iberia (which have no direct analogues in the Ambarkanta maps).

The Ambarkanta maps raise the question of how close the geographical parallels between Middle-earth and our primary world are meant to be. In the earliest version of the legendarium Tolkien intended a very close correspondence, with the Elven city of Körtirion located precisely at Warwick, and an explanation of the breaking up of Tol Eressëa to explain the division between Great Britain and Ireland (Tolkien 1983, 1984). But as time went on, these close correspondences were steadily abandoned. While northwestern Middle-earth remains clearly inspired by European folklore, and the threatening hordes from Harad and Rhûn draw directly from Orientalist fantasies about African and Asian peoples, more detailed geographical parallels are lacking. The Ambarkanta maps come from a middle stage of this development, and show Tolkien still aiming to explain how the geography of his legendarium became that of our primary world. But because Tolkien produced no later world maps, turning to the Ambarkanta as a canonical source means bringing those direct geographical correspondences forward into later versions of the legendarium.

Following the publication of the Ambarkanta, several published maps of Arda have aimed to incorporate these new geographical concepts. A series of maps drawn by Sally Davies for the 1991 *A Tolkien Encyclopedia* (Day 1991) begins with First Age and earlier maps resembling Day's "lungs map." It is worth mentioning that Day was the editor of this volume, though it is unknown what (if any) direction he gave Davies. But as time goes on, the landmasses morph into shapes more resembling the Ambarkanta, and eventually the primary world. In Davies' Fourth Age map, the Sunlands of the far east have even begun to resemble the outlines of the Americas.

The most influential secondary source on the geography of Arda is the revised second edition of Karen Wynn Fonstad's *Atlas of Middle-earth* (Fonstad 1991). Fonstad surrounded her work with a detailed scholarly apparatus that emphasized her fidelity to canon. In the interest of curatorial comprehensiveness, she incorporated every location mentioned in Tolkien's writings, even those – like the Cottage of Lost Play from the *Book of Lost Tales* – that were quite likely removed from Tolkien's conceptions as time went on. She thus created First Age and Second Age world maps that closely resembled the Ambarkanta maps. To solve the geographical inconsistencies noted above, she pushed the Sea of Helcar and Orocarni eastward, and the Blue Mountains westward, in order to squeeze in what would become Eriador and Rhovanion, while maintaining the pseudo-Africa, -Arabia, -India, and -China from the Ambarkanta map (Fig. 1d).

The popularity and detail of Fonstad's maps have had a huge influence on fan cartography. Most fan maps of Arda show influence from the Ambarkanta, and nearly all of them get it filtered through Fonstad (though see Godkin and Mints 2016 for a counter-example). As with Day's map considered earlier, we can see fan artists adopting some of the non-canonical details that Fonstad introduced in order to give her map more realism. For example, she adds a prominent hooked peninsula to the pseudo-Arabia. This hooked peninsula appears repeatedly on fan maps. Likewise, a north-pointing peninsula on the far eastern coast of Fonstad's maps is often reproduced by fan maps (e.g. Insholent 2014, Murphy 2002).

As with the maps following Day and Fenlon, we can distinguish three trends in fan maps modeled after Fonstad. First, we have maps whose primary agenda is artistic. These maps take Fonstad's geography as canonical, and focus on producing an artistically satisfying re-rendering of it. Second, we see maps with a primarily curatorial agenda. Fonstad's careful attention to Tolkien's canon means that her work is widely regarded as just a few inches short of canonical itself. Thus many cartographers aiming to illustrate reference works on Tolkien's legendarium turn to her map as a basis for producing as close as we can get to an "official" map of Arda. And finally, we have maps drawn with an expansive agenda. Because of Fonstad's own curatorial orientation, she did not fill out the farther reaches of Middle-earth with invented place names in the way that Fenlon did. This leaves space for other fans to try to "fill in" those details, imagining what these lands might actually contain (e.g. Beregruth n.d., SuperFox89 2015).

One notable example of this expansive world-building built atop Fonstad's maps is a paper by climate scientists at the University of Bristol, published under

the pseudonym Radagast the Brown, detailing the climatology of Middle-earth (Radagast 2013). The underlying geographical data on which the climate models were run in Radagast's paper were drawn from Fonstad. The climate modeling then enables the authors to infer further detail about the wider world (as well as to check the plausibility of the northwestern areas explored in *LotR*).

Another intriguing artifact that emerged following the Ambarkanta and Fonstad maps was an attempt by Thomas Morwinsky, Stéphane Hœrlé, Gabriele Quaglia, Oliver Schick, and Christian Schröder to reconcile the canonical data from HoME and Tolkien's other works with the extensive body of geographical information developed in the wake of Fenlon's MERP map (Morwinsky et al. 2007). Their stated goals were "Being very close to Tolkien's final ideas concerning the shape of the world of Middle-earth," and "Retaining as much of Pete Fenlon's continent as possible." Their discussion is worth reading for anyone interested in the geography of Arda, as they part ways with Fonstad on a number of points. The end result was a series of maps, which progressed from a more Ambarkanta-like First Age to a Third Age much closer to Fenlon's map. These maps demonstrate a deep dedication to the curatorial impulse, albeit one that considers both Tolkien's work and MERP modules as the canon to be codified and reconciled.

The Ambarkanta-Fonstad tradition of maps brings an additional cartographic element to the table: projections and graticules. Day's map gives no indication of where on the globe it is located (as noted in my discussion above of possible placements of the equator), or of the projection (assuming such a question even makes sense for a map that is a composite of flat world and round world geography). Fenlon's map can be placed roughly on the basis of the realistic climate zones, but likewise says nothing about projection. But the difficulties of reconciling the Ambarkanta maps with a round Third Age forced cartographers to think about these problems. While not universal, indications of projection are at least present in some post-Ambarkanta cartography. Fonstad's main Third Age map eschews indications of projection (consistent with her complaints that the scale and north arrow on Christopher's map make it unable to be reconciled with any projection). But her map illustrating the journey on the Straight Road at the end of *LotR* uses an orthographic projection, whose illusion of looking at a globe emphasizes the roundness of the world. Other fan cartographers appear to use cylindrical projections like the equirectangular, or pseudo-cylindrical ones like the Robinson.

The Early Modern Connection

Thus far, I have made note of bodies of fan cartography directly inspired by the three most well-known published maps of Arda, by Day, Fenlon, and Fonstad. A further interesting cluster of fan maps does not draw directly on any of these sources, but does engage with the idea that Middle-earth is an earlier stage of our world and thus might have parallel geography. We might, with some license, refer to these as an "Ortelius" family of maps, as they – like Tolkien – seem to draw from the vision of the world captured by early modern cartographers like Abraham Ortelius (e.g. Rydman n.d., Dwarrow Scholar 2012) (Fig. 1g).

Several geographical features are common (though not universal) in these Ortelius family maps. Like the Ambarkanta and Fonstad, they depict Harad as a pseudo-Africa – albeit often with the addition of an island similar to Madagascar that increases the primary world parallelism. They depict a southern continent similar to the Dark Lands or Terra Australis. If they show an additional continent on the far side of the world, it often bears a general resemblance to the Americas (unlike Fonstad's crescent-shaped eastern continent). Where the Ambarkanta and Fonstad include no region directly paralleling peninsular Southeast Asia, these Ortelius family fan maps almost always include a pseudo-Southeast Asia. This feature brings them into closer correspondence with the primary world, as well as to early modern European maps that always showed this region in recognizable (if at times highly inaccurate) form. But the most striking feature of some of these maps, which shows their specific reliance on early modern European maps, is their treatment of the South Asian subcontinent. Many European maps of the 1400s and 1500s (albeit not Ortelius's) drew heavily on the work of Ptolemy, a second-century Alexandrian geographer whose work was viewed as the highest authority by European cartographers. Ptolemy represented the peninsula of India as a short stump capped by an enormously exaggerated island of Sri Lanka (see examples in Nordenskiöld 1973). Among these is Martin Waldseemüller's *Universalis Cosmographia* of 1507 (Fig. 1f), famous for bestowing the name "America" on that continent. The pseudo-South Asia on the Ortelius fan maps frequently takes the same form as Ptolemy's, with a large island in place of the peninsula found in the Ambarkanta and Fonstad.

The dedication of these Ortelius fan cartographers to matching the primary world's geography can at times make the northwest stand out for its lack of

parallelism. While the northwest is culturally a pseudo-Europe, its specific geography does not parallel that of Europe in any detail, and fan cartographers are constrained by the great deal of geographical information that canon gives us for that region.

Whether intended by the artists or not, fan cartographers in the Ortelius family make an intriguingly layered statement by drawing on the geographical content, not just the cartographic style, of early modern European world maps. For those of us who spend our lives immersed in highly accurate maps of the world, the inaccuracies and distortions of early modern maps create a sense of a world that is mysterious and just a little bit alien. The mystery of these maps is then connected by fan cartographers with the mystery of Middle-earth, blurring the line between an older conception of the world, and an older world. Like Calvin's dad (in the Calvin and Hobbes comic) explaining that old photos are color photos of a world that was black and white (Watterson 1991: 23), these maps suggest the possibility of traveling back in time to visit the geography of Ortelius, Waldseemuller, or Ptolemy.

Independent Fan Maps

A final cluster of fan maps of Arda dispense with the specific parallels to the shape of the primary world. In these maps, the remainder of Arda is relatively wide open as a place to locate invented mountains, forests, and seas. Unlike the families described above, these maps do not share any specific geographical commonalities – no shapes of continents or names of new lands that run through them all. But this is not simply a residual category or "other" grouping. Instead, these independent maps demonstrate a shared process of world-building, an investment in the expansive impulse in fan cartography. To illustrate this process, I will draw on two well-developed examples: the "I've Seen Hell" map by CeffylGwyn, and the Evolution and Ecology project map.

Fan writer CeffylGwyn created a continental-scale map to accompany her fanfiction *I've Seen Hell* (CeffylGwyn 2017) (Fig. 1h). The map appears on a website of appendices, where the author states "as of yet, I have not found any maps detailing the lands East of Middle Earth," and invites readers to contact her with any canonical information about eastern geography that she may have missed (CeffylGwyn n.d.). The story takes place in the Fifth Age, when hostile peoples and orcs have taken over most of Endor. The main character is a Dwarf

from Erebor named Hlíðhrím, who with a resurrected Thorin Oakenshield goes on a journey through the lands east of Christopher's map. With no other sources at hand to draw on, the author builds out the extent of the continent based on her own ideas and the needs of the story (as well as a map of Spain, though she is right to note that "you probably won't be able to tell!"). Author's notes with the chapters indicate that the map grew and developed with the writing of the story, though only the finished version remains available. CeffylGwyn states an intention to "expand the ethnicity of Middle-Earth (because quite frankly it is very mono-cultured if you know what I'm saying) ... Each continent (Excluding AUS and NZ) is represented in some form or another." Thus each of the peoples in the expanded east and south of Middle-earth is based on the author's understanding of a real-world culture, paralleling the worldbuilding behind the MERP map. The list of cultures so represented gives a window into the author's conception of our world, for example that the Minhion people are based on a single amalgamated "African tribesmen" culture.

The Evolution and Ecology project map is actually a set of maps, based on the same two base maps of the First Age and Second Age (Fig. 1i-j). The central part of the First Age map strongly resembles Fonstad's representation of the First Age as drawn from the *Ambarkanta*. To the west is an expanded continent of Valimar, while to the east are two more large continents, Orocarnia and Kalorme. The northern polar area is occupied by a large ice cap. And strikingly, this is a round world, as bits of eastern Orocarnia appear again to the west of Valimar. The Second Age map is indicated to represent a situation 10 million years later (in contrast with the catastrophist geology of Tolkien's canon, Behrooz 2019). Valimar has moved westward by continental drift, with Numenor arising on the mid-ocean ridge like Iceland. The Dark Land in the south has drifted eastward to collide with Orocarnia and Kalorme, forming a massive "Greater Kalorme" traversed by a Himalaya-like mountain range. And the polar ice cap has melted, raising sea levels worldwide.

Though plain versions of these maps showing simply the coastlines and mountain ranges circulate online, most versions of the maps are colored in to show the major terrestrial biomes that would exist, based on real-world climatology. A second version shows average sea temperatures.

The biome and sea temperature versions of these maps are present on a series of websites that appear to have been constructed for a biology class project for a unit on evolution and ecology in 2014 or 2015 – hence the name I have given

them.³ Each site, built through weebly.com, consists of a similar structure. A specific organism – Grevy's zebra, blue-spotted ribbontail stingrays, weasels, etc – is discussed in some detail in several tabs, which cover its biology and ecological relationships. One tab then presents the biome maps of Arda and applies the creator's knowledge to inferring where on Arda this species would live during the two given time periods. Unfortunately, none of these sites gives the author's contact information or any details about the class for which they were constructed (beyond a few mentions of "Biology 2nd period," "3rd period," and "6th period," which imply that this class is in high school). Even the precise number of these sites in existence is unclear – the present author has uncovered at least 34 of them through web searches, but there seems to be no centralized listing.

Taking the license to presume that the original creator of the Evolution and Ecology maps was the teacher in the class, we can credit this teacher with a world-building effort on a similar scale, but with a very different end goal, than CeffylGwyn. The teacher took the canonical and semi-canonical geography of Middle-earth from Tolkien, then expanded it to create a multi-continental world. Here the creator's interest was less in exploring the world through story, and more in examining the biological and geological processes that could occur on the planet of Arda (paralleling the concerns of Radagast 2013). The parameters of the newly invented lands seem to be chosen specifically to illustrate basic tectonic and climatological processes, like divergent plate boundaries, mountain-building, island arcs, glacial/interglacial cycles, rain shadows, and the primary circulation of the atmosphere. At the same time, these processes are used to explain events in Tolkien's mythology. For example, in the First Age the Helcaraxë consists of a narrow land bridge between Valimar and Endor adjoined by the northern ice cap. In the Second Age, continental drift has separated the continents and widened Belegaer, while Beleriand along with other coastal areas has been flooded by post-glacial sea level rise. The Evolution and Ecology students were drawn into

3 Sample project websites include:

Bengal tiger: <https://biologyfinalproject6.weebly.com/>

Elephant: <https://ecologyevolutiononelephants.weebly.com>

Immortal jellyfish: <https://turritopsisnutricula.weebly.com/>

Moose: <https://watchawannaknowboutmoose.weebly.com/>

West Indian manatee: <https://cowsofthesea.weebly.com/>

this project by the work of situating their chosen species within the expanded world of Arda. The overall effect is to rationalize Arda, finding the science behind the myth.

The key characteristic of this Independent family of maps, then, is the creators' deep investment in the expansive impulse in fandom. The goal is not simply to compile what Tolkien has said about the wider geography of Arda or even to infer what he would have said had he written a revised *Ambarkanta* later in life. Instead, these Independent maps are one product of taking Tolkien's canonical world as a starting point for engaging in further subcreation, guided by the author's own creative agenda.

Conclusion

This investigation into maps of Arda leads to several significant conclusions. First, there is a persistent interest in the geography of Arda beyond the areas traversed in the *Lord of the Rings*. This is a testament to Tolkien's skill in creating a world with a sense of depth, which spurs readers to want to know more about the world outside what appears in the canonical narrative.

Second, we see a divide between two different guiding impulses in mapping Arda. The curatorial impulse aims at giving a comprehensive presentation of canonical information, minimizing new invention. The expansive impulse treats the gaps in Tolkien's canon as opportunities for original world-building.

Third, we can identify definite lineages of maps, summarized in Figure 2. The majority of cartographers are interested primarily in the artistic rendering of the map. They thus follow the footsteps of those like Day or Fonstad (or primary world cartographers), adopting their world-building work. This creates clearly visible lines of descent even when little is known about the specific circumstances under which a map was created. Mapmakers who do engage in their own world-building end up creating their own sub-branches of the tree of maps.

Fourth, we can look to those worldbuilders for indications of how they interpret primary-world geography. Even when no effort is made to match the shapes of the continents to those in the primary world, we see principles of primary world geography being applied to the world-building enterprise. This encompasses both physical geography – such as climatology and plate tectonics – as well as the human geography of cultures and political units. This demonstrates

the fruitfulness of looking at fan cartography and amateur world-building as a way of understanding how members of the public understand geographical ideas.

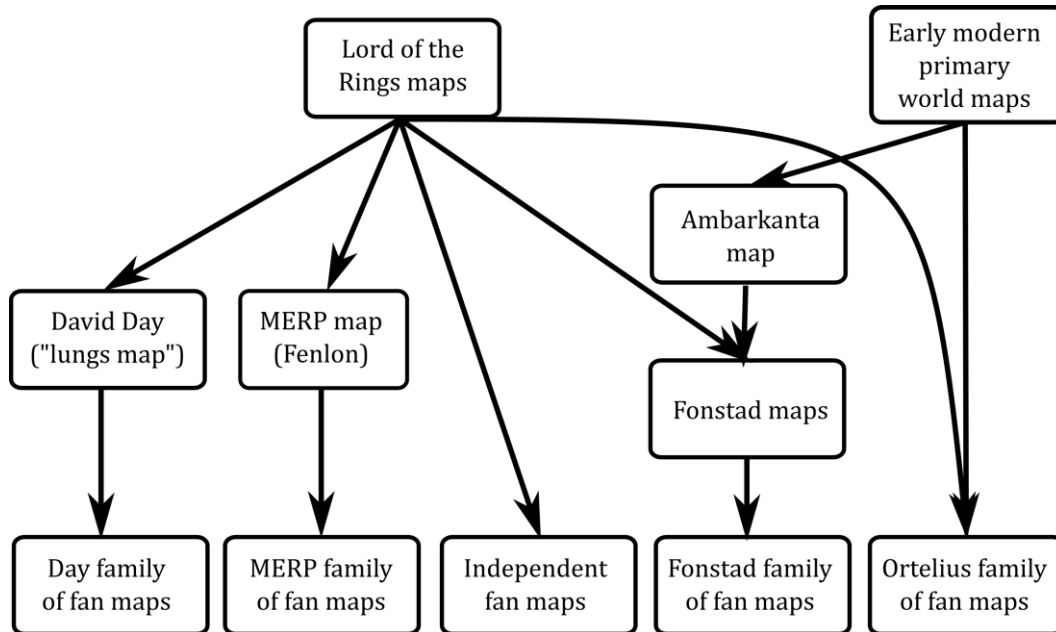


Figure 2. Genealogy of maps of Arda

Finally, we can note the repeated emergence of rationalizing activity in mapping the farther reaches of Arda. In the application of the above-noted primary world concepts, cartographers have worked to impose coherence on the resulting sub-creation in terms of things like climate systems and map projections. This is a problem that Tolkien himself wrestled with, as evidenced by the set of essays Christopher labels "Myths Transformed" (Tolkien 1991). Some critics have argued that rationalistic world-building of this sort undermines the mythopoetic value of sub-creation (e.g. Izzo 2019, Makai 2019). While I would refrain from the implied value judgment of these critics, it is clear from an examination of extended maps of Arda that conceptualizing Arda as a planet to be fully mapped tends to press sub-creation in the direction of world-building rather than mythopoeia.

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